CKD



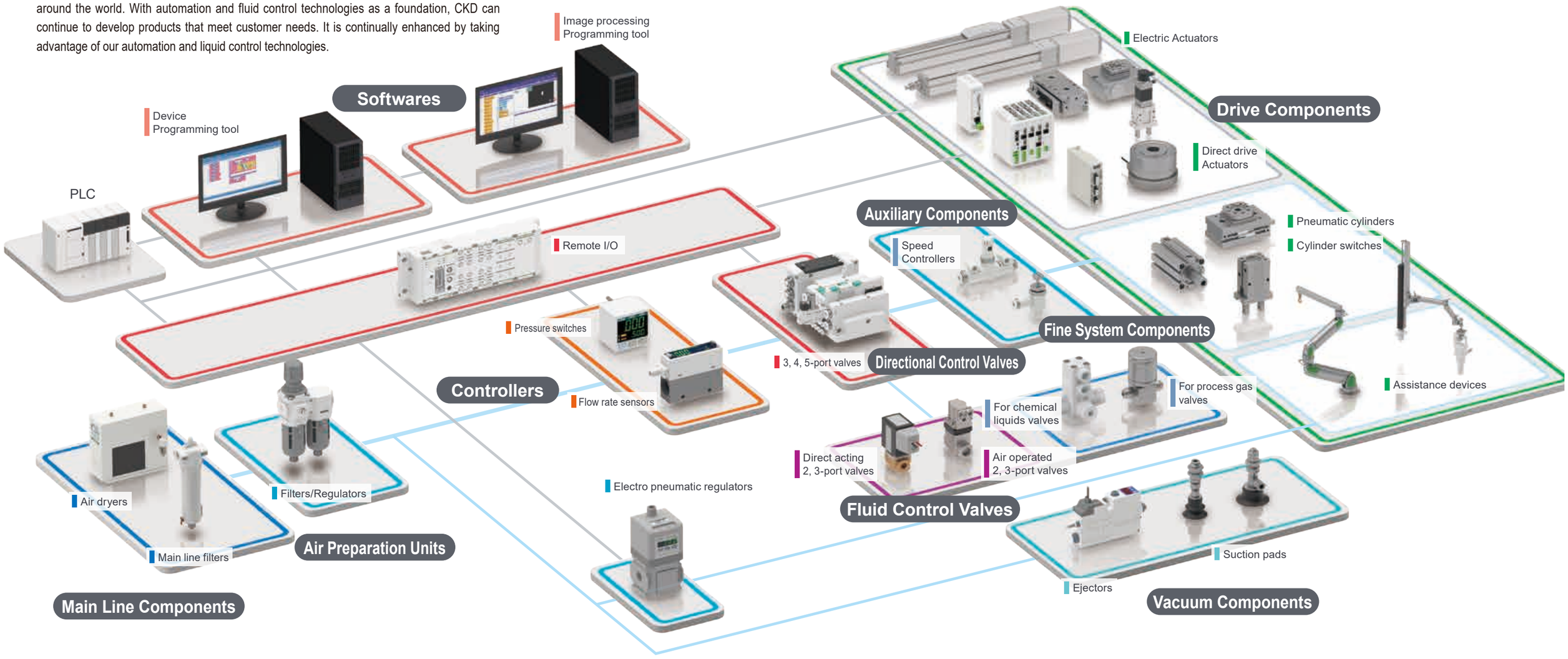
Pneumatic Cylinders ②

Space-Saving Types

CKD products seen from their configuration images

Both Air and Electric. From software to I/O unit

CKD's product lineup has been expanding steadily, contributing to the creation of products around the world. With automation and fluid control technologies as a foundation, CKD can continue to develop products that meet customer needs. It is continually enhanced by taking advantage of our automation and liquid control technologies.



CKD products by application

High Durability components
HP Series

Long service life
Environmental resistance

HP
HIGH PRODUCTIVITY


CC-1421A

For food manufacturing processes
FP Series

FP Food Process™


CC-1271A

For outdoor use WP Series

WEATHER PROOF


CC-1276A

Rechargeable Battery Manufacturing Process P4 Series

Material restrictions
1/5 or less dust generation rate


CC-1226AA

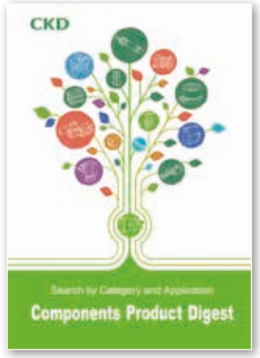
For Clean Components
P5/P7 Series

Low particle generation exhaust port


CB-033SA

Guide to the CKD catalog

Learn more about each product category in the booklet catalog



RJ-001AA

The Digest Catalog allows you to search for components you are looking for by overview

Detailed specifications are available in the respective Booklet and WEB catalogs.

Main Line Component Products
Gas Generators

Air Dryers | Main Line Filters | Condensate Drains | Nitrogen gas extraction units

RJ-009AA



Refining and pressure adjusting components
Auxiliary Components

Filters | Regulators | Pressure gauges | Speed controllers | Silencers | Fittings | Tubes

RJ-007



Sensors/Controllers

Pressure switches | Flow rate sensors | Flow rate controllers | Air sensors

RJ-008AA



Precision / Vacuum Components

Air bearings | Ejector systems | Vacuum pump systems | Suction Pads

RJ-010AA



Fluid Control Valves

Solenoid valves | Air operated valves | Ball valves

RJ-013



Wet Fine System/High Purity Chemical Liquid System

CB-031A

Dry Fine System/High Purity Gas Control System Components

CB-035A



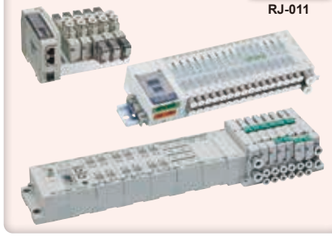
Learn more on the WEB

https://www.ckd.co.jp/kiki/en/

Directional Control Valves (1)

Plug-in Block Manifolds | 3, 4, 5-port valves | Remote I/O

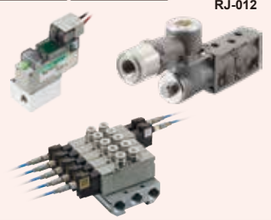
RJ-011



Directional Control Valves (2)

2, 3, 5-port valve | Explosion-proof | Air operated valve | Manual selector valve

RJ-012



Pneumatic Cylinders (1)

Standard

RJ-002AA



Pneumatic Cylinders (2)

Space saving structures

RJ-003AA



Pneumatic Cylinders (3)

With linear guide | With guide

RJ-004AA



Pneumatic Cylinders (4)

Rodless | With brake | Clamps | Oscillation / Rotation

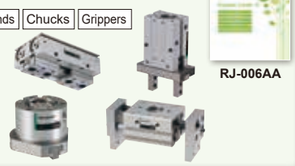
RJ-005



Pneumatic Cylinders (5)

Hands | Chucks | Grippers

RJ-006AA



Visual Programming Tool for Image Processing

Facilea
CC-1548AA

Facilea AI
CC-1623A

Device Visual Programming Tool

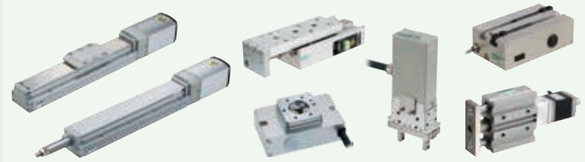
ExiaStudio
CC-1579AA



Electric Actuators

ROBODEX Pulse

RJ-014AA



Electric Actuators

ROBODEX Std.
CB-055A



Electric Actuators

ROBODEX Servo
CC-1275AA CC-1436AA



ABSODEX

ABSODEX
CC-1614AA



INDEX

Search by Product Name/Model No.
Product Name Intro 1
Model No. Alphabetical Index Ending 38

Search by Product System List Intro 3
You can select by the appearance and product overview of each series.

CAD Data Usage Guide Intro 17

Website Guide Intro 19

Model Selection System Guide Intro 20

⚠Precautions for Use
● Precautions for Pneumatic Equipment Intro 39
● General Precautions for Pneumatic Cylinders Intro 41
*For precautions for each product, be sure to read the individual precautions for each model series in the main text.

Technical Data Intro 22

Flow Characteristics Notation Method Intro 35

Protective Structure Intro 37

CE Marking Ending 30

CKD RoHS Compliance Ending 32

ISO9001/ISO14001 Certification Acquisition Ending 34

Index (Alphabetical Index) Ending 38

Regarding the International System of Units (SI Units) List of Circuit Diagram Symbols Available on the CKD website.

https://www.ckd.co.jp/kiki/en/

Space-saving Type
>>> P. 1

Cylinder Switch
>>> P.869

Product Group		Product Name	Page
	Compact Cylinder >>> P. 3	SSD2	12
	Guided Compact Cylinder >>> P. 329	SSG	334
	Compact Cylinder >>> P. 349	SSD	362
	Cartridge Cylinder >>> P. 703	CAT	706
	Small Direct Cylinder >>> P. 713	MDC2	718
	Compact cylinder >>> P. 749	SMG	754
	Compact Cylinder >>> P. 785	MSD	792
	Flat Cylinder Compact Demi >>> P. 829	FC□	836
	Cylinder Switch >>> P. 869	M Series/R Series/T Series/K Series F Series/H Series/V Series/E Series	869

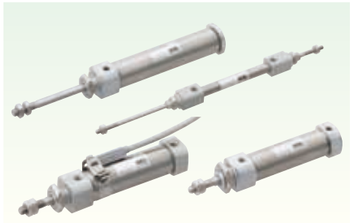
Search by Product System List

Products can be selected by series appearance and product overview.

General-type >>> Pneumatic Cylinder ① Catalog NO. RJ-002AA

Standard, small bore size cylinders **(ø2.5 to ø16)**

Pencil-type compact cylinder



Pencil Shaped Cylinder

SCP□3

Series	Also known as...	Bore size (ø)
SCPD3	Single Rod Type	6, 10, 16
SCPS	Single Acting, Push Type	2.5, 4
SCPS3	Single Acting, Push Type	6, 10, 16
SCPH3	Single Acting, Retracting Type	
SCPD3-T	Heat resistant type	6, 10, 16
SCPD3-□C	With Rubber Air Cushion	
SCPD3-F	Ultra Low Speed Type	
SCPD3-O	Low Speed Type	
SCPD3-D	Double rod type	
SCPD3-Z	With Speed Controller	10, 16
SCP□3-M	Non-Rotating Type	
SCPD3-K	High Load Type	6, 10, 16
SCP□3-V	With Valve	10, 16

Standard, medium bore size cylinders **(ø20 to ø40)**

Stainless steel tube for high corrosion resistance



Small bore size cylinder

CMK2

Series	Also known as...	Bore size (ø)
CMK2	Single rod type	20, 25, 32, 40
CMK2-S	Single Acting, Push Type	
CMK2-SR	Single Acting, Retracting Type	
CMK2-P	Stroke Adjustable Type (Push)	
CMK2-R	Stroke Adjustable Type (Pull)	
CMK2-T	Heat resistant type	
CMK2-□C	With Rubber Air Cushion	
CMK2-C	Air Cushion Type	
CMK2-Q	Drop prevention type	
CMK2-F	Ultra Low Speed Type	
CMK2-D	Double rod type	
CMK2-B	Back-to-Back Type	
CMK2-M	Non-Rotating Type	
CMK2-Z	Built-in Speed Controller Type	
CMK2-H	Low Hydraulic Pressure Type	
CMK2-G2/G3	Cutting Oil Resistant Type	
CMK2-JG2/JG3	Stainless Steel Type	

Standard, medium bore size cylinders **(ø20 to ø40)**

Serviceable type for maintenance



Small Bore Size Cylinder

CMA2

Series	Also known as...	Bore size (ø)
CMA2	Single rod type	20, 30, 40
CMA2-E	Direct Type	

General Type/Medium Bore Cylinder **(ø20 to ø100)**

Smart type with abundant bore sizes and options



Round shaped cylinder

SCM

Series	Also known as...	Bore size (ø)
SCM	Single rod type	20 to 100
SCM-X	Single Acting, Push Type	20 to 40
SCM-Y	Single Acting, Retracting Type	
SCM-P	Stroke Adjustable Type (Push)	20 to 63
SCM-R	Stroke Adjustable Type (Pull)	
SCM-T	Heat resistant type	20 to 100
SCM-Q	Drop prevention type	
SCM-F	Ultra Low Speed Type	20 to 40
SCM-O	Low Speed Type	20 to 100
SCM-U	Low Friction Type	
SCM-D	Double rod type	
SCM-B	Back-to-Back Type	20 to 63
SCM-W	Two-Stage Type	
SCM-W4	Tandem Type	
SCM-M	Non-Rotating Type	
SCM-LD	Direct Foot Type	

General Type/Medium Bore Cylinder **(ø32 to ø100)**

Environmentally friendly tie-rod cylinder



Tie Rod Cylinder

SCG

Series	Also known as...	Bore size (ø)
SCG	Single rod type	32 to 100
SCG-Q	Drop prevention type	
SCG-O	Low Speed Type	
SCG-U	Low Friction Type	
SCG-D	Double rod type	
SCG-M	Non-Rotating Type	32 to 63
SCG-G	Heavy-Duty Scraper Type	32 to 100
SCG-G2/G3	Cutting Oil Resistant Type	40 to 100
SCG-G4	Sputter adhesion prevention type	32 to 100

General Type/Medium Bore Cylinder **(ø40 to ø100)**

Robust type with No. 1 reliability



Medium Bore Size Cylinder

SCA2

Series	Also known as...	Bore size (ø)
SCA2	Single rod type	40, 50, 63, 80, 100
SCA2-P	Stroke Adjustable Type (Push)	
SCA2-R	Stroke Adjustable Type (Pull)	
SCA2-T	Heat resistant type	
SCA2-Q2	Drop prevention type	
SCA2-O	Low Friction Type	
SCA2-U	Low Friction Type	
SCA2-D	Double rod type	
SCA2-B	Back-to-Back Type	
SCA2-W	Two-Stage Type	
SCA2-K	Steel Tube Type	
SCA2-H	Low Hydraulic Pressure Type	
SCA2-G	Scraper Type	
SCA2-G2/G3	Cutting Oil Resistant Type	
SCA2-G1/G4	Sputter adhesion prevention type	
SCA2-V	With Valve	

General Type/Large Bore Cylinder **(ø125 to ø250)**

Wide variations and high rigidity



Medium Bore Size Cylinder

SCS2

Series	Also known as...	Tube Bore (ø)
SCS2	Lubricated Type	125, 140, 160, 180, 200, 250
SCS2-N	Non-Lube Type	
SCS2-P	Stroke Adjustable Type (Push)	
SCS2-T	Heat resistant type	
SCS2-D	Double Rod Type/Lubricated Type	
SCS2-ND	Double Rod Type/Non-Lube Type	
SCS2-B	Back-to-Back Type	
SCS2-W	Two-Stage Type	
SCS2-H	Low Hydraulic Pressure Type	
SCS2-G	Heavy-Duty Scraper Type	

Space-saving Type >>> Pneumatic Cylinder ② P. 1

Space-Saving/Super Compact **(ø12 to ø200)**

Wide variations/Switch mountable on 4 surfaces compact type



Listed Page From P. 3

Compact Cylinder

SSD2

Series	Also known as...	Tube Bore (ø)	Page
SSD2	Single Rod Type	12 to 200	12
SSD2-K	High Load Type	12 to 100	36
SSD2-L	Long stroke		48
SSD2-X	Push Type	12 to 50	60
SSD2-Y	Retracting Type		60
SSD2-T1	Heat resistant type	12 to 100	78
SSD2-T1L	With Heat Resistant Cylinder Switch	16 to 63	82
SSC2-K-□C	High Load Type/With Rubber Air Cushion	20 to 100	92
SSD2-Q	Drop prevention type		100
SSD2-F/ SSD2-KF	Fine Speed Type/High Load/Fine Speed Type	12 to 100	114
SSD2-O	Low Speed Type		118
SSD2-KU	High Load/Low Friction Type	20 to 100	124
SSD2-D	Double rod type	12 to 200	128
SSD2-B	Back-to-Back Type	12 to 100	148
SSD2-W	Two-Stage Type		158
SSD2-M	Non-Rotating Type	12 to 63	166
SSD2-DM	Double Rod/ Non-Rotating Type		178
SSD2-G	Heavy-Duty Scraper Type	20 to 100	188
SSD2-G2/G3	Cutting Oil Resistant Type	16 to 100	198
SSD2-KG2/ KG3	High Load/Cutting Oil Resistant Type		208
SSD2-G1	Coil Scraper Type	25 to 100	218
SSD2-G4	Sputter adhesion prevention type		218
SSD2-KG1	High Load/Coil Scraper Type		226
SSD2-KG4	High Load/Spatter Adhesion Prevention Type		226
SSD2-DG1	Double Rod/Coil Scraper Type		236
SSD2-DG4	Double Rod/ Spatter Adhesion Prevention Type		236
SSD2-G5	Environment Resistant Scraper Type	20 to 100	244
SSD2-KG5	High Load/ Environment Resistant Scraper Type		256
SSD2-L4	With Strong Magnetic Field Resistant Switch	40 to 100	268
SSD2-KL4	High Load/With Strong Magnetic Field Resistant Switch		276
SSD2-G1L4	With Strong Magnetic Field Resistant Switch/ With Coil Scraper		284
SSD2-KG1L4	High Load/With Strong Magnetic Field Resistant Switch/With Coil Scraper		292

Space-Saving/Guided/Super Compact **(ø12 to ø100)**

SSD2 series equipped with guide rod



Listed Page From P. 329

Guided Compact Cylinder

SSG

Series	Also known as...	Tube Bore (ø)	Page
SSG	Single Rod Type	12 to 100	334

Search by Product System List

Products can be selected by series appearance and product overview.

Space-saving Type >>> Pneumatic Cylinder ② P. 1

Space-Saving/Super Compact **(ø12 to ø160)**

Compact type with abundant bore sizes and options



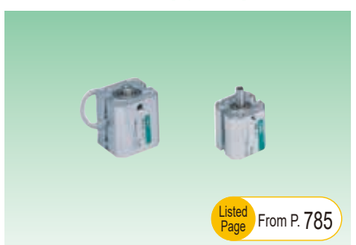
Compact Cylinder

SSD

Series	Also known as...	Tube Bore (ø)	Page
SSD	Single Rod Type	12 to 160	362
SSD-K	Single Rod High Load Type	12 to 100	388
SSD-X	Single Acting, Push Type	12, 16, 20,	404
SSD-Y	Single Acting, Retracting Type	25, 32, 40, 50	404
SSD-T	Heat resistant type	12 to 100	426
SSD-T1L	With Heat Resistant Cylinder Switch	16 to 63	432
SSD-K-□C	High Load Type/With Rubber Air Cushion	32 to 100	446
SSD-Q	Drop prevention type	16 to 100	456
SSD-F	Low speed type	12 to 100	474
SSD-KF	High Load Type/Fine Speed Type		474
SSD-O	Low Speed Type		480
SSD-KU	High Load/Low Friction Type	20 to 100	486
SSD-D	Double rod type	12 to 160	490
SSD-B	Back-to-Back Type	12 to 100	506
SSD-W	Two-Stage Type		516
SSD-M	Non-Rotating Type	12 to 63	526
SSD-G2/G3	Cutting Oil Resistant Type	16 to 100	540
SSD-K G2/G3	High Load, Cutting Oil Resistant Type		550
SSD-G1/G4	Sputter adhesion prevention type	25 to 100	560
SSD-K G1/G4	High Load, Spatter Adhesion Prevention Type		574
SSD-D G1/G4	Double Rod, Spatter Adhesion Prevention Type		590
SSD-G5	Environment Resistant Scraper Type	20 to 100	604
SSD-KG5	High Load/Environment Resistant Scraper Type	20 to 100	618
SSD-L4	With Strong Magnetic Field Resistant Switch	40 to 100	634
SSD-G1L4	With Strong Magnetic Field Resistant Switch/With Coil Scraper		654
SSD-KL4	High Load Type With Strong Magnetic Field Resistant Switch		644
SSD-KG1L4	High Load Type With Strong Magnetic Field Resistant Switch/With Coil Scraper		664

Space-Saving/Compact Cylinder **(ø6 to ø16)**

SSD small bore series. With high-precision guide also available



Compact Cylinder

MSD

Series	Also known as...	Tube Bore (ø)	Page
MSD	Single Rod Type	6, 8	792
MSD-X	Single Acting, Push Type		800
MSD-Y	Single Acting, Retracting Type		800
MSD-K	High Load Type	6, 8, 12, 16	808
MSD-F	Ultra Low Speed Type	6, 8	816
MSD-KF	High Load Type/Fine Speed Type	6, 8, 12, 16	816

Space-Saving/Compact Single Acting Type **(ø6 to ø15)**

Thumb-sized with fully threaded outer diameter



Cartridge Cylinder

CAT

Series	Also known as...	Tube Bore (ø)	Page
CAT	Single Acting, Push Type	6, 10, 15	706

Space-Saving/Multi-Surface Mount Type **(ø6 to ø32)**

More compact than conventional products, direct mount



Compact cylinder

SMG

Series	Also known as...	Tube Bore (ø)	Page
SMG	Single Rod Type	6 to 32	754
SMG-X	Push Type		762
SMG-Y	Retracting Type		762
SMG-F	Ultra Low Speed Type		770
SMG-M	Non-Rotating Type		774

Space-Saving/Flat Type **(ø25 to ø63)**

Mountable even in narrow spaces. With rotation stop function



Flat Cylinder Compact Demi

FC□

Series	Also known as...	Tube Bore (ø)	Page
FCS	Single Acting, Push Type	Equivalent to 25, 32, 40, 50, 63	836
FCH	Single Acting, Retracting Type		836
FCD	Single Rod Type		846
FCD-D	Double rod type		852
FCD-K	With Cushion		858

Space-Saving/Direct Mount Type **(ø4 to ø10)**

Direct mounting possible from 4 directions



Compact Direct Cylinder

MDC2

Series	Also known as...	Tube Bore (ø)	Page
MDC2	Single Rod Type	4, 6, 8, 10	718
MDC2-X	Push Type		726
MDC2-Y	Retracting Type		726
MDC2-F	Ultra Low Speed Type		738

Cylinder Switch

>>> Pneumatic Cylinder ① P. 869

Wide variety available



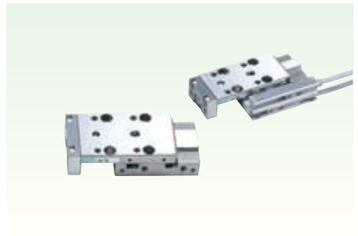
Cylinder Switch

Series	Page
2-Color Indicator Solid State Cylinder Switch	876
Strong Magnetic Field Resistant Cylinder Switch	877
M Series	880
R Series	882
T Series	884
Water-resistant Cylinder Switch	888
Magnetic Field Resistant Cylinder Switch	890
K Series	892
F Series	894
H Series	896
V Series	897
E Series	898

With Linear Guide >>> Pneumatic Cylinder ③ Catalog No. RJ-004AA

With High-Precision Guide **(ø4.5 to ø8)**

High precision and rigidity in a compact size



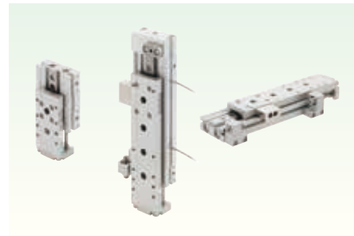
Linear Slide Cylinder

LCM

Series	Also known as...	Tube Bore (ø)
LCM	Single Rod Type	4.5 to 8
LCM-P	Stroke Adjustable Type (Push)	
LCM-R	Stroke Adjustable Type (Push/ Retract)	
LCM-A	Side Mount Type	

With High-Precision Guide **(ø6 to ø25)**

Thorough weight reduction, increased rigidity



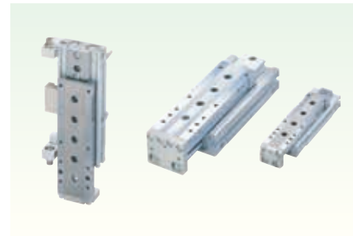
Linear Slide Cylinder

LCR

Series	Also known as...	Tube Bore (ø)
LCR	Basic type	6 to 25
LCR-Q	Drop prevention type	8 to 25
LCR-F	Ultra Low Speed Type	12, 16, 20, 25

With High-Precision Guide **(ø6 to ø25)**

Emphasis on high precision and high rigidity. Easier to use



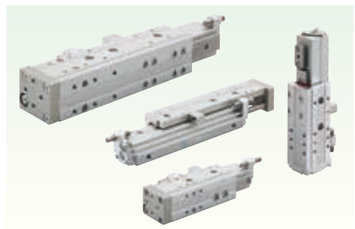
Linear Slide Cylinder

LCG

Series	Also known as...	Tube Bore (ø)
LCG	Single Rod Type	6 to 25
LCG-Q	Drop prevention type	8 to 25

With High-Precision Guide **(ø12 to ø20)**

Standardly equipped with specs frequently used by customers



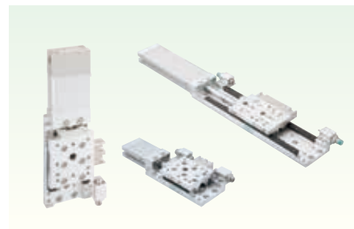
Linear Slide Cylinder

LCW

Series	Also known as...	Tube Bore (ø)
LCW	Single Rod Type	12 to 20
LCW-Q	Drop prevention type	

With High-Precision Guide **(ø25, ø32)**

Ideal for space-saving applications due to thorough thinning



Thin Linear Slide Cylinder

LCX

Series	Also known as...	Tube Bore (ø)
LCX	Single Rod Type	25, 32
LCX-Q	Drop prevention type	
LCX-□L	Long stroke	
LCX-Q-□L	Fall Prevention Type/Long Stroke	

Guided Compact Cylinder **(ø6 to ø16)**

SSD small bore series. With high-precision guide also available



Compact Cylinder with Compact Linear Guide

MSDG

Series	Also known as...	Tube Bore (ø)
MSDG-L	Guided Type	6, 8, 12, 16
MSDG-LF	Guided Type/Fine Speed Type	12, 16

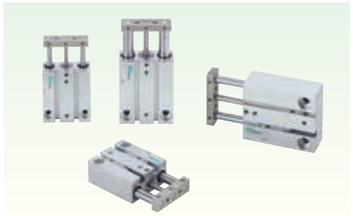
Search by Product System List

Products can be selected by series appearance and product overview.

Guided >>> Pneumatic Cylinder ③ Catalog No. RJ-004AA

Guided Cylinder **(ø6, ø10)**

Extremely small guided space-saving type



Cylinder with Compact Guide

STM

Series	Also known as...	Tube Bore (ø)
STM-M/B	Single Rod Type	6, 10

Guided Cylinder **(ø12 to ø100)**

Environmentally friendly product. Improved load resistance



Guided Cylinder

STG

Series	Also known as...	Tube Bore (ø)
STG-M/B	Single Rod Type	12 to 100
STG-M/B-□C	Rubber Air Cushion Type	32 to 63
STG-M/B C	Air Cushion Type	16 to 63
STG-M/B Q	Drop prevention type	20 to 63
STG-M/B G	Heavy-Duty Scraper Type	
STG-M/B G1	Coil Scraper Type	
STG-MG2/ MG3	Cutting Oil Resistant Type	
STG-M/B G4	Sputter adhesion prevention type	40 to 63
STG-MG5	Environment Resistant Scraper Type	20 to 100
STG-K	Heavy-Duty Guide Rod Type	32, 50

Guided Cylinder (ø8 to ø100)

Abundant bore sizes and variations



Guided Cylinder

STS/STL

Series	Also known as...	Tube Bore (ø)
ST S/L-M/B	Single Rod Type	8 to 100
ST S/L-M/B P	Stroke Adjustable Type (Push)	8 to 80
ST S/L-M/B T	Heat resistant type	12 to 80
ST S/L-M/B T2	Packing Material: Fluoro Rubber	
ST S/L-M/B-□C	Rubber Air Cushion Type	32 to 80
ST S/L-M/B C	Air Cushion Type	25 to 80
ST S/L-M/B Q	Drop prevention type	20 to 80
ST S/L-M/B F	Ultra Low Speed Type	8 to 80
ST S/L-M/B O	Low Speed Type	
ST S/L-M/B G	Heavy-Duty Scraper Type/	20 to 80
ST S/L-M/B G1	Coil Scraper Type	
ST S/L-M/B G 2/3	Cutting Oil Resistant Type	
ST S/L-M/B G4	Sputter adhesion prevention type	40 to 80
ST S/L-M/B V	Valve Mounted Type	20 to 63

Twin Rod Cylinder **(ø6 to ø32)**

High non-rotating accuracy with twin rods. For P&P applications



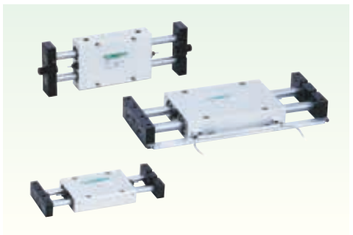
Twin Rod Cylinder

STR2

Series	Also known as...	Tube Bore (ø)
STR2-M/B	Standard type	6, 10, 16, 20, 25, 32
STR2-M/B Q	Drop prevention type	16, 20, 25, 32
STR2-M/B O	Low Speed Type	6, 10, 16, 20, 25, 32
STR2-M/B F	Ultra Low Speed Type	10, 16, 20, 25, 32
STR2-M/B D	Double rod type	6, 10, 16, 20, 25, 32

Unit Cylinder **(ø10 to ø32)**

Stable positioning accuracy with double/double rod structure



Unit Cylinder

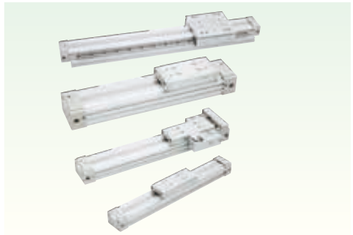
UCA2

Series	Also known as...	Tube Bore (ø)
UCA2	Sleeve Bearing Type	10, 16, 25, 32
UCA2-B	Rolling Bearing Type	

Rodless Type >>> Pneumatic Cylinder④ Catalog No. RJ-005AA

Rodless Type/Basic Type **(ø12 to ø100)**

Abundant bore sizes and variations



Rodless Cylinder

SRL3

Series	Also known as...	Tube Bore (ø)
SRL3	Standard type	Equivalent to 12, 16, 20, 25, 32, 40, 50, 63, 80, 100
SRL3-J	Full Cowl Type	
SRL3-G	With Resin Guide	
SRL3-Q	With Fall Prevention Function	
SRL3-GQ	With Resin Guide/ With Fall Prevention Function	

Rodless type / With high-precision guide **(ø12 to ø25)**

Integrated high-precision LM guide



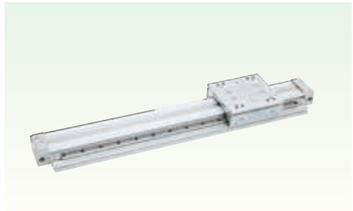
Rodless Cylinder with High-Precision Guide

SRG3

Series	Also known as...	Tube Bore (ø)
SRG3	Standard type	Equivalent to 12, 16, 20, 25

Rodless type / With high-precision guide **(ø25 to ø63)**

High-precision LM guide adopted for 2 axes. Rigidity also UP



Rodless Cylinder with High-Precision Guide

SRM3

Series	Also known as...	Tube Bore (ø)
SRM3	Double Acting Type	Equivalent to 25, 32, 40, 63
SRM3-Q	Double Acting Type/Fall Prevention Type	

Rodless Type/With Brake **(ø12 to ø63)**

Type with high-reliability brake



Rodless Cylinder with Brake

SRT3

Series	Also known as...	Tube Bore (ø)
SRT3	Double Acting Type	Equivalent to 12, 16, 20, 25, 32, 42, 50, 63

Rodless Type/Magnet Type **(ø6 to ø32)**

Rodless, further space-saving



Magnet Type Rodless Cylinder

MRL2

Series	Also known as...	Tube Bore (ø)
MRL2	Basic type	6, 10, 16, 20, 25, 32
MRL2-G	Simple Guide Type/1 Piston	
MRL2-W	Simple Guide Type/2 Pistons	
MRL2-F	Ultra Low Speed Type	

Magnet Type With High-Precision Guide **(ø10 to ø25)**

High-precision LM guide integrated into MRL2



Magnet Type Rodless Cylinder High-Precision Guide Type

MRG2

Series	Also known as...	Tube Bore (ø)
MRG2	Double Acting Type	10, 16, 25

Rodless Type/Shuttle Mover **(ø25)**

Rodless with a curve. Flexible layout possible



Shuttle Mover Standard/High Load Type

SM-25

Series	Also known as...	Tube Bore (ø)
SM-25	Standard Type	25
	High Load Type	

Search by Product System List

Products can be selected by series appearance and product overview.

With Brake/With Lock >>> Pneumatic Cylinder④ Catalog No. RJ-005AA

With Brake/Small/Medium Bore **(ø16 to ø40)**

High-performance compact brake for pencil type, etc.



Brake Cylinder (small/medium bore size)

ULK

Series	Also known as...	Tube Bore (ø)
ULK	Single Rod Type	20, 25, 32, 40
ULK-V	With Valve	20, 25, 32, 40

With Brake/Small/Medium Bore **(ø20 to ø40)**

Reliable brake equipped on CMK2/CMA2



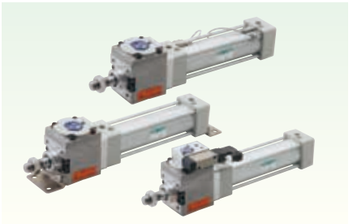
Brake Cylinder (small/medium bore size)

JSK2/JSM2

Series	Also known as...	Tube Bore (ø)
Crimped Type		
JSK2	Single Rod Type	20, 25, 32, 40
JSK2-V	With Valve	
Serviceable Type		
JSM2	Single Rod Type	20, 30, 40
JSM2-V	With Valve	

With Brake/Medium Bore **(ø40 to ø100)**

Reliable brake mechanism equipped on SCG



Tie Rod Cylinder with Brake

JSG

Series	Also known as...	Tube Bore (ø)
JSG	Single Rod Type	40, 50 63, 80, 100
JSG-V	With Brake Release Valve	

With Brake/Medium/Large Bore **(ø40 to ø180)**

Brake equipped on reliable robust cylinder



Brake Cylinder (Medium/Large Bore)

JSC3/JSC4

Series	Also known as...	Tube Bore (ø)
JSC3	Single Rod Type	40 to 100
JSC4	Single Rod Type	125 to 180
JSC3-V	With Valve for Brake	40 to 100
JSC3-H	Low Hydraulic Pressure Type	40 to 100
JSC4-H	Low Hydraulic Pressure Type	125 to 180
JSC3-T	Heat resistant type	40 to 100
JSC4-T	Heat resistant type	125 to 180

With Fall Prevention **(ø20 to ø100)**

Fall prevention function equipped on compact SSD



Compact Cylinder with Drop Prevention

USSD

Series	Also known as...	Tube Bore (ø)
USSD	Single Rod Type	20, 25, 32, 40, 50, 63, 80, 100
USSD-K	High Load Type	

With Fall Prevention **(ø25 to ø63)**

Fall prevention function equipped on Flat Cylinder FCD Series



Flat Cylinder with Free Position Drop Prevention

UFCD

Series	Also known as...	Tube Bore (ø)
UFCD-KL	Single Rod Type/ With Cushion	25 to 63

With Fall Prevention **(ø40 to ø100)**

Fall prevention possible at any position



Medium Bore Size Cylinder with Free Position Fall Prevention

USC

Series	Also known as...	Tube Bore (ø)
USC	Single Rod Type	40 to 100
USC-G1	With Coil Scraper	

Lock Unit >>> Pneumatic Cylinder④ Catalog No. RJ-005AA

Light. Slim lock unit

Fixing, "Improved safety", "Drop prevention" possible



Lock Unit

UB

Series	Applicable Shaft Diameter
UB	8, 16

Brake Unit

Only the brake part of the Brake Cylinder is unitized



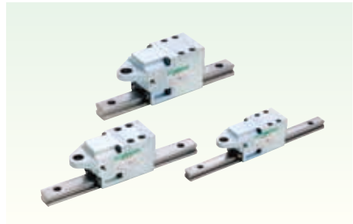
Brake Unit

JSB3

Series	Rod Diameter
JSB3	16, 20, 25, 30, 35, 40, 45

Brake for LM Guide

Reliable brake mounted on LM guide



Linear Guide Lock

LMB

Series
LMB

Lock Unit

Compact and high holding for linear guide



Linear Guide Lock

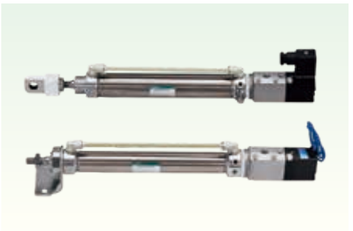
LML

Series
LML

With Valve >>> Pneumatic Cylinder④ Catalogs No. RJ-005AA

With Valve/Medium Bore Cylinder **(ø20 to ø40)**

High-performance solenoid valve equipped on CMK2 series



Compact cylinder with valve

CKV2

Series	Also known as...	Tube Bore (ø)
CKV2	Single Rod Type	20, 25, 32, 40
CKV2-M	Non-Rotating Type	

With Valve **(ø50, 75, 100)**

Boasts long-standing reliability



Cell Cylinder

CAV2/COV$^{P}_{N}$2

Series	Also known as...	Tube Bore (ø)
CAV2	Double Solenoid/ Lubricated Type	50, 75, 100
COVP2	Single Solenoid/Energize to Extend Type/Lubricated Type	
COVN2	Single Solenoid/Energize to Retract Type/Lubricated Type	
CAV2-N	Double Solenoid/ Non-Lube Type	
COVP2-N	Single Solenoid/Energize to Extend Type/Non-Lube Type	
COVN2-N	Single Solenoid/Energize to Retract Type/Non-Lube Type	

Other with valve

In addition, the following "Cylinder with Valve" lineup is available.

Product Name	Series	Tube Bore (ø)	Catalog No.
Pencil Shaped Cylinder	SCPS3-V SCPD3-V	10, 16	RJ-002AA
Medium Bore Size Cylinder	SCA2-V	40, 50, 63, 80, 100	RJ-002AA
Guided Cylinder	ST S/L-M/B V	20 to 63	RJ-005AA
Brake Cylinder	ULK-V	20, 25, 32, 40	RJ-005AA
	JSK2-V	20, 25, 32, 40	RJ-005AA
	JSM2-V	20, 25, 32, 40	RJ-005AA
	JSG-V	40, 50, 63, 80, 100	RJ-005AA
	JSC3-V	40, 50, 63, 80, 100	RJ-005AA
Selex Rotary	RV3S V/W RV3D V/W	0.98 to 66.6 (Torque size)	RJ-005AA

Search by Product System List

Products can be selected by series appearance and product overview.

Clamp >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

Clamp Cylinder **(ø40 to ø80)**

Dedicated clamp cylinder



Clamp Cylinder

CAC4

Series	Also known as...	Tube Bore (ø)
CAC4	Single Rod Type	40, 50, 63, 80
CAC4-G4	Sputter adhesion prevention type	40, 50, 63, 80

Clamp Cylinder with Fall Prevention **(ø50, ø63)**

Drop prevention function equipped on clamp cylinder



Clamp Cylinder with Fall Prevention

UCAC2

Series	Also known as...	Tube Bore (ø)
UCAC2	Single Rod Type	50, 63

Clamp Cylinder **(ø32, ø40)**

Dedicated for clamping, contributes to weight reduction of welding jigs



Lightweight Clamp Cylinder

CAC-N

Series	Also known as...	Tube Bore (ø)
CAC-N	Single Rod Type	32, 40

Clamp Cylinder with Fall Prevention **(ø32, ø40)**

Equipped with free position fall prevention function



Lightweight Clamp Cylinder

UCAC-N

Series	Also known as...	Tube Bore (ø)
UCAC-N	With Fall Prevention	32, 40

Rotary Clamp **(ø12 to ø63)**

Simple design for compact clamping



Rotary Clamp Cylinder

RCS2

Series	Also known as...	Tube Bore (ø)
RCS2	Single Rod Type	12 to 63
RCS2-T2	Packing Material: Fluoro Rubber	
RCS2-G4	Sputter adhesion prevention type	32 to 63

Rotary Clamp **(ø16 to ø63)**

Ideal for clamping in limited spaces



Rotary Clamp Cylinder

RCC2

Series	Also known as...	Tube Bore (ø)
RCC2	Single Rod Type	16 to 63
RCC2-G4	Sputter adhesion prevention type	20 to 63

Pin Clamp Cylinder

Workpiece positioning and clamping possible with one unit



Pin Clamp Cylinder

PCC

Series	Also known as...	Tube Bore (ø)
PCC	Single Rod Type	50
PCC-Q	Drop prevention type	

Special >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

Space-Saving/Compact With Vacuum Pad **(ø6, ø10)**

Suction pad equipped on rod end



Compact Cylinder with Vacuum Pad

MVC

Series	Also known as...	Tube Bore (ø)
MVC	Single Rod Type	6, 10

Stopper Cylinder **(ø20 to ø50)**

Space-saving type with excellent lateral load resistance



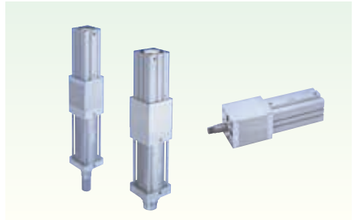
Stopper Cylinder

STK

Series	Also known as...	Tube Bore (ø)
STK	Rod End/Shape: Round Bar Type	20, 32, 40, 50
STK-Y	Single acting, Retracting type, Round bar rod end shape	
STK-Y1	Spring Contained Type/Rod End Shape: Round Bar Type	
STK-M	Rod End Shape: Chamfered Type	
STK-MY	Single Acting/Retracting Type/Rod End Shape: Chamfered Type	
STK-MY1	Spring Contained Type/ Rod End Shape: Chamfered Type	
STK-JY	Single Acting/Retracting Type/Rod End Shape: Roller Type	
STK-JY1	Spring loaded type, Roller rod end shape	

Mechanical Power Cylinder

Achieves high thrust comparable to hydraulic cylinders with only pneumatic source



Mechanical Power Cylinder

MCP

Series	Also known as...	Tube Bore (ø)
MCP-W	Fast Forward + Intensification	For 2t/For 5t
MCP-S	Intensifier Only	

Guideless Cylinder **(ø40 to ø100)**

Non-rotating without guide, excellent lateral load resistance



Guideless Cylinder

GLC

Series	Also known as...	Tube Bore (ø)
GLC	Single Rod Type	40 to 100

Balancer Unit **(ø50 to ø100)**

Lightly supports heavy objects with only air source



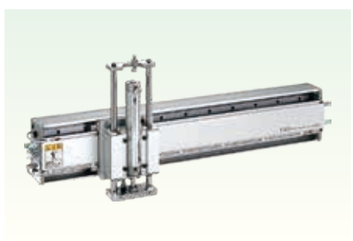
Balancer Unit

BBS

Series	Also known as...	Tube Bore (ø)
BBS-A	Automatic Pressure Adjustment Type	50 to 100
BBS-O	Fixed Pressure Adjustment Type	

Unit Components XZ-Axis Compound Unit

Selectable X-axis (payload), selectable Z-axis.



New Handling System

NHS

Series	Also known as...
NSR	X-axis Module
NHS-H	Z-axis Module (HRL)
NHS-S	Z-axis Module (STL-B)

Search by Product System List

Products can be selected by series appearance and product overview.

Special >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

Guided Single Axis Unit

Thin and high rigidity



Hybrid Robot

HRL

Series	Also known as...
HRL-1	Guided Single Axis Unit

With Length Measurement Function/Cylinder/Gripper

Length measurement function equipped on compact cylinder/gripper



Cylinder/Gripper with Linear Norm Sensor

LN

Series	Also known as...	Tube Bore (ø)
SSD-LN SSD-O-LN	Cylinder with Sensor Super Compact Type	12 to 50
BHA-LN	Cross Roller Parallel Gripper with Sensor	12, 16, 20, 25
BHG-LN	Cross Roller Parallel Gripper with Rubber Cover and Sensor	12, 16, 20, 25
BHE-LN	Centering Gripper with Sensor	12, 16, 20, 25

High Speed Type >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

High Speed Type/High Speed Cylinder **(ø20 to ø63)**

High-speed operation at 2000 mm/s. High cushion capacity



High Energy Absorption Cylinder

HCM

Series	Also known as...	Tube Bore (ø)
HCM	Single Rod Type	20 to 63

High Speed Type/High Speed Cylinder **(ø20 to ø100)**

High-speed operation at 3000 mm/s. High cushion capacity



High Speed Cylinder

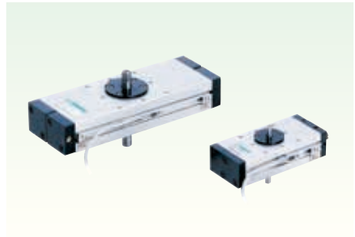
HCA

Series	Also known as...	Tube Bore (ø)
HCA	Single Rod	20, 25, 32, 40, 50, 63, 80, 100

Swinging/Rotating Type >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

Swinging/Rotating Type 0.7 to 5.6 N·m

Rack & pinion type, compact swinging type



Selex Rotary

RRC

Series	Also known as...	Torque Size
RRC	Rack & Pinion Type	0.7 to 5.6

*Torque size (N·m, at 0.5 mPa)

Swinging/Rotating Type 0.5 to 8.0 N·m

Table type actuator. High precision type also available

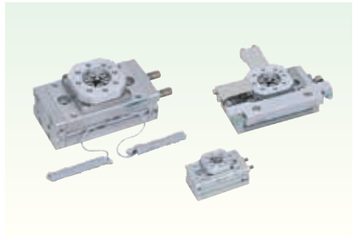


Table Type Rotary Actuator

GRC

Series	Also known as...	Torque Size
GRC	Basic type	0.5 to 8.1
GRC-K	High-Precision Type	1.0 to 8.1
GRC-F	Ultra Low Speed Type	0.5 to 8.1
GRC-KF	High-Precision Type/Low Speed Type	1.0 to 8.1

*Torque size (N·m, at 0.5 mPa)

Swinging/Rotating Type 0.12 to 0.66 N·m

Vane type. Abundant torque sizes.



Selex Rotary Vane Type

RV3□

Series	Also known as...	Torque Size
Compact		
RV3S	Single Vane Type	0.12 to 3.19
RV3D	Double Vane Type	0.28 to 7.70
RV3S V/W	Single Vane Type/With Valve	0.98 to 3.19
RV3D V/W	Double Vane Type/With Valve	2.11 to 7.70
RV3SA	Angle Adjustable Single Vane Type	0.31 to 3.19
RV3DA	Angle Adjustable Double Vane Type	0.71 to 7.70
Large		
RV3S (Large)	Single Vane Type	4.7 to 102
RV3D (Large)	Double Vane Type	10.1 to 206
RV3S V/W	Single Vane Type with Valve	4.7 to 27.9
RV3D V/W	Double Vane Type with Valve	10.1 to 66.6
RV3SH	Single Vane Type Low Hydraulic Pressure Type	4.7 to 102
RV3DH	Double Vane Type Low Hydraulic Pressure Type	10.1 to 206
RVC	Shock Absorber	

*Torque size (N·m, at 0.5 mPa)

Related Components >>> Pneumatic Cylinder ④ Catalog No. RJ-005AA

Shock Absorber **(Absorption Capacity 1 to 720 J)**

3 models available to suit application



Shock Absorber

SKL, NCK, SCK, FCK

Series	Also known as...	Absorption Energy
Fixed Type		
SKL	–	0.2 to 3.6
NCK	–	1 to 200
Adjustable Type		
SCK	–	0.049 to 588
FCK-L	Low Speed Type	1.5 to 79.3
FCK-M	Medium Speed Type	1.8 to 720
FCK-H	High Speed Type	

Absorption Energy: J

Free Joint **(Size M3 to M45)**

For preventing misalignment when mounting cylinder. 3 types available



Free Joint

FJ

Series
FJ

Simple Type Floating Connector

For preventing misalignment when mounting cylinder. Simple type.



Simple Flow Controller

FK

Series
FK

Search by Product System List

Products can be selected by series appearance and product overview.

Gripper >>> Pneumatic Cylinder ⑤ Catalog No. RJ-006AA

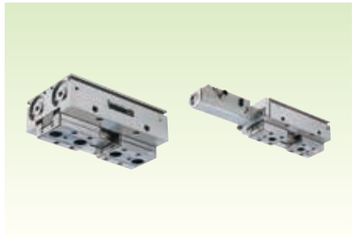
Wide variety available including thin, lightweight, and wide types



Parallel Gripper

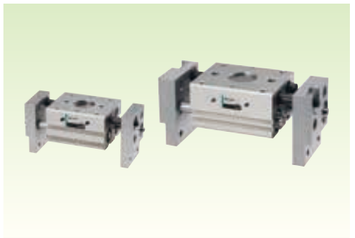
Series	Also known as...	Tube Bore (ø)
LSH-HP1 LSHL-HP1	Linear Slide Gripper (HP Series)	6 to 32
LSHM-HP2	Linear Slide Gripper with Length Measurement Function (HP Series)	10 to 25
LSH	Linear Slide Gripper (Standard Type)	10 to 25
FH100	Feather Gripper (Mini Parallel Gripper)	10 to 25
BSA2	Ultra Compact Cross Roller Parallel Gripper	6
BHA	Compact Cross Roller Parallel Gripper	12 to 25
BHG	Compact Cross Roller Parallel Gripper with Rubber Cover	12 to 25

Series	Also known as...	Tube Bore (ø)
BHE	Centering Gripper	12 to 32
LHA	Linear Guide Gripper	6 to 32
LHAG	Linear Guide Gripper with Rubber Cover	12 to 32
HAP-1C	Parallel Gripper	15
HAP	Parallel Gripper	20 to 40
HKP	Cross Roller Parallel Gripper	32 to 80
HCP	Horizontal Parallel Gripper	12 to 32
HGP	Long Stroke Parallel Gripper	25



Thin Parallel Gripper

Series	Also known as...	Tube Bore (ø)
LST-HP1	Thin Long Stroke Gripper	8x2 to 20x2
LSTM-HP2	Thin Long Stroke Gripper with Length Measurement Function	12x2 to 20x2
HLF2	Long Stroke Thin Gripper	8x2 to 20x2
HLA/HLB	Thin Parallel Gripper	12 to 20
HLAG/ HLBG	Thin Parallel Gripper with Rubber Cover	12 to 20
HLC	Thin Long Stroke Parallel Gripper	8x2 to 30x2
HLD	Ultra Thin Parallel Gripper	8x4 to 20x4



Wide Parallel Gripper

Series	Also known as...	Tube Bore (ø)
HMC-HP1	Wide Parallel Gripper	10x2 to 40x2
HMF	Compact Wide Parallel Gripper	12x2 to 40x2
HMF-G	Cutting Oil Resistant Specification Compact Wide Parallel Gripper	16x2 to 25x2
HMFB	Large Wide Parallel Gripper with Linear Guide	25x2 to 40x2
HFP	Wide Parallel Gripper	16x2 to 40x2



Pivot Gripper

Series	Also known as...	Tube Bore (ø)
FH500	Feather Gripper (Mini Pivot Gripper)	10 to 20
HBL	Pivot Gripper	15 to 40
HJL	Toggle Gripper	32 to 63
HMD	180-degree Opening/Closing Thin Wide Angle Gripper	12 to 25
HDL	180-degree Opening/ Closing Wide Angle Gripper	25 to 40
HJD	180-degree Opening/Closing High Gripping Force Wide Angle Gripper	32 to 63



Mechanical Gripper

Series	Also known as...	Cylinder Bore (ø)
BHA-FC	Mechanical Gripper	12 to 32

Chuck >>> Pneumatic Cylinder ⑤ Catalog No. RJ-006AA

Compact and powerful. Wide variety available



3-Jaw Chuck

Series	Also known as...	Tube Bore (ø)
CKW-HP1	3-Jaw Chuck	16 to 50
CKWL-HP1	3-Jaw Long Stroke Chuck	16 to 40
CKL2	Powerful Chuck	16 to 100
CKLG2	Powerful Chuck with Rubber Cover	20 to 100
CKL2-HC	Drop Prevention Type Powerful Chuck	32 to 80
CKH2	High Gripping Force Powerful Chuck	50 to 100
CKLB2	2-Direction Powerful Chuck (Parallel Gripper	20 to 100
CKG	3-Jaw Bearing Chuck	16 to 50
CK	3-Jaw Long Stroke Chuck	25 to 44
CKA	3-Direction Thin Chuck	16 to 100
CKS	Thin Chuck	8x3 to 32x3
CKS-F	Thin Chuck (Hollow Type)	16x3 to 50x3
CKF	Hollow Chuck	30 to 80
CKJ	Ultra Long Stroke Chuck	12x6 to 50x6



Mechanical Chuck

Series	Also known as...	Cylinder Bore (ø)
CKL2-FC	Mechanical Chuck	20 to 40

Robot Peripheral Components

>>> Pneumatic Cylinder ⑤ Catalog No. RJ-006AA



Auto Gripper Changer

Series	Also known as...
CHC	Auto Gripper Changer

Gripper for Collaborative Robot

>>> Pneumatic Cylinder ⑤ Catalog No. RJ-006AA

Compact and lightweight with high gripping force due to air drive



Gripper for Collaborative Robot

Series	Also known as...	Tube Bore (ø)
RLSH/RHLF/ RCKL-UR	UNIVERSAL ROBOTS Official Certified Gripper	RLSH: ø20 RHLF: ø16x2 RCKL: ø40
RLSH/RHLF/ RCKL-TM	OMRON ROBOT Official Certified Gripper	
RLSH/RHLF/ RCKL-TM	TECHMAN ROBOT Official Certified Gripper	
RLSH/RHLF/ RCKL-FN	FANUC Robot Gripper compatible with CRX Series	
RLSH/RHLF/ RCKL-YS	YASKAWA MOTOMAN Robot Gripper compatible with HC10DTP Series	
RLSH/RHLF/ RCKL-JK	JAKA Robot Gripper compatible with Zu Series	
RLSH/RHLF/ RCKL-KW	Kawasaki Robot duAro Series K-AddOn Registered Gripper	

CKD How to use CAD data

Free download!

This is what makes CKD's CAD great!

Comprehensive list of CKD's leading products



Japanese, English, Chinese (Simplified and Traditional), and Korean are supported.

Simultaneous with new product launch

NEW Model No. AX1R

ABSODEX



Supports various data formats



More than 25 types of 2D and more than 35 types of 3D

Supports PDF and JPEG formats!

✳To use 3D CAD, you must register as a CKD plus member.

CKD plus How to register as a member

STEP 1

From the CKD components product top page, click "New member registration"



STEP 2.

Enter your name, company name, contact information, and email address

Easy registration in 2 STEPS

Registration complete!



How to download CAD

STEP 1

Click on "3D CAD" from the product detail page



STEP 2.

Select model No.

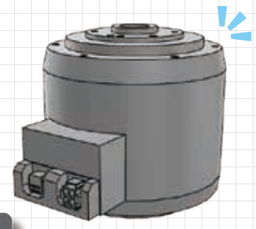
STEP 3

❶ Specify CAD format

❷ Generate CAD data

Download CAD

Download complete!



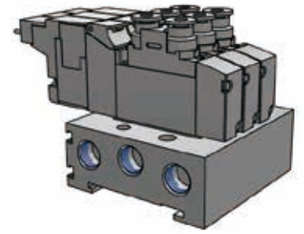
Pneumatic valve manifold specifications and CAD data are easily available on the Web.

Specifications are available



Manifold specifications for pneumatic valves can be prepared and shipped assembled to the customer.

Get CAD data



2D and 3D CAD data available for pneumatic valve manifold assemblies

Specifications and download method of CAD data

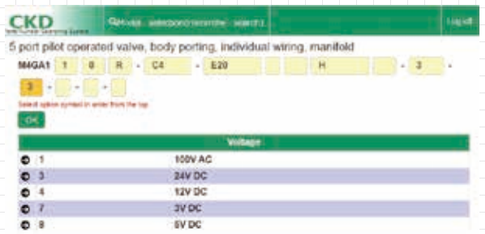
STEP 1

CKD components product TOP page > Product details page >Click "Manifold specifications sheet"



STEP 2.

Select model No.



STEP 3

Create specifications sheet



STEP 4

●For specifications output, Specification output Click

●If downloading CAD data 2D/3D CAD Click

Download complete!



Significantly reduces work time

For details, please contact our nearest sales office. © 2025. CKD Corporation All Rights Reserved.

Website Guide

Various information is provided on our website.
Please make use of it.

Catalogs	CAD	Instruction Manuals
Maintenance Parts	Software	Model Selection
FAQ	Technical Information	Standard Compliant Product Information
Column	Event Information	Seminars

You can find the information you need here.

You can search for desired products.

You can find suitable products by application.

You can check the latest news.





Each product page provides various information.



Various information is published by product axis and application.

Model Selection System Guide

About Using the Model Selection System

We provide a system that supports the selection of the following items. Please use it when selecting models and designing.

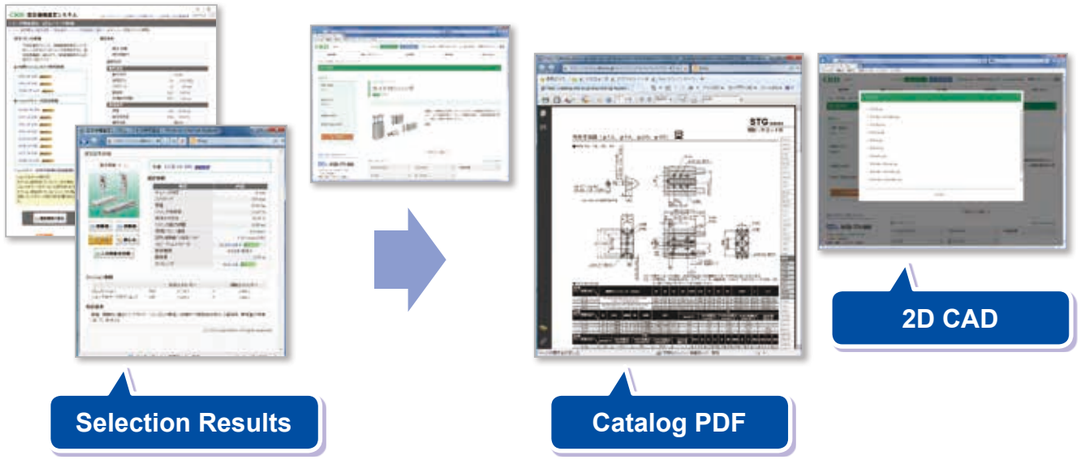
Published on our website

This system is for selecting products according to your application and operating conditions.



*Downloadable software may not be able to be downloaded due to your company's security policy. In that case, please contact us.

Link from selection results to catalog PDFs and CAD data!



No registration required, available anytime!

We offer various services for CKD products, including catalogs, PDFs, CAD data, and model selection. Please take a look.

https://www.ckd.co.jp/en/

Technical Data

Listed Page

Cylinder Bore Selection Nomogram (1, 2) — Intro 23

Required Flow Rate during Cylinder Operation (3, 4) — Intro 25

Allowable Absorption Energy Value (5, 6) — Intro 27

Relationship values between dimensions by mounting type and maximum stroke (L) (7, 8) — Intro 29

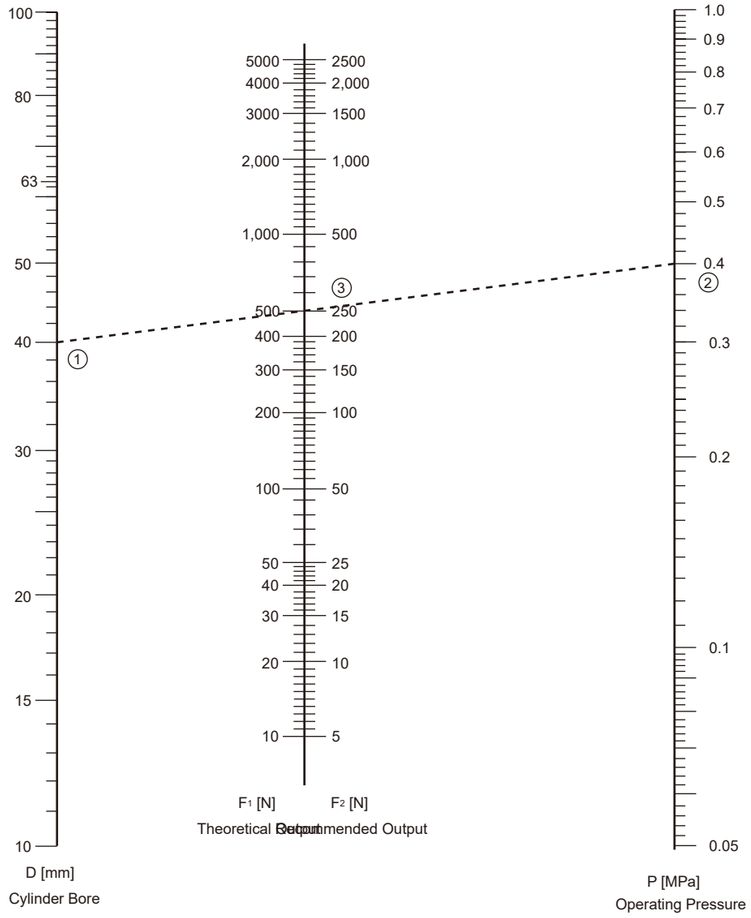
How to Determine Cylinder Mounting Type (9) — Intro 31

Air Compressor, Air Tank Selection (10) — Intro 32

Dimensional Tolerances for Commonly Used Fits (11) — Intro 33

Cylinder Bore Selection Nomogram

● For bore ø10 mm to ø100 mm, rod push direction



This nomogram was created using the following formula.

$$F_1 = \frac{\pi}{4} \times D^2 \cdot P$$

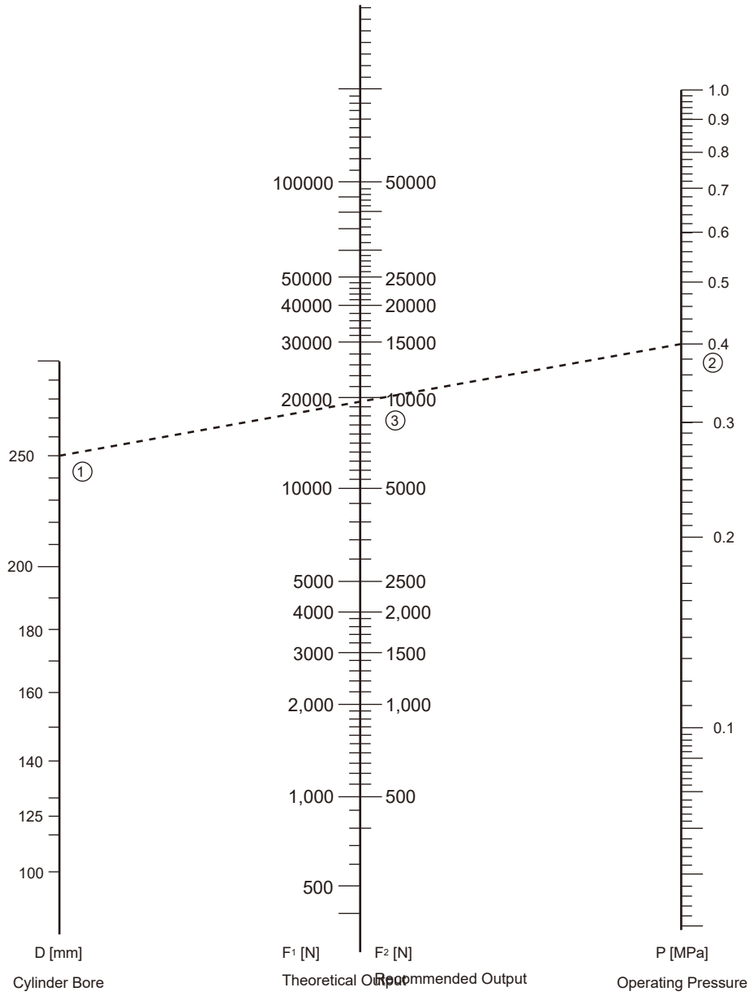
However, F_1: Theoretical output [N]
F_2: Recommended output (at 50% efficiency) [N]
D: Cylinder bore [mm]
P: Operating pressure [MPa]

(Example) What is the theoretical output when operating a ø40 bore cylinder at an air pressure of 0.4 MPa?
(Answer) Connect D and P to find the point on F, and obtain a theoretical output F ≈ 500 N.

Cylinder Bore Selection Nomogram

Cylinder Bore Selection Nomogram

● For bore ø100 mm to ø250 mm, rod push direction



This nomogram was created using the following formula.

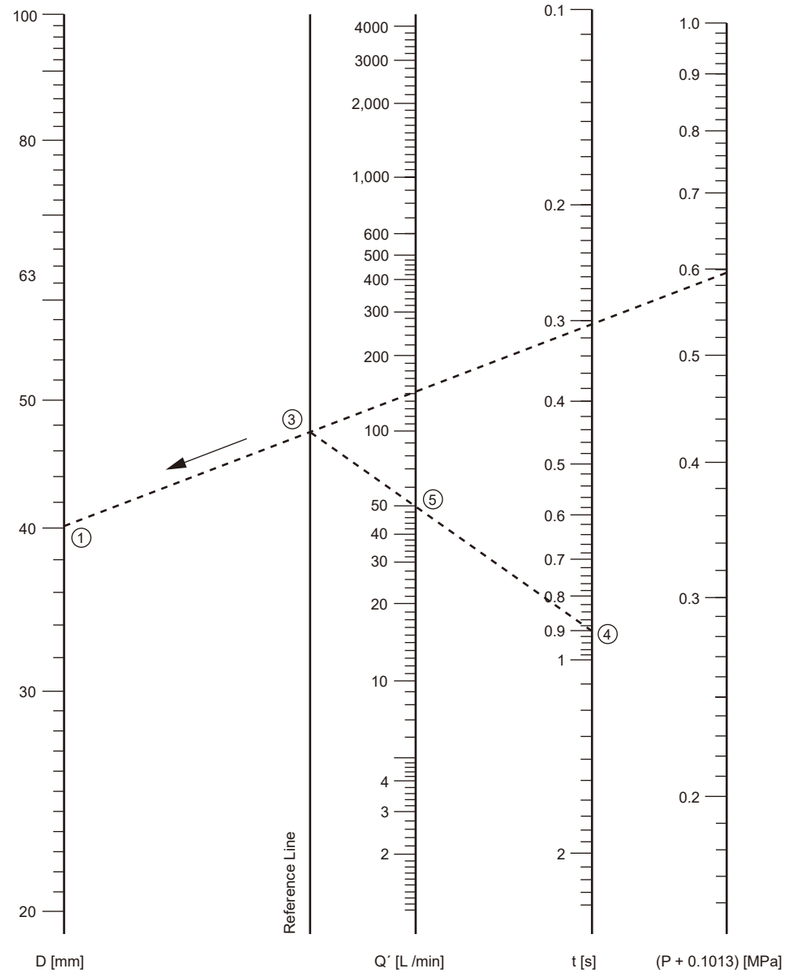
$$F_1 = \frac{\pi}{4} \times D^2 \cdot P$$

However, F_1: Theoretical output [N]
F2: Recommended output (at 50% efficiency) [N]
D: Cylinder bore [mm]
P: Operating pressure [MPa]

(Example) What is the theoretical output when operating a ø250 bore cylinder at an air pressure of 0.4 MPa?
(Answer) Connect D and P to find the point on F, and obtain a theoretical output F ≈ 19000 N.

Required Flow Rate during Cylinder Operation (Bore 100 mm or less)

●Q: Required flow rate per 100 mm stroke L /min



1. Calculation formula for required flow rate during cylinder operation

The required flow rate is the instantaneous flow rate when the cylinder is operating.
This is different from the cylinder's air consumption, so please do not confuse them.

$$Q = \frac{\pi}{4} \cdot D^2 \frac{L}{t} \cdot \frac{P + 0.1013}{0.1013} \times 10^{-6} \times 60$$

Q: Flow rate [L /min] (ANR)
D: Cylinder bore [mm]
L: Stroke [mm]
t: Stroke travel time [s]
P: Operating Pressure (MPa)

(Example 1, figure above) What is the required flow rate when operating a ø40 bore cylinder at an air pressure of 0.5 MPa with a stroke of 100 mm per 0.9 s?

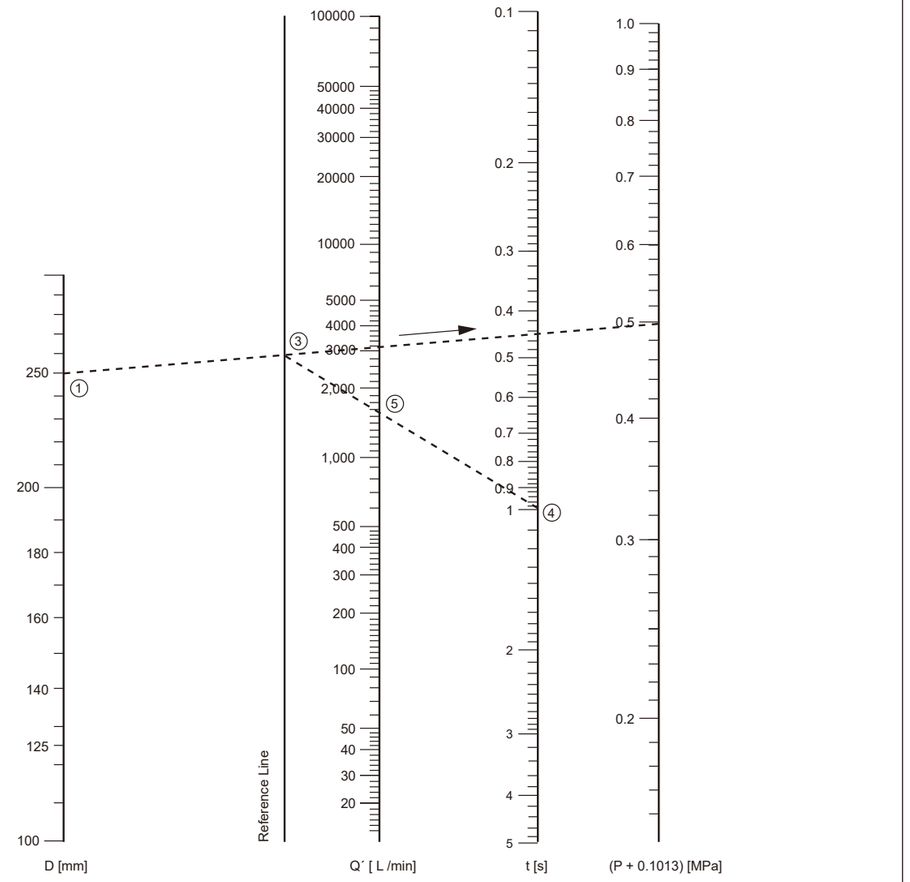
(Answer) Find the point on the relationship line from D and (P + 0.1013), and obtain Q' = 50 (L /min) from the point on the relationship line and t.

(Example 2, figure right) What is the required air volume when operating a ø250 bore cylinder at an air pressure of 0.4 MPa with a stroke of 100 mm per 1 s?

(Answer) Find the point on the relationship line from D and (P + 0.1013), and obtain Q' = 1450 (L /min) from the point on the relationship line and t.

Required Flow Rate during Cylinder Operation (Bore 100 to 250 mm)

●Q: Required flow rate per 100 mm stroke L /min



2. Cylinder air consumption calculation formula (per hour)

Air consumption per hour is the air consumption due to cylinder operation within a certain period, and it is the air volume consumed inside the cylinder and in the piping between the cylinder and the switching valve. Regardless of cylinder speed, it is different from the required air flow rate during operation.

$Q_T = (Q_1 + Q_2 + (2 \times Q_3)) \times n$ [For double acting cylinder]

Q_T: Air consumption per minute [L /min] (ANR)
n: Cylinder operations per minute [cycles/min]
Q_1: Air consumption during push stroke [L] (ANR)
Q_2: Air consumption during pull stroke [L] (ANR)
Q_3: Piping volume from directional control valve to each port of the cylinder [L] (ANR)

$$Q_1 = \frac{\pi}{4} \cdot D^2 \times L \times 10^{-6} \times \left(\frac{P + 0.1013}{0.1013} \right)$$

$$Q_2 = \frac{\pi}{4} \cdot (D^2 - d^2) \times L \times 10^{-6} \times \left(\frac{P + 0.1013}{0.1013} \right)$$

$$Q_3 = \frac{\pi}{4} \cdot d_3^2 \times L_3 \times 10^{-6} \times \left(\frac{P}{0.1013} \right)$$

D: Cylinder bore [mm]
d: Piston rod outer diameter [mm]
L: Cylinder stroke [mm]
L_3 : Piping length from directional control valve to cylinder port [mm]
d_3 : Piping inner diameter from directional control valve to cylinder port [mm]
P: Operating pressure [MPa] (gauge pressure)
(Note: 1L = 1 dm^3 .)

(Example) Cylinder bore 100 mm, Rod diameter 30 mm, Stroke 800 mm, Operating pressure 0.5 MPa, 5 operations per minute
Piping tube inner diameter 7 mm, Piping tube length 2000 mm

$$Q_1 = \frac{\pi}{4} \times 100^2 \times 800 \times 10^{-6} \times \left(\frac{0.5 + 0.1013}{0.1013} \right) = 37.3$$

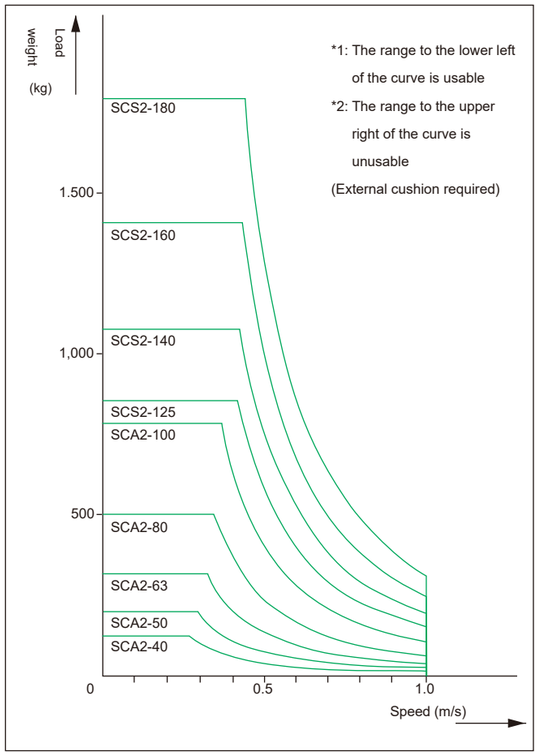
$$Q_2 = \frac{\pi}{4} \times (100^2 - 30^2) \times 800 \times 10^{-6} \times \left(\frac{0.5 + 0.1013}{0.1013} \right) = 33.9$$

$$Q_3 = \frac{\pi}{4} \times 7^2 \times 2000 \times 10^{-6} \times \left(\frac{0.5}{0.1013} \right) = 0.4$$

$Q_T = (37.3 + 33.9 + (2 \times 0.4)) \times 5 = 360$ [L /min] (ANR)

Allowable absorption energy value: With Cushion

Allowable Absorption Energy Value Graph with Cushion



(Note)
About how to calculate kinetic energy
The average speed of the cylinder is calculated by $ua = \frac{L}{T}$.

ua: Average speed (m/s)
L: Cylinder stroke (m)
t: Operating Time (s)

In contrast, the cylinder speed just before entering the cushion can be found with the following simple formula.

$um = \frac{L}{T} \times (1 + 1.5 \times w)$
um: Speed just before entering cushion (m/s)
w: Decimal representation of cylinder load factor (0.3 for 30%, 0.5 for 50%)

When calculating kinetic energy or using a graph, use this value of um as the speed.

● Cushion

The purpose of the cushion is to absorb the kinetic energy held by the piston by utilizing the compressibility of air, and to prevent the piston and cover from impacting at the stroke end. Therefore, the cushion is not intended to operate the piston at low speed near the stroke end. The table below shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds this value or if you want to avoid bouncing due to air compressibility, please consider a separate shock absorber.

Kinetic energy (J) $= \frac{1}{2} \times$ Load weight (kg) × [Speed (m/s)]²

Absorption Energy Value with Cushion

1. SCA2, JSC3

Tube I.D. (mm)	Effective Cushion Length (mm)	Allowable Absorption Energy (J)
ø40	14.6	4.29
ø50	16.6	8.37
ø63	16.6	15.8
ø80	20.6	27.9
ø100	23.6	49.8

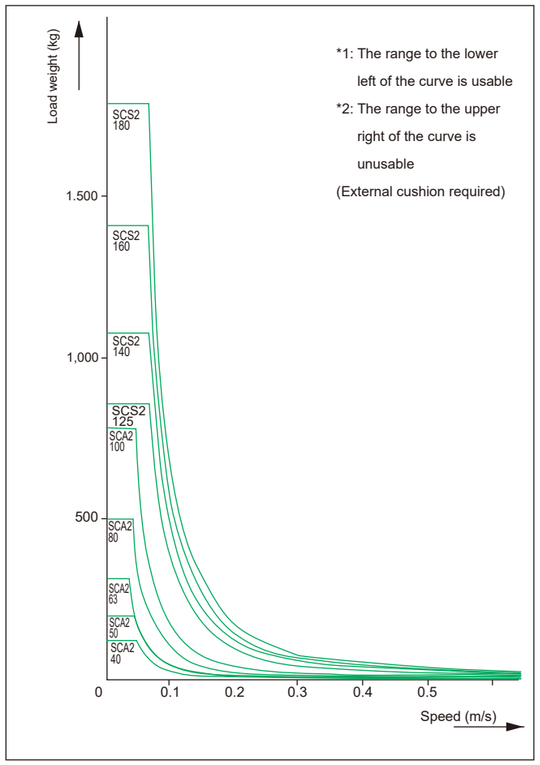
2. SCG, SCM, JSG

Tube I.D. (mm)	Effective Cushion Length (mm)	Allowable Absorption Energy (J)	Remarks
ø20	8.1	0.8	SCM
ø25	8.1	1.2	Only
ø32	8.6	2.5	
ø40	8.6	3.7	
ø50	13.4	8.0	
ø63	13.4	14.4	
ø80	15.4	25.4	
ø100	15.4	45.6	

3. SCS2, JSC4

Bore Size (mm)	Effective Cushion Length (mm)	Allowable Absorption Energy (J)
ø125	21.6	63.5
ø140	21.6	91.5
ø160	21.6	116
ø180	21.6	152
ø200	26.6	233
ø250	26.6	362

Allowable absorption energy value: Without Cushion



1. Allowable absorption energy without cushion
The allowable absorption energy for each model is as shown in the table below.

Allowable absorption energy without cushion

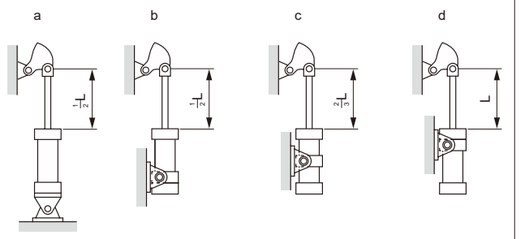
Unit: J

Code / Bore Size (mm)	SCM *1	SCA2	SCS2	CAV2/ COV2
ø40	–	0.067	–	–
ø50	0.057	0.079	–	0.072
ø63	0.057	0.079	–	–
ø75	–	–	–	0.154
ø80	0.112	0.201	–	–
ø100	0.153	0.301	–	0.154
ø125	–	–	0.371	–
ø140	–	–	0.386	–
ø160	–	–	0.386	–
ø180	–	–	0.958	–
ø200	–	–	1.08	–
ø250	–	–	2.32	–

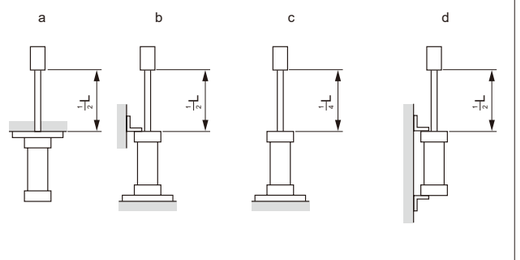
*1: This is the absorption energy without cushion for cushion symbols "R" and "H".

Relationship between Dimensions by Mounting Type and Max. Stroke (L)

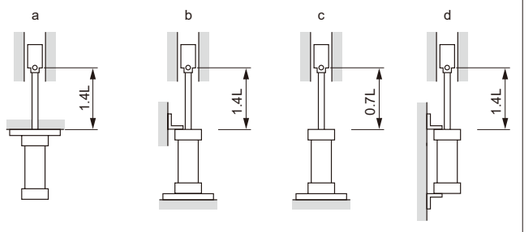
1 For double end pin joint



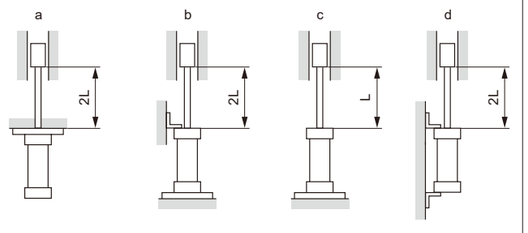
2 Rod end free



3 Rod end guided (pin joint)



4 Cylinder fixed, rod end guided



Max. Stroke

Pencil Shaped Cylinder SCP□3 Series			
D (mm) / F0 (N)	ø6	ø10	ø16
5	570		
10	405	720	
30	230	415	650
50		320	500
100			355

CMA2/CMK2/JSM2 Series			
D (mm) / F0 (N)	ø20	ø25, ø30, ø32	ø40
50	2020		
100	1440	2040	
200	1,000	1440	2,000
400		1,000	1500
600			1160
800			980

SCG/SCA2/JSG/JSC3					
D (mm) / F0 (N)	ø40	ø50	ø63	ø80	ø100
200	2600	4100			
400	1810	2900	2900		
600	1500	2400	2400	3600	
800	1280	2,000	2,000	3140	4500
1,000		1820	1820	2800	4000
1500			1480	2300	3300
2,000				1980	2840
2500				1760	2560
3000				1600	2300
3500					2140
4000					2,000
5000					1800

SCS2						
D (mm) / F0 (N)	ø125	ø140	ø160	ø180	ø200	ø250
1500	3700	3700				
2,000	3200	3200				
2500	2900	2900	4600			
3000	2600	2600	4100	5300		
3500	2400	2400	3800	5000	5900	
4000	2300	2300	3600	4600	5600	
5000	2,000	2,000	3200	4100	5000	7400
6000	1900	1900	2900	3800	4600	6800
7000	1700	1700	2700	3500	4200	6200
8000		1600	2500	3300	3900	5800
9000		1500	2400	3100	3700	5500
10000			2300	2900	3500	5200
15000				2400	2900	4200
20000					2500	3600
25000						3300
30000						3000

JSC4				
D (mm) / F0 (N)	ø125	ø140	ø160	ø180
1500	4600			
2,000	3900	3900		
2500	3500	3500	4600	
3000	3200	3200	4100	5300
3500	3000	3000	3800	5000
4000	2800	2800	3600	4600
5000	2500	2500	3200	4100
6000	2300	2300	2900	3800
7000	2100	2100	2700	3500
8000		2,000	2500	3300
9000		1880	2400	3100
10000			2300	2900
15000				2400

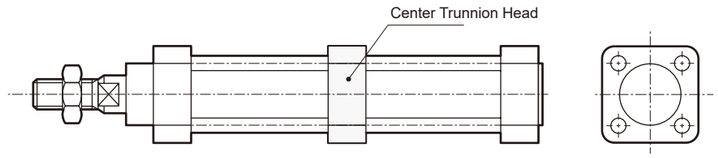
D: Cylinder bore [mm]
F0: Load [N]
L: Max. Stroke [mm]

Request
The values in the table are calculated values. If the stroke exceeds the maximum stroke stated in the specifications section for each model, please consult us.

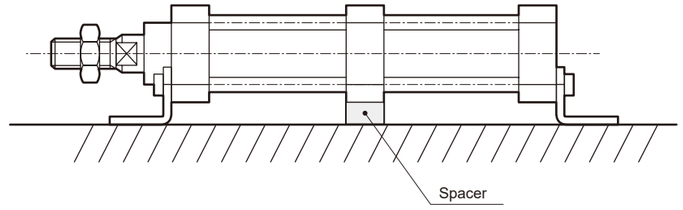
Precautions for Exceeding Max. Stroke

⚠ Caution: If exceeding the max. stroke described on the "Specifications" page for each model, note the following points.

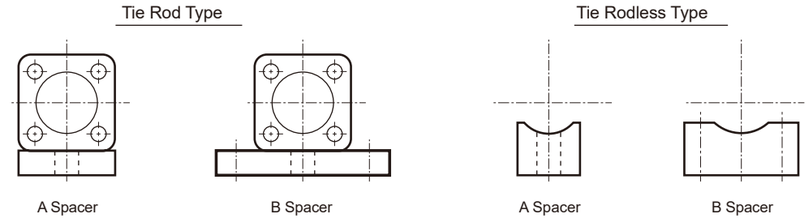
1. Minimum operating pressure
   Starting pressure increases due to deflection of the piston rod inside the cylinder.
2. Piston rod buckling
   It becomes difficult unless used in a state where the internal stopper that brings the piston into contact with the cylinder cover is effective. When using by hitting an external stopper, please refer to the technical data "Relationship between dimensions according to mounting type and maximum stroke (L) (Intro Page 29)".
3. Tie rod reinforcement
   A center trunnion head is inserted to prevent the tie rod from deflecting and touching the cylinder tube.



4. Prevention of cylinder tube deflection
   When mounted horizontally, tube deflection prevention is necessary.
   Consider deflection prevention using the center trunnion head inserted for tie rod reinforcement.



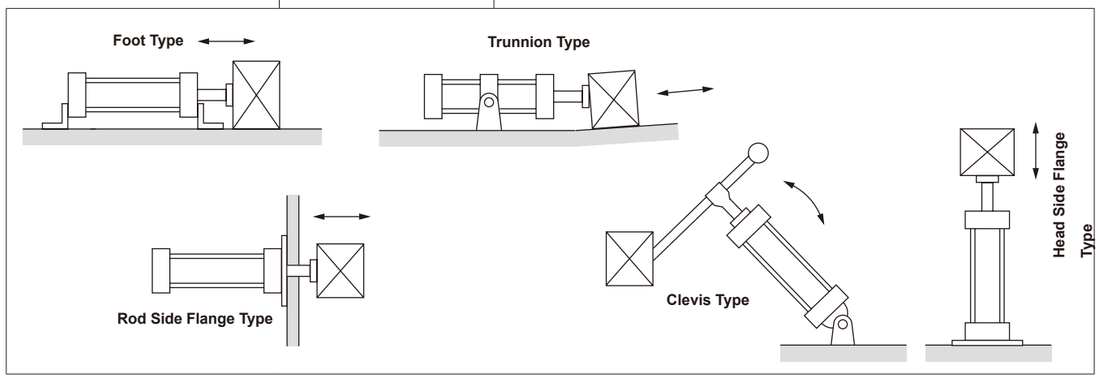
*The spacer in the diagram below is made to order.



How to Determine Cylinder Mounting Type

Since the piston of a cylinder moves in only one direction, select the cylinder mounting type according to the direction of load movement as shown below.

Direction of Load Movement	Mounting type	Precautions
During operation, the load moves linearly.	Foot Type Flange Type	Fix the cylinder body so that the direction of load movement and the direction of piston movement are parallel.
	Trunnion Type Clevis Type	Adopt the mounting type on the left if the stroke is long or if the direction of load movement and the direction of piston movement are not parallel and in the same direction. However, be careful not to apply lateral load to the piston rod or bushing.
During operation, the load swings within one plane.	Trunnion Type Clevis Type	Align the swinging direction of the clevis or trunnion supporting the cylinder with the swinging direction of the load. Also, align the swinging direction of the rod end fitting. When a lateral load acts on the bushing, the value of the lateral load should be within 1/20 of the cylinder output.
During operation, the load swings in all directions.	Trunnion Type Clevis Type	Use a knuckle for the connecting fitting between the rod and the load. When a lateral load acts on the bushing, the value of the lateral load should be within 1/20 of the cylinder output.



Bellows Max. Operating Temperature

Code	Bellows Material	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Nylon Tarpaulin	60°C	100°C
	Polyolefin Elastomer	100°C	200°C
K	Neoprene Sheet	100°C	200°C
L	Silicone Rubber Glass Cloth	250°C	400°C

Instantaneous maximum temperature is the temperature when sparks, chips, etc. instantaneously hit the bellows.

Air Compressor, Air Tank Selection

For compressors and tanks, it is necessary to select a model that accounts for 10 to 20% leakage loss in piping and switching valves in addition to the actual air consumption. Generally, the piston displacement described in compressor manufacturer catalogs is a theoretical value, so about 70% based on volumetric efficiency is the effective value. Therefore, select a compressor model with a piston displacement twice the air consumption.

Selection of Air Compressor for Intermittent Use (Operation)

For intermittent use, installing an air tank allows a small air compressor to perform a large amount of work. In other words, it is sufficient to install an air tank with a capacity that does not drop to the maximum operating pressure even if a pressure drop occurs due to high air consumption while cylinders, etc. are operating, and a compressor that can replenish compressed air by the time the cylinder performs its next operation.

Air Tank Capacity

$$Vt = \frac{Vs}{(Pt-Ps) \times 10.2}$$

Vt: Tank capacity (L)
Vs: Air consumption per cycle (L) (ANR)
Pt: Tank pressure (MPa)
Ps: Maximum cylinder operating pressure

Inspection of Type 2 pressure vessels

Based on the Ministry of Labour Ordinance, cylinders falling under the following categories must be inspected by the Japan Boiler Association.

① Cylinders with a rated pressure exceeding 0.2 MPa and an internal volume exceeding 0.04 m³
② Cylinders with a rated pressure exceeding 0.2 MPa, a cylinder tube inner diameter of 200 mm or more, and a body length (cylinder tube length) of 1000 mm or more

$$V = \frac{D^2 \times S \times 3.14}{4 \times 10^9}$$

V: Cylinder internal volume (m³)
D: Tube Inner Diameter (mm)
S: Shell length (cylinder tube length) (mm)

Japan Boiler Association Website Address
http://www.jbanet.or.jp/

[Technical Reference Data] Dimensional Tolerances for Commonly Used Fits

Excerpted from JIS B 0401:1998

Tolerances used for shafts

Classification of Basic Dimensions (mm)		Shaft Tolerance Class Unit: μm									
Over	Up to and including	d9	e8	e11	f7	f8	h6	h7	h8	h9	p6
-	3	-20 -45	-14 -28	-14 -74	-6 -16	-6 -20	0 -6	0 -10	0 -14	0 -25	+12 +6
3	6	-30 -60	-20 -38	-20 -95	-10 -22	-10 -28	0 -8	0 -12	0 -18	0 -30	+20 +12
6	10	-40 -76	-25 -47	-25 -115	-13 -28	-13 -35	0 -9	0 -15	0 -22	0 -36	+24 +15
10	14	-50 -93	-32 -59	-32 -142	-16 -34	-16 -43	0 -11	0 -18	0 -27	0 -43	+29 +18
14	18										
18	24	-65 -117	-40 -73	-40 -170	-20 -41	-20 -53	0 -13	0 -21	0 -33	0 -52	+35 +22
24	30										
30	40	-80 -142	-50 -89	-50 -210	-25 -50	-25 -64	0 -16	0 -25	0 -39	0 -62	+42 +26
40	50										
50	65	-100 -174	-60 -106	-60 -250	-30 -60	-30 -76	0 -19	0 -30	0 -46	0 -74	+51 +32
65	80										
80	100	-120 -207	-72 -126	-72 -292	-36 -71	-36 -90	0 -22	0 -35	0 -54	0 -87	+59 +37

Tolerances used for holes

Classification of Basic Dimensions (mm)		Shaft Tolerance Class Unit: μm					
Over	Up to and including	F7	H6	H7	H8	H9	H10
-	3	+16 +6	+6 0	+10 0	+14 0	+25 0	+40 0
3	6	+22 +10	+8 0	+12 0	+18 0	+30 0	+48 0
6	10	+28 +13	+9 0	+15 0	+22 0	+36 0	+58 0
10	14	+34 +16	+11 0	+18 0	+27 0	+43 0	+70 0
14	18						
18	24	+41 +20	+13 0	+21 0	+33 0	+52 0	+84 0
24	30						
30	40	+50 +25	+16 0	+25 0	+39 0	+62 0	+100 0
40	50						
50	65	+60 +30	+19 0	+30 0	+46 0	+74 0	+120 0
65	80						
80	100	+71 +36	+22 0	+35 0	+54 0	+87 0	+140 0

MEMO

Regarding Notation Method for Flow Characteristics

1. Display of Flow Characteristics

The flow rate display in the specifications section of the catalog is shown as follows.

Target Components	Display	Unit	Standard
Pneumatic Components	Display compliant with New JIS	C, b	ISO 6358: 1989 "Pneumatic fluid power — Components using compressible fluids — Methods for testing the flow-rate characteristics" JIS B 8390: 2000 (ISO 6358 Translation)
	Conventional Display	S	JIS B 8373:1993 'Pneumatic 2-port solenoid valves' JIS B 8374:1993 "Pneumatic 3-port solenoid valves" JIS B 8375:1993 "Pneumatic 4, 5-port solenoid valves" JIS B 8379:1995 "Pneumatic silencers"
		Cv	ANSI(NFPA)T3. 21. 3:1990

2. Explanation

The flow rate characteristics of solenoid valves were conventionally displayed using effective area S, but JIS was revised (JIS B 8390: 2000), and they are now displayed by a pair of sonic conductance C and critical pressure ratio b.

- Sonic Conductance C: Value obtained by dividing the weight flow rate passing through equipment in a choked flow state by the product of the upper limit absolute pressure and the density in the standard state. (sonic conductance) S ≈ 5.0 C (Sizing as per conventional methods is possible with C.)
- Critical Pressure Ratio b: Pressure ratio (downstream pressure / upstream pressure) at which flow becomes choked when smaller than this value (critical pressure ratio)
- Effective Cross-sectional Area S (mm²): The cross-sectional area value of an ideal orifice without friction or contraction, derived by calculation from the pressure change within an air tank when air is released in a choked flow state from equipment included to the air tank.

*Choked flow: Flow where upstream pressure is higher than downstream pressure and velocity reaches sonic speed at a certain point in the equipment. The weight flow rate of gas is proportional to the upstream pressure and does not depend on the downstream pressure. (Choked flow)

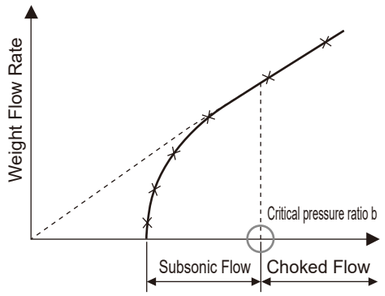


Fig. 1 Weight flow rate characteristics with respect to upstream pressure

Flow rate calculation formula

It is expressed as follows in practical units.

$\frac{P_2+0.1}{P_1+0.1} \leq b$, choked flow

$$Q=600\times C\,(P_1+0.1)\sqrt{\frac{293}{273+t}} \quad \text{..... (1)}$$

$\frac{P_2+0.1}{P_1+0.1} > b$, subsonic flow

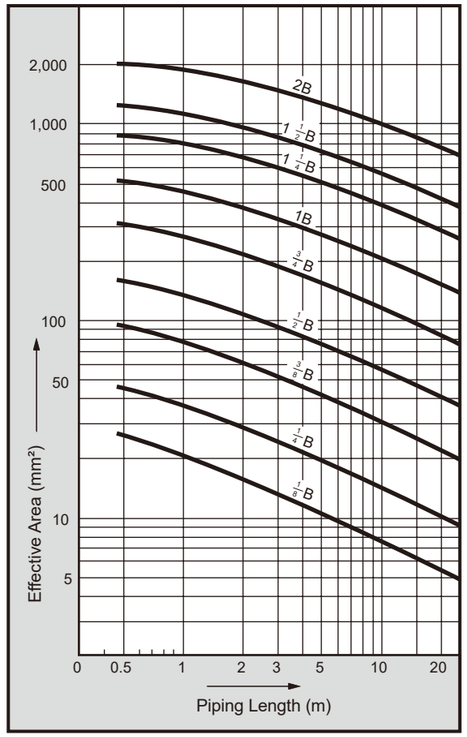
$$Q=600\times C\,(P_1+0.1)\sqrt{1-\left[\frac{\frac{P_2+0.1}{P_1+0.1}-b}{1-b}\right]^2}\sqrt{\frac{293}{273+t}} \quad \text{.....(2)}$$

Q: Air Flow Rate [dm³/min (ANR)]: The SI unit dm³ (cubic decimeter) may also be expressed as L (liter). 1dm³ = 1 L
C: Sonic conductance [dm³/(s·bar)]
b: Critical pressure ratio [−]
P_1: Upstream pressure [MPa]
P_2: Downstream pressure [MPa]
t: Temperature [°C]

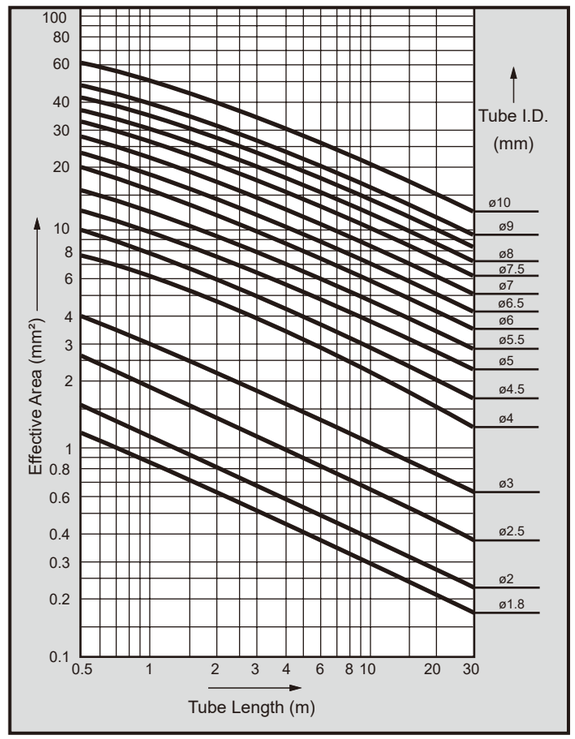
When calculating with the effective cross-sectional area S, substitute the value C obtained from C=S/5 into the above formula.
For subsonic flow, substitute b = 0.5 into equation (2).

Effective Area of Steel Pipe/Nylon Tube and Recommended Maximum Flow Rate Table for Gas Pipe

Effective Area of Steel Pipe



Effective Area of Nylon Tube



Recommended Maximum Flow Rate Table for Gas Pipe

Nominal Dimension	1/8B	1/4B	3/8B	1/2B	3/4B	1B	1 1/4B	1 1/2B
Pressure Drop MPa (*1)	0.124	0.0707	0.0576	0.0425	0.0276	0.0209	0.0133	0.0105
Inlet Pressure MPa	Recommended max. flow rate (L/min)							
0.05	127	244	518	838	1,465	2,460	3,870	5,150
0.1	146	282	598	965	1,690	2,828	4,460	5,950
0.15	163	314	668	1,076	1,885	3,150	4,960	6,630
0.2	179	344	730	1,180	2,060	3,450	5,430	7,280
0.3	206	395	840	1,360	2,375	3,900	6,300	8,400
0.4	230	442	940	1,520	2,660	4,450	7,000	9,360
0.5	252	485	1,030	1,660	2,920	4,875	7,700	10,250
0.6	272	523	1,110	1,800	3,140	5,250	8,300	11,050
0.7	292	558	1,185	1,920	3,350	5,620	8,870	11,800
0.8	308	592	1,260	2,035	3,560	5,970	9,430	12,570
0.9	324	623	1,325	2,140	3,745	6,290	9,900	13,220
1.0	340	654	1,395	2,250	3,930	6,600	10,400	13,880
1.2	370	717	1,510	2,450	4,280	7,150	11,250	15,040
1.4	398	763	1,625	2,624	4,590	7,700	12,100	16,200
1.5	410	790	1,680	2,710	4,740	7,930	12,550	16,780

(*1: Inlet Pressure = 0.5 MPa
Gas Pipe Length: 10 m)

(Remarks)
For main lines where the piping distance is long, it is necessary to consider the degree of pressure drop that occurs at the end of the main line when air flows. Recommended maximum flow rate means the maximum flow rate that can be recommended within a range where the pressure drop relative to the piping length is acceptable, judged from practical use. Therefore, it does not mean that no more flow can pass, but that flowing more will result in a larger pressure drop.

Protective Structure

● Protection Structure

■ IEC (International Electrotechnical Commission: International Electrotechnical Commission) Standard (IEC60529)

■ JIS C 0920:2003

IP- □□

Protection Characteristic Code (International Protection)

First Characteristic Numeral (Protection class against ingress of foreign solid objects)

First Characteristic Numeral	Degree of Protection	
0	No protection	No protection
1	◯ø50 mm	Solid objects with a diameter of 50 mm or more do not ingress.
2	◯ø12.5 mm	Solid objects with a diameter of 12.5 mm or more do not ingress.
3	2.5 mm	Solid objects with a diameter of 2.5 mm or more do not ingress.
4	1 mm	Solid objects with a diameter of 1.0 mm or more do not ingress.
5	Dust-protected type	Dust does not ingress in a quantity sufficient to interfere with the normal operation and safety of the equipment.
6	Dust-tight type	No ingress of dust inside.

Second Characteristic Numeral (Degree of protection against ingress of water)

Second Characteristic Numeral	Degree of Protection	
0	No protection	
1	Protection against vertically falling water drops	No harmful effects from vertically falling water drops.
2	Protection against vertically dripping water when tilted up to 15 degrees (15°)	No harmful effects from water drops falling at an inclination of up to 15 degrees from vertical on either side.
3	Protection against spraying water	No harmful effects from water sprayed at an angle of up to 60 degrees from vertical on either side.
4	Protection against splashing water	No harmful effects from splashing water from any direction.
5	Protection against water jets	No harmful effects from water jets from a nozzle from any direction.
6	Protection against powerful water jets	No harmful effects from strong direct jets of water from any direction.
7	Protection against immersion in water	Water does not ingress when immersed in water under defined conditions.
8	Protection against continuous immersion in water	Can be used when continuously immersed in water.

MEMO

Safety Precautions

Be sure to read this section before use.

When designing and manufacturing equipment using CKD products, the manufacturer is obligated to ensure that the safety of the mechanism, pneumatic control circuit and/or water control circuit and the system that runs the electrical controls are secured.
It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.
Observe warnings and precautions to ensure device safety.
Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience.

2 Use this product in accordance with specifications.

This product must be used within its stated specifications. In addition, never modify or additionally machine this product.
This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)

❶ Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
❷ Use for applications where life or assets could be significantly affected, and special safety measures are required.

3 Observe organization standards and regulations, etc., related to the safety of the device design and control, etc.

ISO4414,JIS B 8370(Pneumatic fluid power - General rules and safety requirements for systems and their components)
JFPS2008(Principles for pneumatic cylinder selection and use)
Including the High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, organization standards and regulations, etc.

4 Do not handle, pipe, or remove devices before confirming safety.

❶ Inspect and service the machine and devices after confirming safety of the entire system related to this product.
❷ Note that there may be hot or charged sections even after operation is stopped.
❸ When inspecting or servicing the device, turn OFF the energy source (air supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
❹ When starting or restarting a machine or device that incorporates pneumatic components, make sure to secure system safety, such as pop-out prevention measures.

5 Observe the warnings and cautions on the following pages to prevent accidents.

■ Precautions are ranked as “DANGER”, “WARNING”, and “CAUTION” in this section.

DANGER:	In the case where the product operation is mishandled and/or when the urgency of a dangerous situation is high, it may lead to fatalities or serious injuries.
WARNING:	A dangerous situation may occur if handling is mistaken, leading to fatal or serious injuries.
CAUTION:	A dangerous situation may occur if handling is mistaken, leading to minor injuries or property damage.

Note that some items indicated with “CAUTION” may lead to serious results depending on the conditions.
All items contain important information and must be observed.

Warranty

1 Warranty period

The product specified herein is warranted for one (1) year from the date of delivery to the location specified by the customer.

2 Warranty coverage

If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD’s facilities free of charge.
However, following failures are excluded from this warranty:

1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
3) Failure not caused by the product.
4) Failure caused by use not intended for the product.
5) Failure caused by modifications/alterations or repairs not carried out by CKD.
6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
7) Failure caused by acts of nature and disasters beyond control of CKD.

The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.
Note: For details on the durability and consumable parts, contact your nearest CKD sales office.

3 Compatibility check

The customer is responsible for confirming the compatibility of CKD products with the customer’s systems, machines and equipment.

Precautions for export

1 Security Trade Control

The products in this catalog and their related technologies may require approval before export or provision. For the sake of maintaining world peace and safety, there may be cases in which approval under the Foreign Exchange and Foreign Trade Control Law is required in advance, depending on the country to where the product or related technology is being exported or provided.
The scope of products and related technologies requiring approval are listed in the Export Trade Control Order Appendix Table 1 or Foreign Exchange Order Appendix Table.
The Export Trade Control Order Appendix Table 1 and Foreign Exchange Order Appendix Table contain the following two types of information.

· “List controls” specified for items 1 to 15
· “Catch-all controls” that do not indicate specifications by item, but restriction by application (Section 16)

Products that require authorization or the range of relevant technology

- List control, which is specified in item 1 to 15
  Listed in the “Export Trade Control Order Appendix Table 1” or “Foreign Exchange Order Appendix Table”
- Catch-all control restricted by application (item 16)
  Listed in the “Export Trade Control Order Appendix Table 1” or “Foreign Exchange Order Appendix Table”

An application for approval is received by the Security Export Licensing Division of the Ministry of Economy, Trade and Industry or local bureaus of the Ministry of Economy, Trade and Industry.

2 Products and related technologies in this catalog

The products and related technologies in this catalog are subject to the catch-all control of the Foreign Exchange and Foreign Trade Control Law.
When exporting or providing the products or related technologies in this catalog, ensure that they are not used for arms or weapons.

3 Contact

Contact your local CKD Sales Office for information on the Security Trade Control of products and related technologies in this catalog.

*For cylinder switches, please check P. 924.

During Design/Selection

1. Specification Confirmation

Warning

■ Use within the product's specific specification range.
The products described in this catalog are designed to be used only in compressed air systems. Do not use at pressures or temperatures outside the specification range, as this may cause damage or malfunction. (See specifications). If using fluids other than compressed air and low hydraulic pressure, please consult us.

■ If product dimensional accuracy is required, please consult separately.
Dimensional tolerances for pneumatic cylinders are set based on JIS B8368. If accuracy is required, please inquire in advance.

2. Design for Safety

Warning

■ If the force changes due to twisting of the sliding part of the machine, there is a risk that the piston rod will fly out from the cylinder.
In such cases, there is a risk of injury to the human body, such as getting hands or feet caught, and damage to the machine, so make adjustments so that the machine moves smoothly and design it so that it does not cause injury to the human body.

■ If there is a risk of danger to the human body, please install a protective cover.
If the drive part of the cylinder poses a risk of danger to personnel, install a protective cover. Design the structure so that personnel cannot enter the cylinder's operating range or directly touch that area.

■ Consider the possibility of circuit pressure drop due to power outages, etc.
When using a cylinder for a clamping mechanism, if the circuit pressure drops due to a power outage, etc., the clamping force will decrease and there is a risk that the workpiece may come off. Therefore, incorporate a safety device to prevent injury or damage to personnel or machinery. Lifting devices and lifts also require consideration for fall prevention.

■ Consider the possibility of power source failure.
For equipment controlled by power sources such as pneumatic, hydraulic, or electric, take measures to prevent injury or damage to personnel or equipment even if these power sources fail.

■ Design a circuit to prevent flying out.
When driving a cylinder with an exhaust center type directional control valve, or when starting after exhausting residual pressure in the circuit, if one side of the piston is pressurized from a state where the air in the cylinder is exhausted, the driven object will project at high speed. In such cases, there is a risk of injury to the human body, such as getting hands or feet caught, and damage to the machine, so design a fly-out prevention circuit.

■ Consider the operating state during an emergency stop.
When a safety device activates and the machine stops due to a system abnormality such as an emergency stop or power outage, design the system so that cylinder operation does not cause injury to personnel or damage to equipment/devices.

■ Consider the operating state when restarting after an emergency stop or abnormal stop.
Design the system so that restarting does not cause harm to personnel or damage to equipment. Also, if it is necessary to reset the cylinder to the starting position, design a safe control device.

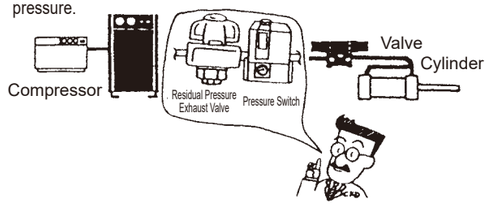
■ Take necessary measures in advance to prevent adverse effects on people or property if this product malfunctions.

Caution

■ Use within a range where the piston does not collide with the stroke end and get damaged.
When a piston with inertial force collides with the cover at the stroke end and stops, use within the allowable absorption energy range.

■ Install a speed controller on the cylinder.
Use within the operating piston speed range of each cylinder.

■ Install a "pressure switch" and a "residual pressure exhaust valve" on the compressed air supply side of the equipment.
● The pressure switch prevents operation if the set pressure is not reached. The residual pressure exhaust valve discharges the compressed air remaining in the pneumatic circuit and prevents accidents due to the operation of pneumatic equipment due to residual pressure.



■ Keep the load factor of the fall prevention cylinder at 50% or less.

3. Design by Application

Warning

■ When a deceleration circuit or shock absorber is necessary.
If the speed of the driven object is high or its mass is large, it will be difficult to absorb the impact with only the cylinder's cushion. Therefore, provide a circuit to decelerate before entering the cushion, or use an external shock absorber to mitigate the impact. In this case, sufficiently consider the rigidity of the machinery.

■ When inertia, vibration, etc., occur
When mounting a cylinder on a moving object (X-axis module, pallet, etc.), design it considering the inertia, vibration, etc. that occur when the moving object stops.

■ Regarding intermediate stop
When performing an intermediate stop of the cylinder piston with a 3-position closed center type directional control valve, it is difficult to stop at an accurate and precise position like low hydraulic pressure due to the compressibility of air. Also, since valves and cylinders do not guarantee zero air leakage, it may not be possible to hold the stop position for a long time. If long-term stop position holding is required, please consult us.

4. Operating Environment

Warning

■ Install the product avoiding rain, water, direct sunlight, and high humidity.

■ Do not use the product in atmospheres where there is a risk of corrosion.
Use in such an environment will cause damage and malfunction. Also, even for plated materials used for piston rods, tie rods, etc. in cylinders, plating is not applied to machined parts (thread width, cut surface). Rust can occur even in a general environment, so take necessary measures.

■ In dusty places, or where water droplets, oil droplets, cutting oil, or coolant may splash, install a cover, etc.
If there is a lot of dust, use a type with a heavy-duty scraper. If liquid scatters, use a cutting oil resistant type.

■ If the ambient temperature is 5°C or lower, moisture in the circuit may freeze, causing malfunctions. Remove moisture and prevent freezing.

Caution

■ When using cylinders with valves with AC voltage, humming noise may occur depending on the operating conditions. If humming noise is a problem depending on the operating environment, select DC voltage.

■ Some models use oil-impregnated bearings, and there is a possibility that oil may be discharged to the outside of the cylinder. Be careful when using in locations where oil discharge is undesirable.

5. Durability

Warning

■ Durability varies depending on operating conditions and model characteristics.

Caution

■ Bellows are consumable parts.
Replace as necessary.

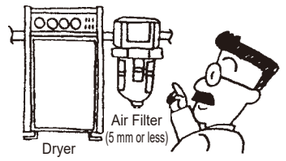
6. Pneumatic Source

Warning

■ Use clean, dry compressed air.
Do not use compressed air if it contains chemicals, synthetic oils containing organic solvents, salt, corrosive gases, etc., as this will cause damage or malfunction.

Caution

■ Use dry compressed air that does not generate drain within the piping.



● Drain will occur if there is a temperature drop inside the pneumatic piping or pneumatic equipment.
● If the piping volume is larger than the cylinder volume (atmospheric pressure equivalent volume), condensed water droplets will accumulate and become drain as the compressed air in the cylinder is not completely discharged with each switching of the solenoid valve.
● Drain enters the air passage inside the pneumatic equipment, instantaneously blocking the passage and causing malfunction.
● Rust occurs due to drain, causing malfunction of pneumatic equipment.
● Drain washes away lubricating oil, causing poor lubrication.

■ The use of ultra-dry air is unsuitable for standard pneumatic equipment. Use equipment compatible with ultra-dry air.
● Ultra-dry compressed air shortens the life of pneumatic equipment.
● Use DC voltage driven solenoid valves.

■ Use compressed air that does not contain oxidized oil, tar, carbon, etc. from the air compressor.
● Oxidized oil, tar, carbon, etc. enter and adhere inside the pneumatic equipment, increasing the resistance of sliding parts and causing malfunction.
● Lubricating oil supplied to oxidized oil, tar, carbon, etc. mixes and wears down the sliding parts of pneumatic equipment.

■ Use compressed air that does not contain solid foreign matter.
● Solid foreign matter in compressed air could enter the pneumatic components and cause wear at the sliding section or hydraulic locking. Filtration rating: therefore, please install an air filter with a filtration rating of 5 μm or less.
● Perform regular maintenance and inspection of the compressor.

7. Usage Method

Caution

■ It is initially lubricated, so it can be used without oil supply. If lubricating, use turbine oil Class 1 (non-additive) ISO-VG32. Also, if lubrication is stopped midway, malfunction will occur due to the loss of the initial lubricant, so be sure to continue lubrication. It is necessary to decide whether to adopt a non-lubricated or lubricated specification for pneumatic equipment and ensure that the chosen method is reliably managed.

■ Provide intermediate support for long-stroke cylinders.
For long stroke cylinders, provide intermediate support to prevent rod sag, tube deflection, and rod damage due to vibration or external load.

■ Use within the maximum stroke according to the mounting type.
Refer to Intro 30.

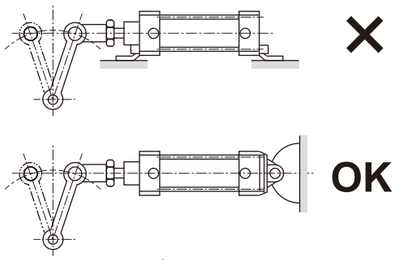
■ Cylinders with air cushions experience speed changes at the beginning of movement.
For cylinders with air cushion, speed changes occur when the cushion ring comes off the cushion packing at the beginning of movement. Depending on conditions such as speed controller placement and adjustment, piping diameter, air pressure, and cushion needle opening, the change may become large. If it is necessary to prevent this, please consult us.

■ Avoid using multiple cylinders synchronized as much as possible.
Synchronization cannot be achieved, causing twisting of the piston rod and leading to malfunction. If synchronous operation is necessary, be sure to provide a separate guide device with rigidity.

■ When installing clevises or trunnions, ensure they can rotate freely without interference during the full stroke operation of the cylinder before use.

■ If the direction of load movement changes with operation, use an oscillating type cylinder (clevis type, trunnion type) that allows the cylinder itself to rotate to a certain angle. Also, install the connecting fitting at the rod end so that it moves in the same direction as the cylinder body's movement.

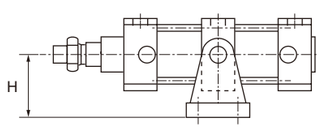
■ Do not connect a fixed type cylinder to an arm that performs circular motion. In this case, connect it to an oscillating type cylinder.



■ To prevent breakage of the piston rod end thread, wear of the bushing, seizure, etc., connect the piston rod end and the load with a free joint or simple flow controller so that there is no twisting at any position of the stroke.

■ If the clearance between the clevis or trunnion and the mating bearing is large, a bending action will be applied to the pin or shaft. Therefore, do not make this clearance too large. (Recommended fit H10/e8)

■ In the diagram below, if the height H from the mounting surface of the bearing bracket to the bearing position is large, a large force will be generated at the mounting part of the bracket by the cylinder force, which may cause damage to bolts, etc.



■ Cylinders may have slight oil seeP. from sliding parts, packings, and gaskets. Be careful when using in locations where oil seeP. is undesirable.

■ Precautions for using the relief port
Exhaust treatment type (P72) cannot be used for vacuum sweeping. And vice versa. This will cause particle scattering or defects, so absolutely do not do it.

8. Securing Space

⚠ Caution

■ Secure space around the cylinder for mounting, removal, wiring, and piping work.

9. Clearly Stated in Instruction Manual

⚠ Caution

■ Clearly state the maintenance conditions in the equipment's instruction manual.
● Depending on the usage conditions, operating environment, and maintenance, the product's functionality may significantly deteriorate, and safety may not be ensured. Proper maintenance allows the product to fully demonstrate its functions.

During Installation/Mounting/Adjustment

1. Installation

⚠ Warning

■ When installing the cylinder, protect the load from falling or tipping over.

⚠ Caution

■ Do not remove the cylinder packaging bag or the dust-proof port seal of the piping port until just before piping.
● If the dust-proof port seal of the piping port is removed before piping connection work, foreign matter may enter the cylinder from the piping port, causing failure, malfunction, etc.

■ When the cylinder weight is 15 kg or more, use a lifting tool.

■ Do not hit or clamp objects against the cylinder tube and piston rod sliding parts to avoid scratches or dents.
The tube bore is manufactured with precise tolerances, so even slight deformation can cause malfunction. Scratches or dents on the piston rod sliding part will damage packings and cause air leakage.

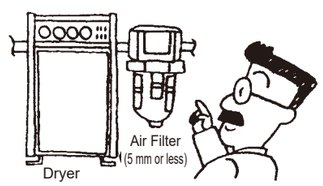
■ If the direction of load movement is not parallel to the axis of the piston rod, twisting may occur in the piston rod and body (tube), posing a risk of the piston rod flying out. Twisting can also cause seizure, damage, etc. Be sure to align the piston rod axis with the direction of load movement.

■ Prevent seizure of rotating parts.
Apply grease to rotating parts (pins, etc.) to prevent seizure.

2. Pneumatic Source

⚠ Caution

■ Install a pneumatic filter immediately before the circuit using pneumatic equipment.
● Install an air dryer and filter to remove moisture in the piping. Also, to remove rust, foreign matter, and drain, install a filter near the directional control valve (primary side).



■ When supplying compressed air after completing pipe connections, supply it so that high pressure is not applied suddenly.
● Piping connection comes off, piping tube flies off, and an accident occurs.
● If compressed air is supplied too slowly, air leakage may occur because sealing pressure is not generated depending on the sealing mechanism inside the solenoid valve.
● The cylinder may operate suddenly.

3. Piping

⚠ Caution

■ When piping, refer to the instruction manual and be careful not to make mistakes with connection ports, etc.
● This will cause malfunction.

■ When connecting pipes, wrap sealing tape clockwise starting from a position two or more threads inward from the tip of the threaded part of the pipe.
● If the sealing tape protrudes beyond the threaded part of the pipe, the sealing tape will be cut by screwing and enter the inside as a fragment, causing failure.



■ Ensure that the piping connected to the cylinder does not come off due to vibration, loosening, or tension.
● If the exhaust side piping of the pneumatic circuit comes off, cylinder speed control will be lost.
● In the case of a chuck holding mechanism, the chuck will be released, creating a dangerous situation.

■ When using nylon tubes or urethane tubes, pay attention to the following:
● In an atmosphere where spatter scatters, use flame-retardant tubes or metal pipes.

■ Use corrosion-resistant piping materials such as galvanized pipes, stainless steel pipes, nylon pipes, or rubber hoses.

■ Tighten with appropriate torque when connecting pipes.

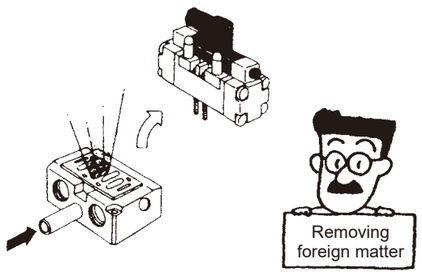


- The purpose is to prevent air leakage and screw damage.
- To avoid damaging the threads, first tighten by hand, then use a tool.

[Reference Value] See instruction manual.

Connection Thread	Tightening Torque (N·m)
M3	0.3 to 0.6
M5	1 to 1.5
Rc 1/8	3 to 5
Rc 1/4	6 to 8
Rc 3/8	13 to 15
Rc 1/2	16 to 18
Rc 3/4	19 to 40
Rc 1	41 to 70

■ When piping, be sure to perform flushing immediately before connecting to pneumatic equipment.
- It is necessary that foreign matter that entered during piping does not enter the pneumatic equipment.



4. Confirmation before Operation

Warning

■ Before operation, confirm that there is no looseness or abnormality in the load or cylinder mounting/fastening parts.

■ Do not use until it is confirmed that the equipment operates properly.
After installation, repair, or modification, connect compressed air or electricity, perform appropriate functional tests and leak tests, and confirm that installation is normal.

■ Confirm that there is no mechanical interference or abnormality in the operating system.

■ Gradually increase and set the pressure while confirming that there is no abnormality in the operation of the equipment.

■ If started when the exhaust side is at atmospheric pressure, the rod may fly out, which is dangerous. When starting, always apply pressure to the exhaust side cylinder chamber.

Caution

■ When piping connection is complete and compressed air is supplied, be sure to confirm that there is no air leakage from all parts of the piping connection.
- Apply leak detection fluid to the piping connection part with a brush to confirm that there is no air leakage.

■ Always read the instruction manual.
Read carefully and understand the contents before using the product. Also, keep it so that you can check it at any time.

5. Adjustment

Warning

■ When adjusting speed with a speed controller, adjust by gradually opening the needle from the closed state. Starting speed adjustment in the open state is dangerous as the rod may fly out.

■ The effectiveness of the cushion for air cushion type is adjusted at the time of shipment, but readjust with the cushion needle according to the load and piston speed during use.
Gradually open the needle from the closed state to adjust the cushioning effect. Note that if the cushion needle is loosened too much, there will be no cushioning effect, and it may fall off. After adjustment, tighten and fix the needle nut (hexagon nut). Use within the allowable kinetic energy value. If used exceeding the allowable value, the product may be damaged.

■ When the cylinder is operating, do not enter or put your hands within the cylinder's operating range.

During Use/Maintenance

1. Maintenance and Inspection

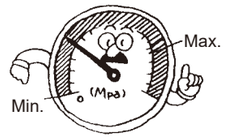
Warning

■ Perform maintenance inspections carefully according to the instruction manual.
Mishandling will cause damage or malfunction of equipment or devices.

Caution

■ Plan and implement daily and periodic inspections so that maintenance management is performed correctly.
- If maintenance management is insufficient, the product's functions will be significantly impaired, leading to reduced lifespan, damage, malfunctions, and other problems or accidents.

① Supply Compressed Air Pressure Management
- Is the set pressure being supplied?
  Does the pressure gauge indicate the set pressure while the equipment is operating?



② Pneumatic Filter Management
- Is drain being discharged normally?
  Is the contamination status of the bowl and element normal?

③ Compressed Air Leakage Management at Piping Connections
- Is the condition of the connecting parts of movable parts, in particular, normal?

④ Solenoid Valve Operating Status Management
- Is there any delay in operation, and is the exhaust state normal?

⑤ Pneumatic Actuator Operating Status Management
- Is operation smooth?
  Is the end-of-stroke stop status normal?
  Is the connection with the load normal?

⑥ Lubricator Management
- Is oil level adjustment normal?

⑦ Lubricating Oil Management
- Is the supplied lubricating oil genuine?

■ If air leakage increases or the equipment does not operate normally, do not use it.
- After repair or modification, connect compressed air or electricity, perform appropriate functional tests and leak tests, and confirm normal operation.

■ If restarting after a long period of non-use, confirm normal operation.

■ Replace consumable parts that have exceeded their rated life with new ones during periodic inspection.
Do not use consumable parts that have been stored for 5 years or more.

■ Store consumable parts in a cool, dark place away from direct sunlight.

■ If lubrication of sliding surfaces deteriorates or becomes dry, periodically apply lithium grease (general type) or fluorine grease (heat-resistant, low-speed, low-friction, P7 type, etc.). Before applying grease, be sure to remove foreign matter from the sliding surfaces. If the type of grease used is unknown, please contact us.

2. Effect of Fluorine Grease

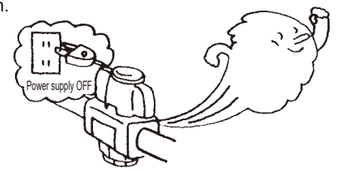
Warning

■ If you smoke a cigarette, etc., with hands that have fluorine grease on them from cylinders using fluorine grease (heat-resistant, low-speed, low-friction, P7, etc.), harmful gas may be generated, posing a risk to human health. Please be careful.

3. Removal

Warning

■ Removal of equipment and supply/exhaust of compressed air
When removing equipment, confirm that measures to prevent the driven object from falling or running away have been taken, then shut off the supply air and connected power, and exhaust the compressed air in the system before proceeding. When restarting, confirm that projection prevention measures have been taken, then proceed with caution.



■ When removing the load from a double-rod cylinder, always fix the double-flat portion of the piston rod on the load side. Please note that if this is done without fixing the piston rod on the load side, the fastening part (threaded part) of the piston rod may loosen.

■ When removing the cylinder, take measures to prevent the load from falling or tipping over before starting.

4. Disassembly/Assembly

Warning

■ Disassemble the cylinder after removing it from the equipment.

■ When performing disassembly and assembly, have it done by a worker who has acquired specialized knowledge.
After disassembly and reassembly, perform leak and operation tests before reassembling onto the equipment.

■ When disassembling a single-acting cylinder, be very careful as parts may fly out due to the spring.

■ Install and remove rod metal using appropriate pliers (C-type retaining ring installation tool).

■ Even when using appropriate pliers (C-type retaining ring installation tool), the retaining ring may come off the tip of the pliers (C-type retaining ring installation tool) and fly off, potentially causing injury to personnel and damage to surrounding equipment. Be careful.
Also, when installing, confirm that it is securely in the retaining ring groove before supplying air.

⚠ Caution

■ When performing maintenance such as replacing consumable parts, disassemble and reassemble on a test bench in a clean, dust-free atmosphere, and perform a functional test to ensure the equipment operates normally.

MEMO

Space-saving Cylinders

	Listed Page
Compact Cylinders **SSD2** Series	3
Guided Compact Cylinders **SSG** Series	329
Compact Cylinders **SSD** Series	349
Cartridge Cylinders **CAT** Series	703
Compact Direct Cylinders **MDC2** Series	713
Compact cylinders **SMG** Series	749
Compact Cylinders **MSD** Series	785
Flat Cylinders Compact Demi **FC□** Series	829

Space-Saving Type

SSD2

Compact Cylinders

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63
ø80, ø100, ø125, ø140, ø160, ø180, ø200



CONTENTS

Product Introduction	4
Series System Table	6
Variation Option Combination Availability Table	8
●Double acting/single rod (SSD2)	12
●Double acting/single rod/large bore size (SSD2)	26
●Double acting/single rod/high load (SSD2-K)	36
●Double acting/single rod/long stroke (SSD2-L)	48
●Single acting/push (SSD2-X)	60
●Single acting/pull (SSD2-Y)	60
●Double acting/heat resistance (SSD2-T1)	78
●Double acting with heat resistant cylinder switch (SSD2-T1L)	82
●Double acting/high load/rubber-air cushioned (SSD2-K-□C)	92
●Double acting/position locking (SSD2-Q)	100
●Double acting/fine speed (SSD2-F, SSD2-KF)	114
●Double acting/low speed (SSD2-O)	118
●Double acting/high load/low friction (SSD2-KU)	124
●Double acting/double rod (SSD2-D)	128
●Double acting/double rod/large bore size (SSD2-D)	140
●Double acting/back to back (SSD2-B)	148
●Double acting/two-stage (SSD2-W)	158
●Double acting/rotation-stop (SSD2-M)	166
●Double acting/double rod/rotation-stop (SSD2-DM)	178
●Double acting/rubber scraper (SSD2-G)	188
●Double acting/coolant proof (SSD2-G2/G3)	198
●Double acting/high load/coolant proof (SSD2-KG2/KG3)	208
●Double acting/coil scraper (SSD2-G1)/anti-spatter adherence (SSD2-G4)	218
●Double acting/high load/coil scraper (SSD2-KG1)/anti-spatter adherence (SSD2-KG4)	226
●Double acting/double rod/coil scraper (SSD2-DG1)/anti-spatter adherence (SSD2-DG4)	236
●Double acting/environment-resistant scraper (SSD2-G5)	244
●Double acting/high load/environment-resistant scraper (SSD2-KG5)	256
●Double acting with strong magnetic field proof switch (SSD2-L4)	268
●Double acting/high load/strong magnetic field proof with switch (SSD2-KL4)	276
●Double acting with strong magnetic field proof switch with coil scraper (SSD2-G1L4)	284
●Double acting/high load with strong magnetic field proof switch with coil scraper (SSD2-KG1L4)	292
External Dimensions Diagram with Switch	300
Accessories Outline Dimension Drawing	34
Mounting Bolt List	310
Custom Products	318
⚠ Precautions for Use	322

Wide variations, compact type with switch mountable on 4 surfaces

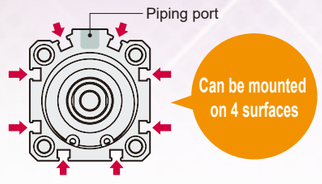
Space-saving cylinder with a compact overall length compared to general types. Can be installed even in limited spaces, contributing to equipment miniaturization.



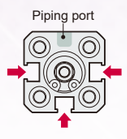
Cylinder switch grooves on all 4 surfaces

Cylinder switches can also be mounted on the same surface as the piping port, improving visibility and maintainability. (ø20 to ø200)

● **Cylinder switch groove position (ø20 to ø200)**



ø12 to ø16 can be mounted on three surfaces



Same dimensions even with rubber cushion

Even if the rubber cushion is selected, the overall length dimension remains the same.

Abundant standard stroke settings

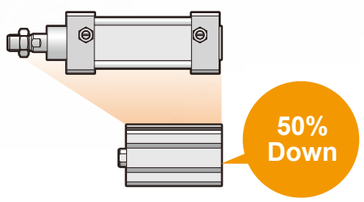
Finer stroke settings compared to conventional products. Optimal model can be selected according to the design.

Compact overall length

SCA2: SCA2-00-40B-50
SSD2: SSD2-L-40-50

SCA2
200.5 mm

SSD2
96.5 mm



Shorter overall length with dedicated body

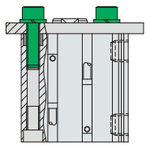
Supports stroke increments of 1 mm without using spacers. (Basic type only, ø125 to ø200 standard, ø12 to ø100 optional)

Through hole + taps on both ends equipped as standard

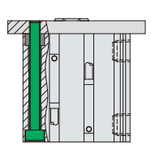
Mounting direction does not need to be selected when choosing the model number. Contributes to reduction in design man-hours and spare parts.

Rod Side Mounting

Screw-in mounting

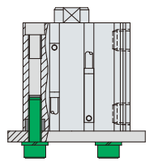


Through-bolt mounting

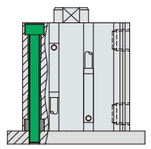


Head Side Mounting

Screw-in mounting



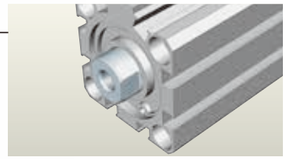
Through-bolt mounting



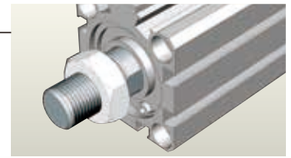
Selectable rod end thread

Rod end can be selected as female thread (standard) or male thread (option).

Female thread (Standard)



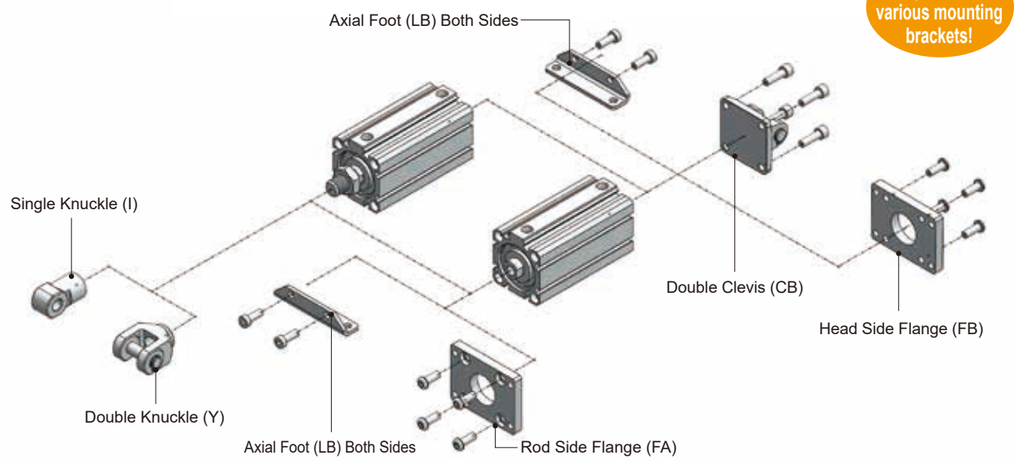
Male thread (Option)



Abundant Mounting Brackets

Achieves high design flexibility with a wide variety of mounting brackets.

Compatible with various mounting brackets!



SSD2 Series Product System

Series		Bore size (mm)
Single rod	SSD2	ø12 to ø200
High load	SSD2-K	ø12 to ø100
Long stroke	SSD2-L	ø12 to ø100
Single Acting, Push Type	SSD2-X	ø12 to ø50
Single acting/pull	SSD2-Y	ø12 to ø50
Heat resistance	SSD2-T1	ø12 to ø100
With heat resistant cylinder switch	SSD2-T1L	ø16 to ø63
High load/rubber-air cushioned	SSC2-K-□ C	ø20 to ø100
Position locking	SSD2-Q	ø20 to ø100
Fine speed/high load/fine speed	SSD2-F/SSD2-KF	ø12 to ø100
Low speed	SSD2-O	ø12 to ø100
High load/low friction	SSD2-KU	ø20 to ø100
Double rod	SSD2-D	ø12 to ø200
Back to back	SSD2-B	ø12 to ø100
Two-stage	SSD2-W	ø12 to ø100
rotation-stop	SSD2-M	ø12 to ø63
Double rod/rotation-stop	SSD2-DM	ø12 to ø63

Series		Bore size (mm)
Rubber scraper	SSD2-G	ø20 to ø100
Coolant proof	SSD2-G2/G3	ø16 to ø100
High load/coolant proof	SSD2-KG2/KG3	ø16 to ø100
Coil scraper	SSD2-G1	ø25 to ø100
Anti-spatter adherence	SSD2-G4	ø25 to ø100
High load/coil scraper	SSD2-KG1	ø25 to ø100
High load/ anti-spatter adherence	SSD2-KG4	ø25 to ø100
Double rod/coil scraper	SSD2-DG1	ø25 to ø100
Double rod/anti-spatter adherence	SSD2-DG4	ø25 to ø100
Environment-resistant scraper	SSD2-G5	ø20 to ø100
High load/environment-resistant scraper	SSD2-KG5	ø20 to ø100
With strong magnetic field proof switch	SSD2-L4	ø40 to ø100
With strong magnetic field proof switch with coil scraper	SSD2-G1L4	ø40 to ø100
High load/with strong magnetic field proof switch	SSD2-KL4	ø40 to ø100
High load with strong magnetic field proof switch/coil scraper	SSD2-KG1L4	ø40 to ø100

System Table

Compact Cylinder SSD2 Series

●: Standard, ◎: Option, ○: Custom Products, △: Available depending on conditions (Contact CKD) : Not manufacturable

Variation	Model No.	Bore Size (mm)	Standard Stroke (mm)	Min. Stroke (mm)	Max. Stroke (mm)	Intermediate Stroke (mm)	Option: Rod end male thread N	Option: Dedicated body for intermediate stroke S	Mounting bracket: Foot LB	Mounting bracket: Double Clevis CB	Mounting bracket: Rod Side Flange FA	Mounting bracket: Head Side Flange FB	Switch	Page
Double Acting, Single Rod Type with Switch	SSD2 SSD2-L SSD2 Large Bore	ø12, ø16	●●●

SSD2 Series

Combination Availability Table for Variations and Option Items

SSD2 (ø100 or less)

●symbol: Standard ◎symbol: Option ○symbol: Custom △symbol: Available depending on conditions (Contact CKD) ×: Not manufacturable

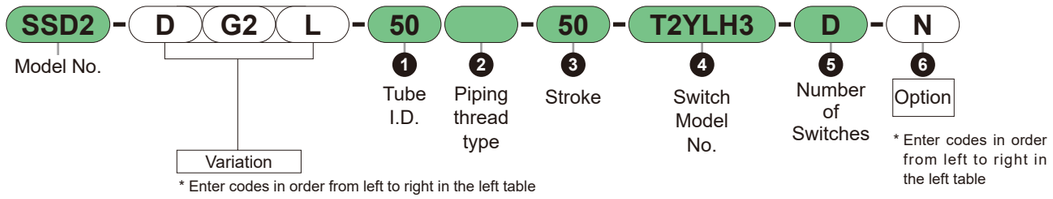
Category		Category	Variation										Variation											Piping thread			Option	
			Double Acting Basic Type	High Load Type	Single Acting, Push Type	Single Acting, Retracting Type	Double Acting Double Rod Type	Back-to-Back Type	Two-Stage Type	With Fall Prevention	Non-Rotating Type	Heat Resistant 150°C Specification	Low Speed Type	Low Friction Type	Heavy-duty Scraper	Metal Scraper	Cutting Oil Resistant Scraper Type	Cutting Oil Resistant Scraper Type	Sputter adhesion prevention type	With Switch	With Switch, Strong Magnetic Field	With Switch, Heat Resistant	Low speed type	NPT	G		Piston Rod Stainless Steel	Piston Rod End Male Thread
		Code	None	K	X	Y	D	B	W	Q	M	T1	O	KU	G	G1	G2	G3	G4	L	L4	T1L	F	NN	GN		M	N
Variation	Double Acting Basic Type	Blank																						○	○		◎	◎
	High Load Type	K			×	×	△	○	△	△	○	×	○		○	○	○	○	○	○	○	×	○	○	○		◎	◎
	Single Acting, Push Type	X				×	△	○	×	×	△	×	×	×	△	△	△	△	△	◎	○	×	×	○	○		◎	◎
	Single Acting, Retracting Type	Y					△	○	×	×	△	×	×	×	△	△	△	△	△	◎	○	×	×	○	○		◎	◎
	Double Acting Double Rod Type	D						×	×	△	○	○	○	×	○	○	○	○	○	◎	○	○	○	○	○		◎	◎
	Back-to-Back Type	B							×	○	○	○	○	○	○	○	○	○	○	◎	○	○	○	○	○		◎	◎
	Two-Stage Type	W								×	○	○	○	×	△	△	△	△	△	◎	○	○	○	○	○		◎	◎
	With Fall Prevention	Q									△	×	△	×	△	△	△	△	△	◎	○	△	△	○	○		△	◎
	Non-Rotating Type	M										×	○	×	×	×	×	×	×	◎	○	×	○	○	○		◎	◎
	Heat Resistant Type (150°C)	T1											×	×	×	○	×	×	×	×	×	×	×	○	○		◎	◎
	Low Speed Type	O												×	×	×	×	×	×	◎	○	×	×	○	○		◎	◎
	Low Friction Type	KU													×	×	×	×	×	◎	◎	×	×	○	○		○	◎
	With Heavy-duty Scraper	G														×	×	×	×	○	○	×	×	○	○		○	○
	With Metal Scraper	G1															×	×	×	◎	○	○	×	○	○		○	○
	With Cutting Oil Resistant Scraper (NBR)	G2																×	×	◎	×	×	×	○	○		*1	◎
	With Cutting Oil Resistant Scraper (FKM)	G3																	×	◎	×	×	×	○	○		*1	◎
	Sputter adhesion prevention type	G4																		○	○	×	×	○	○		○	○
	With Cylinder Switch	L																			×	×	◎	○	○		◎	◎
	With Cylinder Switch (For Strong Magnetic Field)	L4																				×	○	○	○		○	◎
	With Cylinder Switch (For Heat Resistance)	T1L																					×	○	○		○	◎
	Low speed type	F																						○	○		○	◎
Piping	NPT (ø32 to ø100)	NN																							×		○	○
	G (ø32 to ø100)	GN																									○	○
Option	Piston Rod Material Stainless Steel (Including C-type retaining ring)	M																										◎
	Piston Rod End Male Thread	N																										
Accessories	Cylinder Switch	Separately Shown	◎	◎	◎	◎	◎	◎	◎	◎	◎	×	◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Single Knuckle (Male thread only)	I	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	△	△	◎	◎	◎	◎	◎	○	○		△	◎
	Double Knuckle (Male thread only)	Y	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	△	△	◎	◎	◎	◎	◎	○	○		△	◎
	Mounting Bracket LB With Bolts	LB	◎	◎	◎	◎	◎	△	△	◎	◎	◎	◎		△	△	△	△	△	◎	◎	◎	◎	○	○		△	◎
	Mounting Bracket CB With Bolts & Pins	CB	◎	◎	◎	◎	×	×	△	◎	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		△	◎
	Mounting Bracket FA With Bolts	FA	◎	◎	◎	◎	◎	△	△	◎	◎	◎	◎		△	△	△	△	△	◎	◎	◎	◎	○	○		△	◎
	Mounting Bracket FB With Bolts	FB	◎	◎	◎	◎	×	×	△	◎	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		△	◎
	Mounting Bolt	Separately Shown	◎	◎	◎	◎	◎	×	×	◎	◎	◎	◎		◎	◎	△	△	◎	◎	◎	◎	◎	○	○		△	◎

*1: For "G2" and "G3", the material of the piston rod and C-type retaining ring is stainless steel. The "M" code is not necessary.

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

SSD2 Series

[Model Number Indication Example]



Model No. Compact Cylinder
Variation Double rod/coolant proof scraper/with switch
1 Bore size: ø50 mm
2 Port Thread Type: Rc Thread
3 Stroke: 50 mm
4 Switch Model No.: Coolant proof switch, 3 m lead wire
5 Number of Switches: With 2 pcs
6 Option: Rod end male thread

*1: Back-to-back type has two cylinders. When indicating each variation, use the following method.
If only S1 has a variation, enter the variation symbol before the S1 stroke.
(Example) SSD2-B-32- = M10-30: Only S1 is non-rotating type.
If only S2 has a variation, enter the variation symbol before the S2 stroke.
(Example) SSD2-B-32-10- = M30: Only S2 is non-rotating type.
If S1 and S2 have the same variation, enter the variation symbol before the bore size.
(Example) SSD2- = MB-32-10-30:S1 and S2 are both rotation-stop.

MEMO

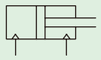
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, Single Rod Type

SSD2 Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

JIS Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch): SSD2 - 12 - ( ) ( ) - 5 ——— N - LB - I

With Switch (Built-in magnet for switch): SSD2-L - 12 - ( ) ( ) - 10 - T0H - R - N - LB - I

❶ Model No.	❷ Bore Size	❸ Piping thread type	❹ Cushion	❺ Stroke	❻ Switch Model No.	❼ Number of Switches	❽ Option	❾ Mounting type	❿ Accessories

❶Model No.

Code	Content
SSD2	Double Acting/Single Rod Type
SSD2-L	Double-acting, Single rod type with switch

❷Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❸Port Thread Type:

Code	Content
Blank	M5 (ø12 to ø25) Rc thread (ø32 to ø100)
N	NPT thread (Custom product) (ø32 to ø100)
G	G thread (Custom product) (ø32 to ø100)

❹Cushion

Code	Content
Blank	Without Cushion
D	With Rubber Cushion

❺Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

❻Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□							●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
4: T8 switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
*10 5	5 m (Option)
*9 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10:F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❼Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❾Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 17, 18, 20, 21. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

❽Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	
*2 S	Dedicated body for intermediate stroke	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.
*2: For intermediate stroke, refer to P. 14.

❿Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❸Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 14.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3: For minimum stroke for ❾ mounting type LB, refer to P. 17, 20.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2 - ..... - XP5

Clean Specification (Catalog No. CB-033SAA)
●Dust generation prevention structure usable in cleanrooms
SSD2 - ..... - P7□
SSD2 - ..... - P5□

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)
●Food grade lubricant usable in food manufacturing processes
SSD2 - ..... - FP1

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)
●Structure usable in rechargeable battery manufacturing processes
SSD2 - ..... - P4□
*Please contact us for details.

High Durability Components HP Series (Catalog No. CC-1421AA)
●Long-life actuator that can contribute to productivity improvement with stable operation
SSD2 - ..... - HP□

Switch Single Unit Model No. Notation Method

SW - T0H
❻ Switch Model No.

Specifications

Item		SSD2 SSD2-L (With Switch)									
Bore size mm		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type									
Operating Fluid		Compressed Air									
Max. Operating Pressure MPa		1.0									
Min. Operating Pressure MPa		0.1							0.05		
Proof pressure MPa		1.6									
Ambient Temperature °C		-10 to 60 (Provided that freezing does not occur)									
Port Size		M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	With Rubber Cushion	$^{+2.0}_{0}$									
	Without Cushion	$^{+1.0}_{0}$									
Operating Piston Speed mm/s		50 to 500							50 to 300		
Cushion		Rubber cushion available/unavailable selectable									
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable absorbed Energy J	With Rubber Cushion	0.03	0.05	0.10	0.16	0.16	0.44	0.75	0.78	2.51	3.92
	Without Cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 2 Switches)

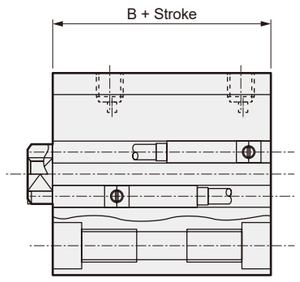
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			
ø32			15
ø40			
ø50			
ø63			10
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2 Series

Item	Standard Product: Spacer type on standard stroke body		Optional Product: Dedicated Body Type (-S)	
Model No. indication	Refer to model No. indication method.		Indicates the "Option" code -S in the model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.		A dedicated body is manufactured for the specified stroke	
Stroke Range	Bore Size	Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29	12, 16	6 to 29
	20 to 25	1 to 49	20, 25	6 to 49
	32 to 100	1 to 99	32 to 100	11 to 99
Model Number Indication Example	Model No.: SSD2-32-38 A +2 mm spacer is added to the standard cylinder SSD2-32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63		Model No.: SSD2-32-38-S A dedicated body for 41 stroke is manufactured. B + Stroke = 23 + 38 = 61	



Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-	-	-	-	-	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777
ø80	-	-	928	1341	1015	1428	1101	1514	1188	1601	1274	1687	1361	1774	1448	1861	1535	1948	1621	2034	2401	2467	2833	2899
ø100	-	-	1433	2,000	1547	2114	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	3406	3478	3973	4045

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^4	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^3
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

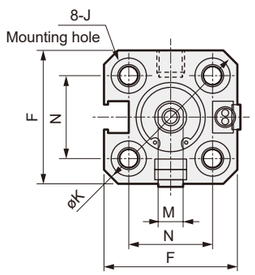
Bore Size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

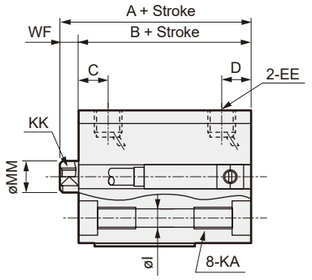
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

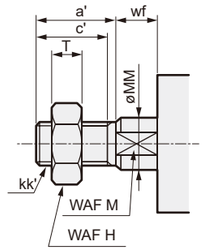
● SSD2-(L)-12 to 25

ø12, ø16

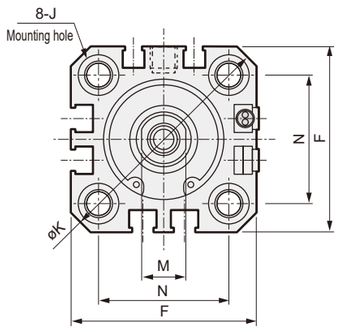


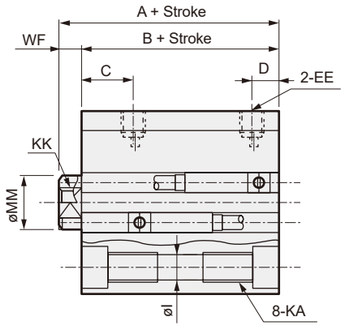


● Rod end male thread part



ø20, ø25





Code	Dimension with switch		Dimension without switch		Common dimension					
Bore Size (mm)	A *1	B *1	A *1	B *1	C	D	EE	F	I	J
ø12	25.5	22	20.5	17	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5
ø16	25.5	22	20.5	17	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5
ø20	34	29.5	24	19.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5
ø25	37.5	32.5	27.5	22.5	11	6	M5	40	5.5	9 Counterbore depth 5.5

Code							
Bore Size (mm)	K	KA	KK	M	MM	N	WF
ø12	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	51	M6 depth 11	M6 Depth 12	10	12	28	5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
For ø16: A (25.5) + Stroke (10) = 35.5 B (22) + Stroke (10) = 32
If the dedicated body "S" for intermediate stroke is selected, enter the intermediate stroke value of 7 mm as is for calculation.
For ø16: A (25.5) + Stroke (7) = 32.5 B (22) + Stroke (7) = 29

***2: For dimensions with each switch, refer to P. 300 to 309.**

***3: For outline dimension drawings of individual accessories, refer to P. 34.**

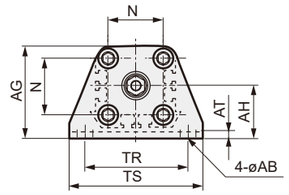
*4: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.

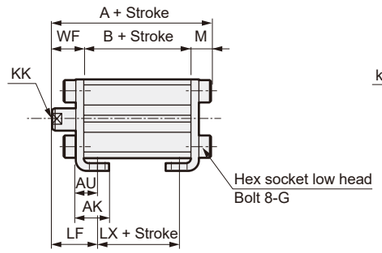
● Rod end male thread part

Code								
Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

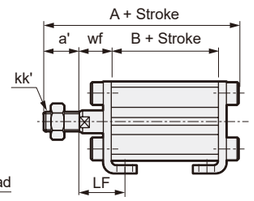
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB)
SSD2-(L)-12 to 25-LB





For rod end male thread

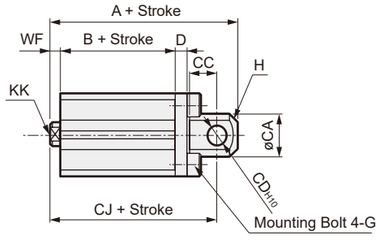


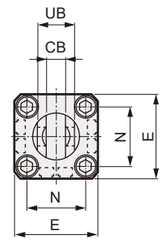
Code	Common dimension												For female thread	
Bore Size (mm)	AB	AG	AH	AK	AT	AU	G	N	TR	TS	KK	M	WF	LF
ø12	5	29.5	17	12.5	2	8	M4×10	15.5	34	44	M3 depth 6	4.8	13.5	19.5
ø16	5	33.5	19	13	2	8	M4×10	20	38	48	M4 depth 8	4.8	13.5	19.5
ø20	7	42	24	15	3.2	9.2	M6×16	25.5	48	62	M5 depth 7	7.2	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	M6×16	28	52	66	M6 Depth 12	7.2	15	22.5

Code	For male thread															
	Dimension with switch			Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
Bore Size (mm)	A	B	LX	A	B	LX					A	B	LX	A	B	LX
ø12	40.3	22	10	35.3	17	5	10.5	M5	13.5	19.5	50.8	22	10	45.8	17	5
ø16	40.3	22	10	35.3	17	5	12	M6	13.5	19.5	52.3	22	10	47.3	17	5
ø20	51.2	29.5	17.5	41.2	19.5	7.5	14	M8	14.5	20.5	65.2	29.5	17.5	55.2	19.5	7.5
ø25	54.7	32.5	17.5	44.7	22.5	7.5	17.5	M10 × 1.25	15	22.5	72.2	32.5	17.5	62.2	22.5	7.5

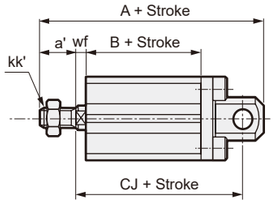
*1: ø20: LB cannot be selected for 5 strokes without switch.

● Double Knuckle Clevis (CB)
SSD2-(L)-12 to 25-CB





For rod end male thread

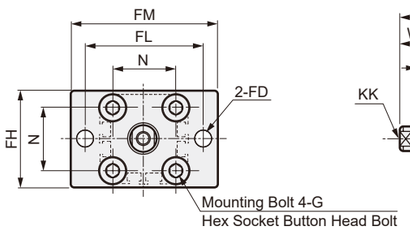


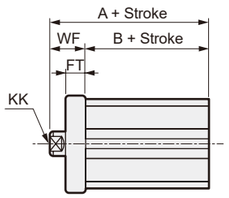
Code	Common dimension										
Bore Size (mm)	CA	CB	CC	CD	D	E	G	H	KK	N	UB
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	C1.5	M3 depth 6	15.5	$10^{-0.1}_{-0.3}$
ø16	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	C2	M4 depth 8	20	$12^{-0.1}_{-0.4}$
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	C4	M5 depth 7	25.5	$16^{-0.1}_{-0.3}$
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	C5	M6 Depth 12	28	$20^{-0.1}_{-0.3}$

Code	For female thread							For male thread								
	WF	Dimension with switch			Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
Bore Size (mm)		A	B	CJ	A	B	CJ				A	B	CJ	A	B	CJ
ø12	3.5	45.5	22	39.5	40.5	17	34.5	10.5	M5	3.5	56	22	39.5	51	17	34.5
ø16	3.5	46.5	22	40.5	41.5	17	35.5	12	M6	3.5	58.5	22	40.5	53.5	17	35.5
ø20	4.5	61	29.5	52	51	19.5	42	14	M8	4.5	75	29.5	52	65	19.5	42
ø25	5	67.5	32.5	57.5	57.5	22.5	47.5	17.5	M10 × 1.25	5	85	32.5	57.5	75	22.5	47.5

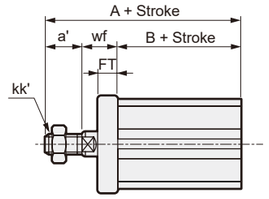
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange (FA)
SSD2-(L)-12 to 25-FA





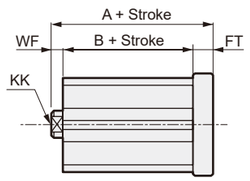
For rod end male thread

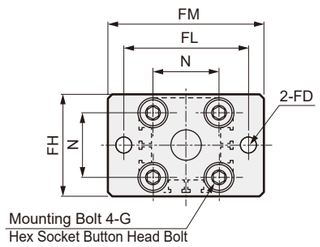


Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

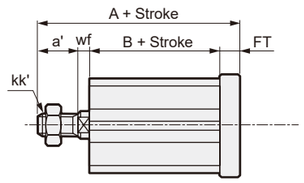
Code / Bore Size (mm)	For female thread					For male thread						
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø12	13.5	35.5	22	30.5	17	10.5	M5	13.5	46	22	41	17
ø16	13.5	35.5	22	30.5	17	12	M6	13.5	47.5	22	42.5	17
ø20	14.5	44	29.5	34	19.5	14	M8	14.5	58	29.5	48	19.5
ø25	15	47.5	32.5	37.5	22.5	17.5	M10 × 1.25	15	65	32.5	55	22.5

● Head Side Flange (FB)
SSD2-(L)-12 to 25-FB





For rod end male thread

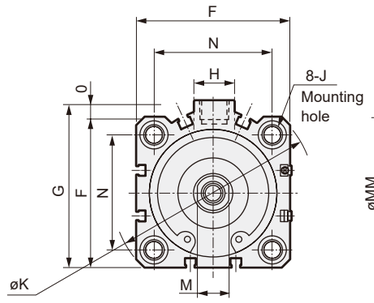


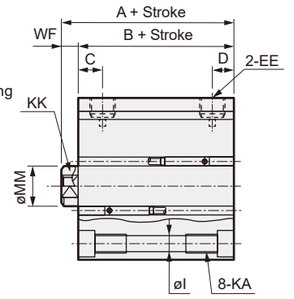
Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

Code / Bore Size (mm)	For female thread					For male thread						
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø12	3.5	31	22	26	17	10.5	M5	3.5	41.5	22	36.5	17
ø16	3.5	31	22	26	17	12	M6	3.5	43	22	38	17
ø20	4.5	42	29.5	32	19.5	14	M8	4.5	56	29.5	46	19.5
ø25	5	45.5	32.5	35.5	22.5	17.5	M10 × 1.25	5	63	32.5	53	22.5

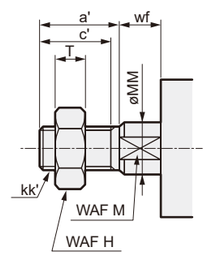
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-(L)-32 to 100





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch		Dimension without switch		Common dimension						
	A *1	B *1	A *1 *4	B *1 *4	C *6	D *6	EE	F	G	H	I
ø32	40	33	30 (40)	23 (33)	8 (10)	8 (5.5)	Rc1/8 *5	45	49.5	12.5	5.5
ø40	46.5	39.5	36.5 (46.5)	29.5 (39.5)	12 (11.5)	8.5 (8)	Rc1/8	52	57	15	5.5
ø50	48.5	40.5	38.5 (48.5)	30.5 (40.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	54	46	44 (54)	36 (46)	13	11	Rc1/4	77	84	23	8.7
ø80	63.5	53.5	53.5 (63.5)	43.5 (53.5)	16	13	Rc3/8	98	104	31	10.5
ø100	75	63	65 (75)	53 (63)	23	15	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	J	K	KA	KK	M	MM	N	O	WF
ø32	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

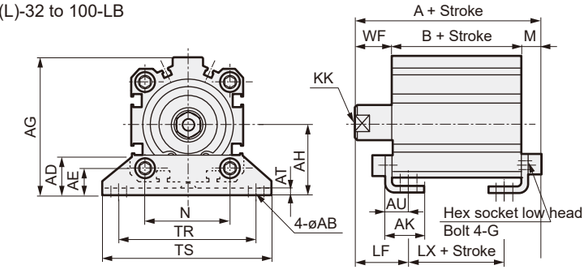
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For SSD2-L-32-7, when the intermediate stroke is 7 mm, enter the standard stroke of 10 mm for calculation.
For ø32 A + Stroke = 40 + 10 = 50 B + Stroke = 33 + 10 = 43
If the dedicated body "S" for intermediate stroke is selected, enter the intermediate stroke value of 7 mm as is for calculation.
For ø32 A + Stroke = 40 + 7 = 47 B + Stroke = 33 + 7 = 40
***2: For dimensions with each switch, refer to P. 300 to 309.**
***3: For outline dimension drawings of individual accessories, refer to P. 34.**
*4: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*5: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*6: Dimensions in ( ) for codes V and D are values for 5 strokes without switch.

● Rod end male thread part

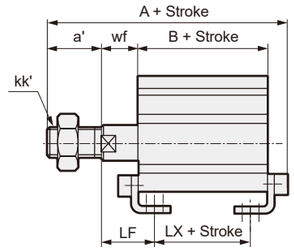
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot (LB)
SSD2-(L)-32 to 100-LB



For rod end male thread



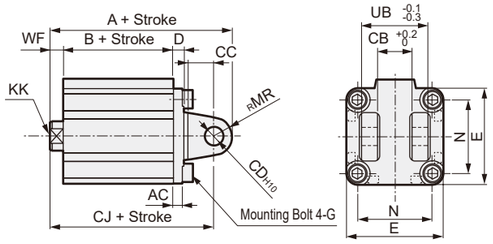
Code	Common dimension															For female thread						
Bore Size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	WF	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX	Dimension without switch A *2	Dimension without switch B *2	Dimension without switch LX *2
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2	17	25	57.2	33	17	47.2 (57.2)	23 (33)	7 (17)
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2	17	25	63.7	39.5	23.5	53.7 (63.7)	29.5 (39.5)	13.5 (23.5)
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2	18	29.5	66.7	40.5	17.5	56.7 (66.7)	30.5 (40.5)	7.5 (17.5)
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2	18	31	73.2	46	20	63.2 (73.2)	36 (46)	10 (20)
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5	20	35	85	53.5	23.5	75 (85)	43.5 (53.5)	13.5 (23.5)
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13	22	39	98	63	29	88 (98)	53 (63)	19 (29)

Code	For male thread									
Bore Size (mm)	a'	kk'	wf	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX	Dimension without switch A *2	Dimension without switch B *2	Dimension without switch LX *2
ø32	23.5	M14 × 1.5	15	23	78.7	33	17	68.7 (78.7)	23 (33)	7 (17)
ø40	23.5	M14 × 1.5	15	23	85.2	39.5	23.5	75.2 (85.2)	29.5 (39.5)	13.5 (23.5)
ø50	28.5	M18 × 1.5	15	26.5	92.2	40.5	17.5	82.2 (92.2)	30.5 (40.5)	7.5 (17.5)
ø63	28.5	M18 × 1.5	15	28	98.7	46	20	88.7 (98.7)	36 (46)	10 (20)
ø80	35.5	M22 × 1.5	18	33	118.5	53.5	23.5	108.5 (118.5)	43.5 (53.5)	13.5 (23.5)
ø100	35.5	M26 × 1.5	18	35	129.5	63	29	119.5 (129.5)	53 (63)	19 (29)

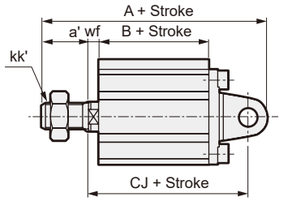
*1: If B + Stroke is less than or equal to the values below, LB cannot be selected. ø80: 72 or less ø100: 69 or less

*2: Dimensions in ( ) are values when exceeding 50 strokes.

● Double Knuckle Clevis (CB)
SSD2-(L)-32 to 100-CB



For rod end male thread



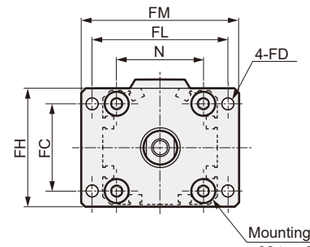
Code	Common dimension											For female thread						
Bore Size (mm)	AC	CB	CC	CD	D	E	G	KK	MR	N	UB	WF	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A *2	Dimension without switch B *2	Dimension without switch CJ
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36	7	70	33	60	60 (70)	23 (33)	50
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36	7	78.5	39.5	68.5	68.5 (78.5)	29.5 (39.5)	58.5
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44	8	90.5	40.5	76.5	80.5 (90.5)	30.5 (40.5)	66.5
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44	8	98	46	84	88 (98)	36 (46)	74
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56	10	119.5	53.5	101.5	109.5 (119.5)	43.5 (53.5)	91.5
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64	12	142	63	120	132 (142)	53 (63)	110

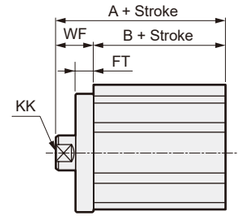
Code	For male thread								
Bore Size (mm)	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A *2	Dimension without switch B *2	Dimension without switch CJ
ø32	23.5	M14 × 1.5	5	91.5	33	58	81.5 (91.5)	23 (33)	48
ø40	23.5	M14 × 1.5	5	100	39.5	66.5	90 (100)	29.5 (39.5)	56.5
ø50	28.5	M18 × 1.5	5	116	40.5	73.5	106 (116)	30.5 (40.5)	63.5
ø63	28.5	M18 × 1.5	5	123.5	46	81	113.5 (123.5)	36 (46)	71
ø80	35.5	M22 × 1.5	8	153	53.5	99.5	143 (153)	43.5 (53.5)	89.5
ø100	35.5	M26 × 1.5	8	173.5	63	116	163.5 (173.5)	53 (63)	106

*2: Dimensions in ( ) are values when exceeding 50 strokes.

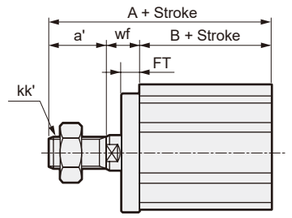
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange (FA)
SSD2-(L)-32 to 100-FA





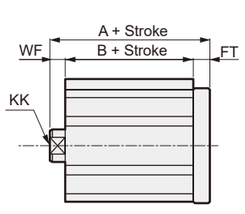
For rod end male thread

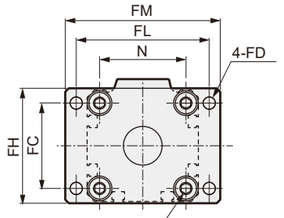


Code	Common dimension									For female thread					For male thread					
Bore Size (mm)	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	17	50	33	40 (50)	23 (33)	23.5	M14 × 1.5	15	71.5	33	61.5 (71.5)	23 (33)
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	17	56.5	39.5	46.5 (56.5)	29.5 (39.5)	23.5	M14 × 1.5	15	78	39.5	68 (78)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	18	58.5	40.5	48.5 (58.5)	30.5 (40.5)	28.5	M18 × 1.5	15	84	40.5	74 (84)	30.5 (40.5)
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	18	64	46	54 (64)	36 (46)	28.5	M18 × 1.5	15	89.5	46	79.5 (89.5)	36 (46)
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21	20	73.5	53.5	63.5 (73.5)	43.5 (53.5)	35.5	M22 × 1.5	18	107	53.5	97 (107)	43.5 (53.5)
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27	22	85	63	75 (85)	53 (63)	35.5	M26 × 1.5	18	116.5	63	106.5 (116.5)	53 (63)

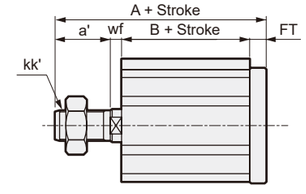
*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Head Side Flange (FB)
SSD2-(L)-32 to 100-FB





For rod end male thread

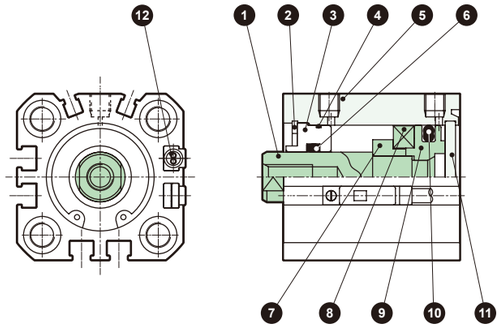


Code	Common dimension									For female thread					For male thread					
Bore Size (mm)	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	7	48	33	38 (48)	23 (33)	23.5	M14 × 1.5	5	69.5	33	59.5 (69.5)	23 (33)
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	7	54.5	39.5	44.5 (54.5)	29.5 (39.5)	23.5	M14 × 1.5	5	76	39.5	66 (76)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	8	57.5	40.5	47.5 (57.5)	30.5 (40.5)	28.5	M18 × 1.5	5	83	40.5	73 (83)	30.5 (40.5)
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	8	63	46	53 (63)	36 (46)	28.5	M18 × 1.5	5	88.5	46	78.5 (88.5)	36 (46)
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21	10	74.5	53.5	64.5 (74.5)	43.5 (53.5)	35.5	M22 × 1.5	8	108	53.5	98 (108)	43.5 (53.5)
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27	12	86	63	76 (86)	53 (63)	35.5	M26 × 1.5	8	117.5	63	107.5 (117.5)	53 (63)

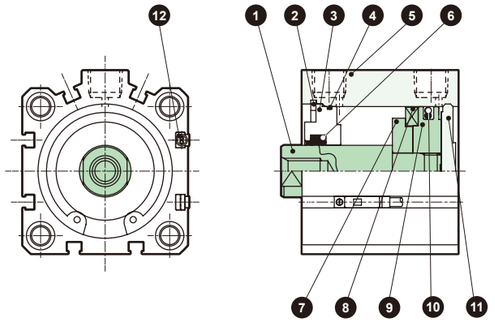
*1: Dimensions in ( ) are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø12 to ø50) (Without Cushion)

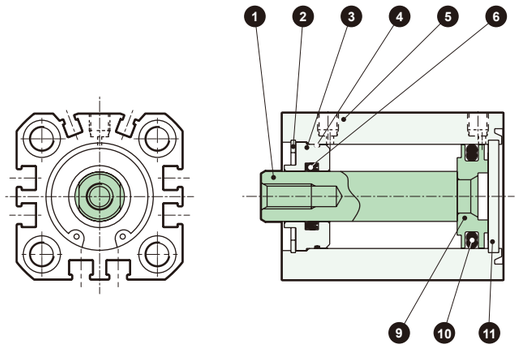
● SSD2-L-12 to 25 (Double Acting Type with Switch)



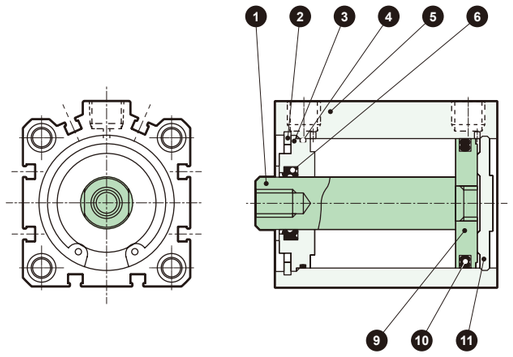
● SSD2-L-32 to 50 (Double Acting Type with Switch)



● SSD2-12 to 25 (Double Acting Type)



● SSD2-32 to 50 (Double Acting Type)



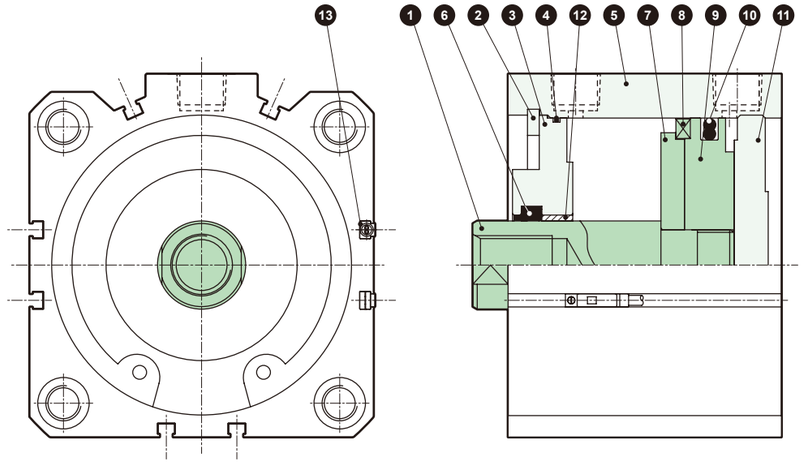
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	ø12 to ø32: Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
With Switch			
12	Switch		

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100) (Without Cushion)

● SSD2-L-63 to 100 (Double Acting Type with Switch)



● SSD2-63 to 100 (Double Acting Type)

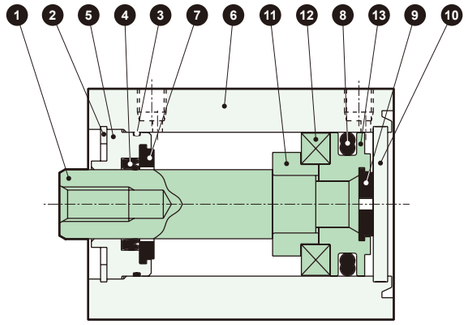
Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
With Switch			
13	Switch		

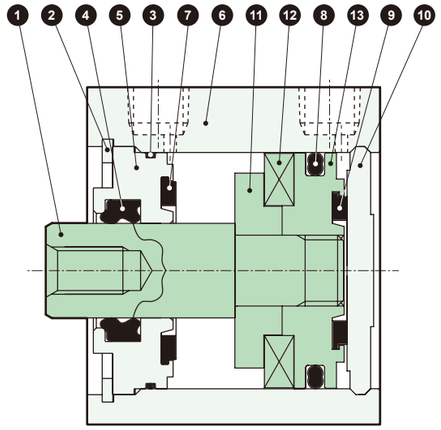
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø12 to ø50) (With Rubber Cushion)

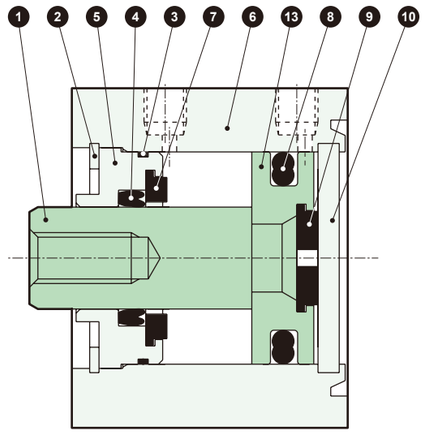
● SSD2-L-12D to 32D (Double Acting Type with Switch)



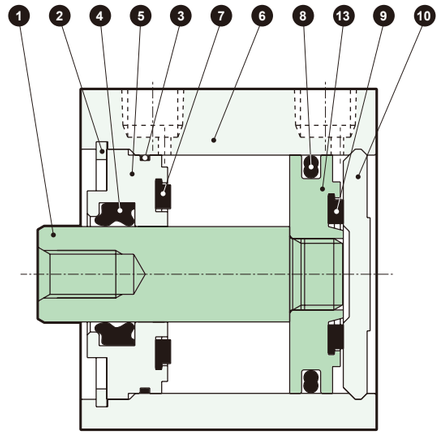
● SSD2-L-40D, 50D (Double Acting Type with Switch)



● SSD2-12D to 32D (Double Acting Type)



● SSD2-40D, 50D (Double Acting Type)

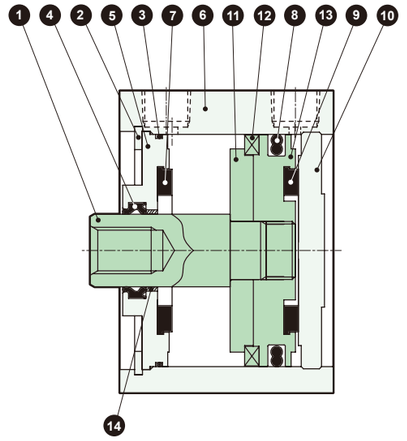


Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Alumite
6	Cylinder Body	Aluminum Alloy	Hard Anodized
7	Cushion rubber (R)	Urethane Rubber	
8	Piston Packing	Nitrile Rubber	
9	Cushion rubber (H)	Urethane Rubber	
10	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
11	Spacer	Aluminum Alloy	ø12 to ø32: Chromate
12	Magnet	Plastic	
13	Piston	Aluminum Alloy	Chromate

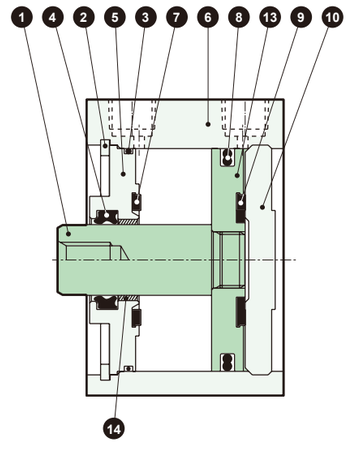
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100) (With Rubber Cushion)

● SSD2-L-63D to 100D (Double Acting Type with Switch)



● SSD2-63D to 100D (Double Acting Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Chromate
6	Cylinder Body	Aluminum Alloy	Hard Anodized
7	Cushion rubber (R)	Urethane Rubber	
8	Piston Packing	Nitrile Rubber	
9	Cushion rubber (H)	Urethane Rubber	
10	Cover	Aluminum Alloy	Alumite
11	Spacer	Aluminum Alloy	
12	Magnet	Plastic	
13	Piston	Aluminum Alloy	Chromate
14	Bushing	Bearing Alloy	

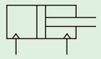
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Single Rod Type (Large Bore)

SSD2 Series

● Bore size: ø125, ø140, ø160, ø180, ø200

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2 - 125 - [ ] - 50 ——— N

① ② ③ ④ ⑦

With Switch (Built-in magnet for switch)

SSD2-L - 200 - [ ] - 100 - T0H - R - N

① ② ③ ④ ⑤ ⑥ ⑦

① Model No. ② Bore Size ③ Piping thread type ④ Stroke ⑤ Switch Model No. ⑥ Number of Switches ⑦ Option

①Model No.

Code	Content
SSD2	Double Acting/Single Rod Type
SSD2-L	Double-acting, Single rod type with switch

②Bore Size (mm)

Code	Content
125	ø125
140	ø140
160	ø160
180	ø180
200	ø200

③Port Thread Type:

Code	Content
Blank	Rc Thread
NN	NPT thread (Custom product) (ø125 to ø160)
GN	G thread (Custom product) (ø125 to ø160)

④Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø125 to ø200	1 to 300	Every 1 mm

Note: Refer to Appendix 1 on the following page for details.

⑤Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20/7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
4: T8 switches cannot be mounted on ø12 to ø32.
*5: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

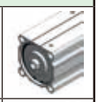
Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

⑥Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑦Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

Appendix Table 1

Stroke (mm)		Applicable Bore ø125	ø140	ø160	ø180	ø200
Standard Stroke	10	●	●	●	●	●
	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
	125	●	●	●	●	●
	150	●	●	●	●	●
	175	●	●	●	●	●
	200	●	●	●	●	●
	250	●	●	●	●	●
	300	●	●	●	●	●
Minimum Stroke (mm) *1		1				
Maximum Stroke (mm)		300				
Intermediate Stroke *2		Every 1 mm				

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches attachable and minimum stroke, refer to P. 28.
*2: The overall length dimension for intermediate stroke will be handled with a length dedicated to intermediate stroke.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-.....-A2

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

SSD2-.....-P7□
SSD2-.....-P5□

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-.....-FP1

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

SSD2-.....-P4□

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW - T0H

⑤

Switch Model No.

Specifications

Item	SSD2 SSD2-L (With Switch)				
Bore size mm	ø125	ø140	ø160	ø180	ø200
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0			0.7	
Min. Operating Pressure MPa	0.05				
Proof pressure MPa	1.6			1.05	
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc3/8			Rc1/2	
Stroke tolerance mm	$^{+2.0}_{0}$				
Operating Piston Speed mm/s	50 to 300			20 to 300	
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	6.52	6.52	7.78	12.4	

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T*	
Number of Switches / Bore Size (mm)	1	2
ø125	5	5
ø140		
ø160		
ø180		
ø200		

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: kg)

Stroke (mm)	10		20		30		40		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	4.58	4.68	4.85	4.95	5.11	5.21	5.38	5.48	5.64	5.74	6.30	6.40	6.97	7.07
ø140	6.36	6.47	6.66	6.77	6.97	7.08	7.27	7.38	7.58	7.69	8.34	8.45	9.10	9.21
ø160	8.64	8.76	9.02	9.14	9.40	9.52	9.78	9.90	10.16	10.28	11.11	11.23	12.06	12.18
ø180	12.98	13.06	13.38	13.46	13.78	13.86	14.18	14.26	14.58	14.66	15.59	15.67	16.59	16.67
ø200	17.23	17.31	17.69	17.77	18.16	18.24	18.62	18.70	19.08	19.16	20.23	20.31	21.39	21.47

Stroke (mm)	125		150		175		200		250		300	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	7.63	7.73	8.30	8.40	8.96	9.06	9.62	9.72	10.95	11.05	12.27	12.37
ø140	9.86	9.97	10.63	10.74	11.39	11.50	12.15	12.26	13.68	13.79	15.20	15.31
ø160	13.01	13.13	13.96	14.08	14.91	15.03	15.86	15.98	17.76	17.88	19.66	19.78
ø180	17.59	17.67	18.59	18.67	19.60	19.68	20.60	20.68	22.60	22.68	24.61	24.69
ø200	22.54	22.62	23.70	23.78	24.85	24.93	26.01	26.09	28.32	28.40	30.63	30.71

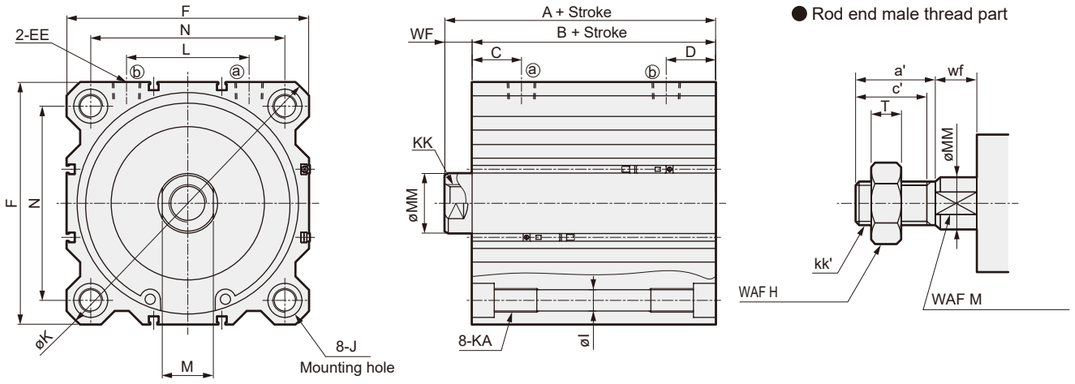
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø125	Push	1.23 × 10³	1.84 × 10³	2.45 × 10³	3.68 × 10³	4.91 × 10³	6.14 × 10³	7.36 × 10³	8.59 × 10³	9.82 × 10³	1.10 × 10⁴	1.23 × 10⁴
	Pull	1.13 × 10³	1.70 × 10⁴	2.26 × 10²	3.39×10³	4.52 × 10³	5.65 × 10³	6.79×10³	7.92×10³	9.05 × 10²	1.02 × 10⁴	1.13 × 10⁴
ø140	Push	1.54 × 10³	2.31 × 10³	3.08 × 10³	4.62 × 10³	6.16 × 10³	7.70 × 10³	9.24 × 10³	1.08 × 10⁴	1.23 × 10⁴	1.39 × 10⁴	1.54 × 10⁴
	Pull	1.44×10³	2.16×10³	2.89×10³	4.33×10³	5.77×10³	7.22×10³	8.66×10³	1.01 × 10⁴	1.15 × 10⁴	1.30×10⁴	1.44×10⁴
ø160	Push	2.01 × 10³	3.02 × 10³	4.02 × 10³	6.03 × 10³	8.04 × 10⁴	1.01 × 10⁴	1.21 × 10⁴	1.41 × 10⁴	1.61 × 10⁴	1.81 × 10⁴	2.01 × 10⁴
	Pull	1.88 × 10³	2.83 × 10³	3.77 × 10³	5.65 × 10³	7.54 × 10³	9.42 × 10³	1.13 × 10⁴	1.32 × 10⁴	1.51 × 10⁴	1.70 × 10⁴	1.88 × 10⁴
ø180	Push	2.54 × 10³	3.82 × 10³	5.09 × 10³	7.63 × 10³	1.02 × 10⁴	1.27 × 10⁴	1.53 × 10⁴	1.78 × 10⁴	-	-	-
	Pull	2.39 × 10³	3.58 × 10³	4.77 × 10³	7.16 × 10³	9.54 × 10³	1.19 × 10⁴	1.43 × 10⁴	1.67 × 10⁴	-	-	-
ø200	Push	3.14 × 10³	4.71 × 10³	6.28 × 10³	9.43×10³	1.26 × 10⁴	1.57 × 10⁴	1.89 × 10²	2.20 × 10⁴	-	-	-
	Pull	3.02 × 10³	4.52 × 10³	6.03 × 10³	9.05 × 10²	1.21 × 10⁴	1.51 × 10⁴	1.81 × 10⁴	2.11 × 10²	-	-	-

Outline Dimension Drawing (Bore size: ø125 to ø160)

● SSD2-(L)-125 to 160



Code / Bore Size (mm)	A	B	C	D	EE	F	I	J	K	KA	KK	L	M	MM	N	WF
ø125	99	83	29	29	Rc3/8	142	12.5	20 Counterbore Depth 13	190	M14 depth 25	M22 depth 30	72	30	35	114	16
ø140	99	83	27.5	27.5	Rc3/8	158	12.5	20 Counterbore Depth 13	210	M14 depth 25	M22 depth 30	80	30	35	128	16
ø160	108	91	30	30	Rc3/8	178	14.7	23 Counterbore depth 15.2	238	M16 depth 28	M24 depth 33	90	36	40	144	17

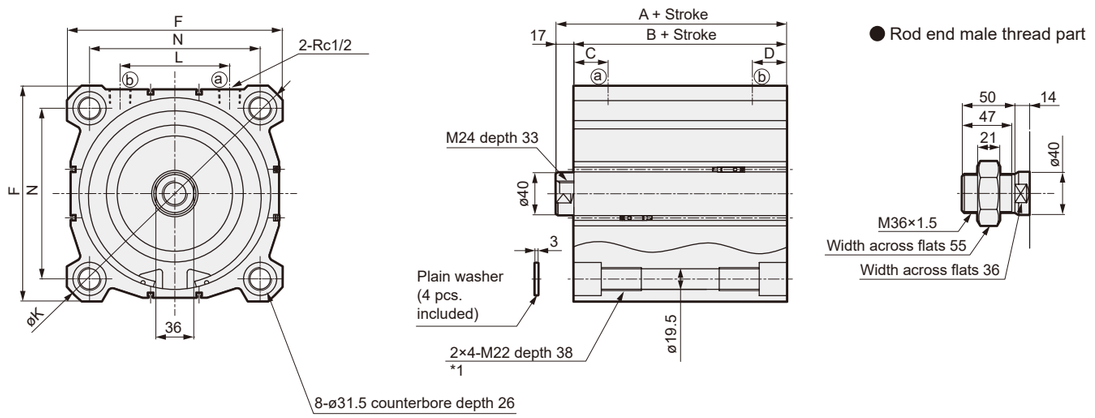
***1: For dimensions with each switch, refer to P. 300 to 309.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø125	45	42	46	M30 × 1.5	30	35	18	13
ø140	45	42	46	M30 × 1.5	30	35	18	13
ø160	50	47	55	M36 × 1.5	36	40	21	14

Outline Dimension Drawing (Bore size: ø180, ø200)

● SSD2-(L)-180, 200

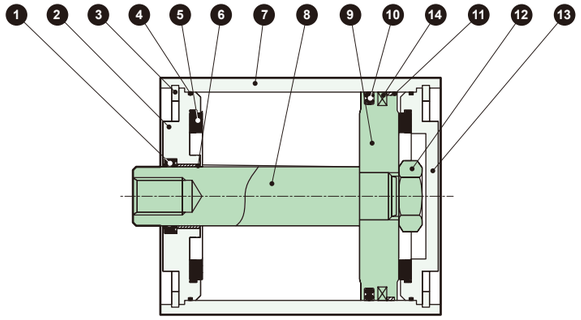


Code / Bore Size (mm)	A	B	C	D	F	K	L	N
ø180	119	102	32.5	32.5	204	270	104	162
ø200	126	109	33.5	33.5	226	300	110	182

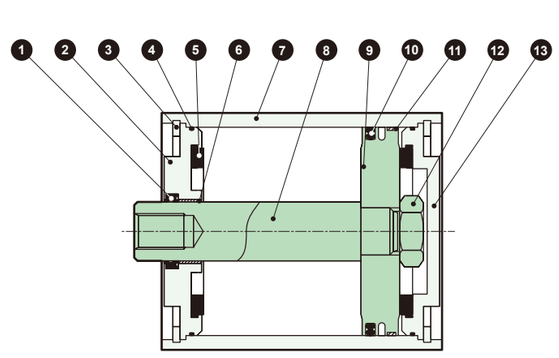
*1: For 20 strokes or less, it will be 2×4-M22 through-hole.
***2: For dimensions with each switch, refer to P. 300 to 309.**

Internal Structure Diagram/Material (Bore size: ø125 to ø160) (With Cushion)

● SSD2-L-ø125 to ø160 (Double Acting with Switch)



● SSD2-125 to 160 (Double Acting without Switch)

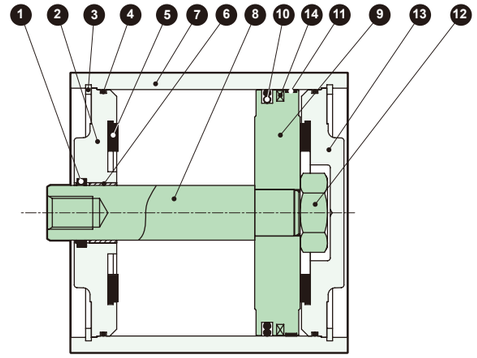


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		8	Piston Rod	Steel	Industrial Hard Chrome Plating
2	Rod Metal	Aluminum Alloy	Chromate	9	Piston	Aluminum Alloy	
3	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
4	Gasket	Nitrile Rubber		11	Wear Ring	Polyacetal	
5	Cushion Rubber	Urethane Rubber		12	Hexagon Nut	Steel	Zinc Chromate
6	Bushing	Bearing Alloy		13	Cover	Aluminum Alloy	Chromate
7	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Magnet	Rubber	With switch only

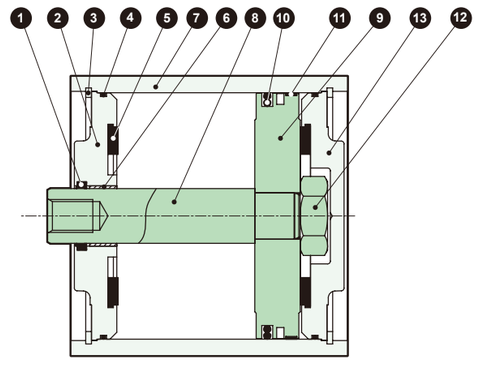
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø180, ø200)

● SSD2-L-180, 200 (Double Acting, Single Rod Type with Switch)



● SSD2-180, 200 (Double Acting, Single Rod Type without Switch)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		8	Piston Rod	Steel	Industrial Hard Chrome Plating
2	Rod Metal	Cast Iron	Painting	9	Piston	Aluminum Alloy	
3	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
4	Gasket	Nitrile Rubber		11	Wear Ring	Polyacetal	
5	Cushion Rubber	Urethane Rubber		12	Hexagon Nut	Steel	Zinc Chromate
6	Bushing	Bearing Alloy		13	Cover	Cast Iron	Painting
7	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Magnet	Rubber	With switch only

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

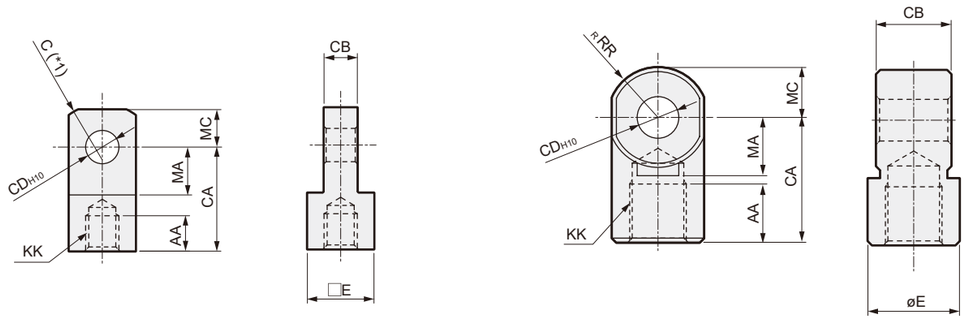
Accessories Outline Dimension Drawing

● Single Knuckle (I)
· ø12 to ø25

Material: Steel
Zinc chromate treatment

· ø32 to ø100

Material: Cast Iron
Paint treatment



Model No.	Applicable Bore	AA	CA	CB	CD	E	KK	MA	C	RR	MC	Weight (g)
SSD2-I-12	ø12	6	16	5 $^{-0.2}_{-0.4}$	5	□10	M5×0.8	7	2	-	5.5	9
SSD2-I-16	ø16	8	25	6.5 $^{-0.2}_{-0.4}$	5	□12	M6×1	14	2	-	7	21
SSD2-I-20	ø20	8.5	25	8 $^{-0.2}_{-0.4}$	8	□16	M8×1.25	11.5	-	13.4	9	38
SSD2-I-25	ø25	10.5	30	10 $^{-0.2}_{-0.4}$	10	□20	M10 × 1.25	14	-	17.1	11	71
SSD2-I-32	ø32, ø40	14	30	18 $^{-0.3}_{-0.5}$	10	ø22	M14 × 1.5	14	-	12	12	74
SSD2-I-50	ø50, ø63	18	40	22 $^{-0.3}_{-0.5}$	14	ø28	M18 × 1.5	20	-	16	16	155
SSD2-I-80	ø80	21	50	28 $^{-0.3}_{-0.5}$	18	ø38	M22 × 1.5	27	-	21	21	380
SSD2-I-100	ø100	21	55	32 $^{-0.3}_{-0.5}$	22	ø44	M26 × 1.5	31	-	24	24	550

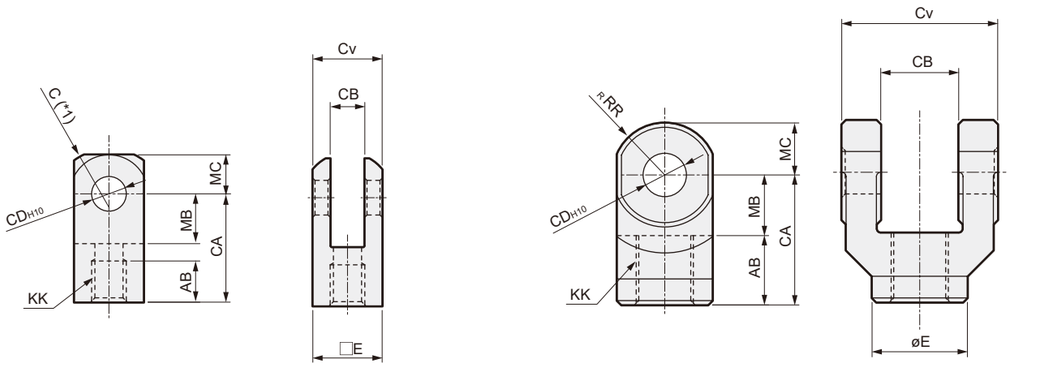
*1: ø20/25 is SR RR
*2: Accessories for SSD2 have the same dimensions as accessories for SSD compact type. When checking with Pneumatic Cylinder ② (No. RJ-003AA), please be careful not to make a mistake.
(Example SSD2-I-32 is the same dimensions as SSD-I2-32.)

● Double Knuckle (Y)
· ø12 to ø25

Material: Steel
Zinc chromate treatment

· ø32 to ø100

Material: Cast Iron
Paint treatment



Model No.	Applicable Bore	AB	CA	CB	CD	Cv	E	KK	MB	C	RR	MC	Weight (g)
SSD2-Y-12	ø12	6	16	5 $^{+0.4}_{+0.2}$	5	10	□10	M5×0.8	7	2	-	5.5	12
SSD2-Y-16	ø16	11	21	6.5 $^{+0.4}_{+0.2}$	5	12	□12	M6×1	10	2	-	7	20
SSD2-Y-20	ø20	13.5	25	8 $^{+0.4}_{+0.2}$	8	16	□16	M8×1.25	11.5	-	13.4	9	45
SSD2-Y-25	ø25	16	30	10 $^{+0.4}_{+0.2}$	10	20	□20	M10 × 1.25	14	-	17.1	11	84
SSD2-Y-32	ø32, ø40	16	30	18 $^{+0.5}_{+0.3}$	10	36	ø22	M14 × 1.5	14	-	12	12	120
SSD2-Y-50	ø50, ø63	20	40	22 $^{+0.5}_{+0.3}$	14	44	ø28	M18 × 1.5	20	-	16	16	257
SSD2-Y-80	ø80	23	50	28 $^{+0.5}_{+0.3}$	18	56	ø38	M22 × 1.5	27	-	21	21	589
SSD2-Y-100	ø100	24	55	32 $^{+0.5}_{+0.3}$	22	64	ø44	M26 × 1.5	31	-	24	24	933

*1: ø20/25 is SR RR
*2: Pins and retaining rings are included.
*3: Pins for double knuckle are common with pins for double clevis.
*4: Accessories for SSD2 have the same dimensions as accessories for SSD compact type. When checking with Pneumatic Cylinder ② (No. RJ-003AA), please be careful not to make a mistake.
(Example SSD2-Y-32 is the same dimensions as SSD-Y2-32.)

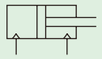
MEMO



Compact Cylinder Double Acting, Single Rod, High Load Type

SSD2-K Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-K - 12 - ( ) - 10 ——— N - LB - I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch (Built-in magnet for switch)

SSD2-KL - 12 - ( ) - 10 - T0H - R - N - LB - I

Model No. ❶ Bore Size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting type ❽ Accessories

❶Bore Size (mm)

Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

❷Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 10.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
*10 5	5 m (Option)
*9 W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 41, 42, 44, 45. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	
S	Dedicated body for intermediate stroke	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❽Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❻Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 38.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3: For minimum stroke for ❼ mounting type LB, refer to P. 41, 44.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-K-..... -XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)
● Food grade lubricant usable in food manufacturing processes
SSD2-K-..... -FP1

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)
● Structure usable in rechargeable battery manufacturing processes
SSD2-K-..... -P4□
*Please contact us for details.

Oil-free Specification (Catalog No. RJ-001AA)
● Grease scatter prevention structure
SSD2-K-..... -P12

Switch Single Unit Model No. Notation Method

SW - T0H
❹ Switch Model No.

Specifications

Item	SSD2-K SSD2-KL (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Maximum operating pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
Port Size	M5				Rc1/8		Rc1/4		Rc3/8	
Stroke Tolerance mm	+2.0 0									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	Rubber Cushion									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Minimum Stroke with Switch (With 1 or 2 Switches)

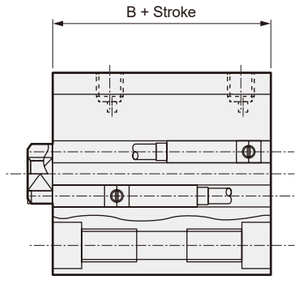
Tube I.D. (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	20
ø16			
ø20	5		15
ø25			
ø32			
ø40			10
ø50			
ø63			
ø80			
ø100			

1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1, T8* switch.
*2: () indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-K Series

Item	Standard Product		Optional Product	
	Spacer type on standard stroke body		Dedicated Body Type (-S)	
Model number indication	Refer to model number indication method.		Indicates the "Option" symbol -S in the model number indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.		A dedicated body is manufactured for the specified stroke	
Stroke Range	Tube I.D.	Stroke Range	Tube I.D.	Stroke Range
	12, 16	1 to 29	12, 16	6 to 29
	20 to 25	1 to 49	20, 25	6 to 49
	32 to 100	1 to 99	32 to 100	11 to 99
Model Number Indication Example	Model No.: SSD2-K-32-41 A +4 mm spacer is added to the standard cylinder SSD2-K-32-45 to make it 41 mm. B + Stroke = 33 + 45 = 78		Model No.: SSD2-K-32-41-S A dedicated body for 41 stroke is manufactured. B + Stroke = 33 + 41 = 74	



Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02 × 10⁴	1.13 × 10²
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01 × 10²	1.21 × 10²	1.41 × 10²	1.61 × 10²	1.81 × 10²	2.01 × 10²
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06 × 10²	1.21 × 10²	1.36 × 10³	1.51 × 10²
ø20	Push	-	31.4	47.1	62.8	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²	2.51 × 10²	2.83 × 10²	3.14 × 10²
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²	1.88 × 10²	2.12 × 10²	2.36 × 10²
ø25	Push	-	49.1k	73.6	98.2	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²	3.93 × 10²	4.42 × 10²	4.91 × 10²
	Pull	-	37.8	56.7	75.6	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²	3.02 × 10²	3.40 × 10²	3.78 × 10²
ø32	Push	-	80.4	1.21 × 10²	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²	6.43 × 10²	7.24 × 10²	8.04 × 10²
	Pull	-	60.3	90.5	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62×10²	4.22 × 10²	4.83 × 10²	5.43×10²	6.03 × 10³
ø40	Push	-	1.26 × 10²	1.88 × 10²	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²	1.01 × 10³	1.13 × 10³	1.26 × 10³
	Pull	-	1.06 × 10²	1.58 × 10²	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²	8.44 × 10²	9.50 × 10²	1.06 × 10³
ø50	Push	-	1.96 × 10²	2.95 × 10²	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³	1.57 × 10³	1.77 × 10³	1.96 × 10³
	Pull	-	1.65 × 10²	2.47 × 10²	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³	1.32 × 10³	1.48 × 10³	1.65 × 10³
ø63	Push	1.56 × 10²	3.12 × 10²	4.68 × 10²	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³	2.49 × 10³	2.81 × 10³	3.12 × 10³
	Pull	1.40 × 10²	2.80 × 10²	4.20 × 10²	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³	2.24 × 10³	2.52 × 10³	2.80 × 10³
ø80	Push	2.51 × 10²	5.03 × 10²	7.54 × 10²	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³	4.02 × 10³	4.52 × 10³	5.03 × 10³
	Pull	2.27 × 10²	4.54 × 10²	6.80 × 10²	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³	3.63 × 10³	4.08 × 10³	4.54 × 10³
ø100	Push	3.93 × 10²	7.85 × 10²	1.18 × 10³	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³	6.28 × 10³	7.07 × 10³	7.85 × 10³
	Pull	3.57 × 10²	7.15 × 10²	1.07 × 10³	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³	5.72 × 10³	6.43 × 10³	7.15 × 10³

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	44	86	53	95	61	103	70	112	78	121	87	129	-	-	-	-	-	-	-	-	-	-	-	-
ø16	59	104	69	114	80	125	91	136	102	147	113	158	-	-	-	-	-	-	-	-	-	-	-	-
ø20	75	150	88	163	101	176	113	188	126	201	138	213	151	226	163	238	176	251	188	263	-	-	-	-
ø25	102	193	118	209	134	225	150	241	165	256	182	273	198	289	214	305	230	321	246	337	-	-	-	-
ø32	167	281	188	302	209	323	231	345	253	367	275	389	297	411	318	432	340	454	361	475	534	583	642	690
ø40	236	379	263	406	290	433	316	459	342	485	369	512	396	539	422	565	449	592	475	618	702	751	834	883
ø50	-	-	425	619	467	661	510	704	553	747	594	788	636	830	678	872	720	914	762	956	1109	1166	1319	1376
ø63	-	-	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1003	1282	1058	1337	1548	1612	1823	1887
ø80	-	-	1101	1514	1188	1601	1274	1687	1361	1774	1448	1861	1535	1948	1621	2034	1708	2121	1794	2207	2574	2640	3006	3072
ø100	-	-	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	2457	3024	2571	3138	3636	3708	4206	4278

Mounting Bracket Model No. Display Method

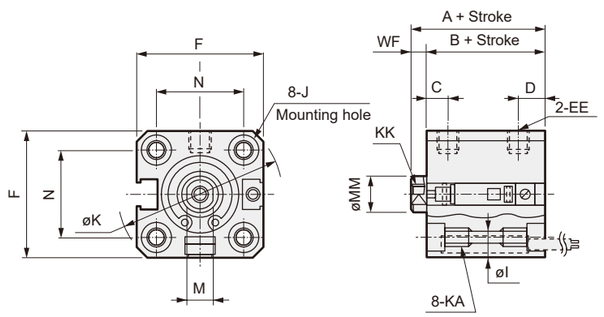
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

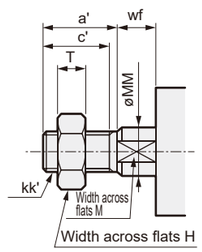
Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD2-K(L)-12 to 25

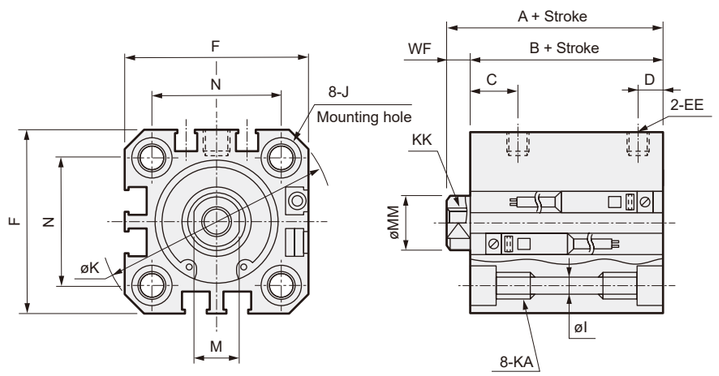
ø12, ø16



● Rod end male thread part



ø20, ø25



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	30.5	27	25.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	30.5	27	25.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	39	34.5	29	24.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	42.5	37.5	32.5	27.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

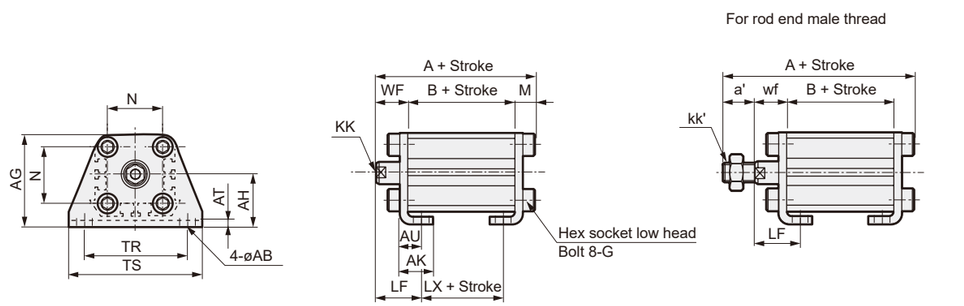
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
For ø16: A (30.5) + Stroke (10) = 40.5 B (27) + Stroke (10) = 37
If the dedicated body "S" for intermediate stroke is selected, enter the intermediate stroke value of 7 mm as is for calculation.
For ø16: A (30.5) + Stroke (7) = 37.5 B (27) + Stroke (7) = 34
*2: For tube bores ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to P. 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø12 to ø25)

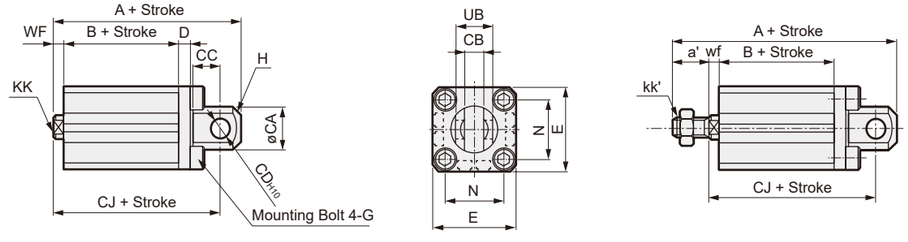
● Axial Foot (LB)
SSD2-K(L)-12 to 25-LB



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	N	TR	TS	KK	M	For female thread WF	LF
ø12	5	29.5	17	12.5	2	8	M4×10	15.5	34	44	M3 depth 6	4.8	13.5	19.5
ø16	5	33.5	19	13	2	8	M4×10	20	38	48	M4 depth 8	4.8	13.5	19.5
ø20	7	42	24	15	3.2	9.2	M6×16	25.5	48	62	M5 depth 7	7.2	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	M6×16	28	52	66	M6 Depth 12	7.2	15	22.5

Code / Bore Size (mm)	For male thread: Dimension with switch A	B	LX	Dimension without switch A	B	LX	a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø12	45.3	27	15	40.3	22	10	10.5	M5	13.5	19.5	55.8	27	15	50.8	22	10
ø16	45.3	27	15	40.3	22	10	12	M6	13.5	19.5	57.3	27	15	52.3	22	10
ø20	56.2	34.5	22.5	46.2	24.5	12.5	14	M8	14.5	20.5	70.2	34.5	22.5	60.2	24.5	12.5
ø25	59.7	37.5	22.5	49.7	27.5	12.5	17.5	M10 × 1.25	15	22.5	77.2	37.5	22.5	67.2	27.5	12.5

● Double Knuckle Clevis (CB)
SSD2-K(L)-12 to 25-CB

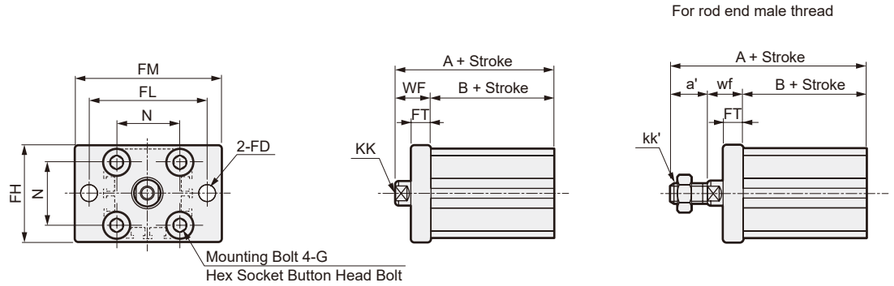


Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	G	H	KK	N	UB
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	C1.5	M3 depth 6	15.5	$10^{-0.1}_{-0.3}$
ø16	15	$6.6^{+0.2}_{0}$	8	5	5	29	M4×12	C2	M4 depth 8	20	$12^{-0.1}_{-0.4}$
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	C4	M5 depth 7	25.5	$16^{-0.1}_{-0.3}$
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	C5	M6 Depth 12	28	$20^{-0.1}_{-0.3}$

Code / Bore Size (mm)	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ
ø12	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	3.5	61	27	44.5	56	22	39.5
ø16	3.5	51.5	27	44.5	46.5	22	40.5	12	M6	3.5	63.5	27	45.5	58.5	22	40.5
ø20	4.5	66	34.5	57	56	24.5	47	14	M8	4.5	80	34.5	57	70	24.5	47
ø25	5	72.5	37.5	62.5	62.5	27.5	52.5	17.5	M10 × 1.25	5	90	37.5	62.5	80	27.5	52.5

Outline Dimension Drawing (Bore size: ø12 to ø25)

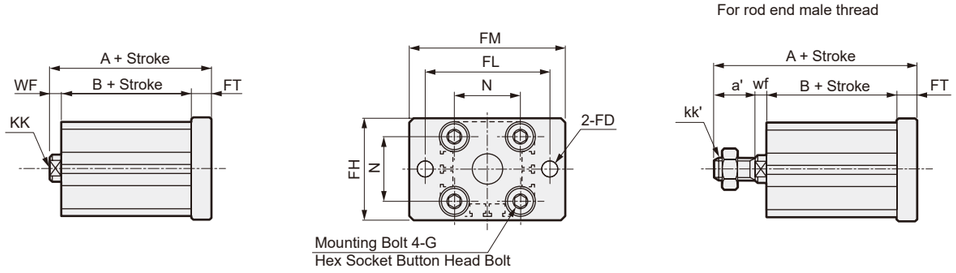
● Rod Side Flange (FA) With Switch
SSD2-K(L)-12 to 25-FA



Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

Code / Bore Size (mm)	For female thread					For male thread						
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø12	13.5	40.5	27	35.5	22	10.5	M5	13.5	51	27	46	22
ø16	13.5	40.5	27	35.5	22	12	M6	13.5	52.5	27	47.5	22
ø20	14.5	49	34.5	39	24.5	14	M8	14.5	63	34.5	53	24.5
ø25	15	52.5	37.5	42.5	27.5	17.5	M10 × 1.25	15	70	37.5	60	27.5

● Head Side Flange (FB) With Switch
SSD2-K(L)-12 to 25-FB

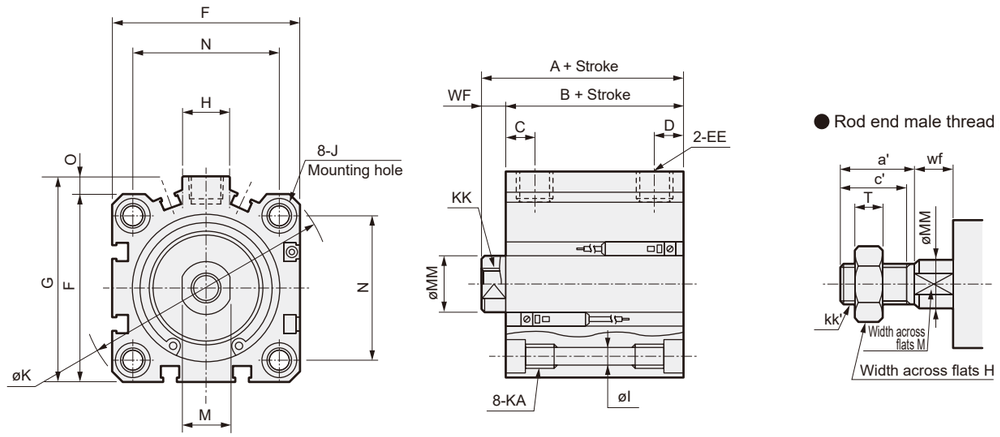


Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

Code / Bore Size (mm)	For female thread					For male thread						
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø12	3.5	36	27	31	22	10.5	M5	3.5	46.5	22	41.5	22
ø16	3.5	36	27	31	22	12	M6	3.5	48	22	43	22
ø20	4.5	47	34.5	37	24.5	14	M8	4.5	61	29.5	51	24.5
ø25	5	50.5	37.5	40.5	27.5	17.5	M10 × 1.25	5	68	32.5	58	27.5

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-K(L)-32 to 100



Code / Bore Size (mm)	Dimension with switch		Dimension without switch		Common dimension						
	A *1	B *1	A *1, *4	B *1, *4	C	D	EE	F	G	H	I
ø32	50	43	40 (50)	33 (43)	8	8	Rc1/8	45	49.5	12.5	5.5
ø40	56.5	49.5	46.5 (56.5)	39.5 (49.5)	12	8.5	Rc1/8	52	57	15	5.5
ø50	58.5	50.5	48.5 (58.5)	40.5 (50.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	64	56	54 (64)	46 (56)	13	11	Rc1/4	77	84	23	8.7
ø80	73.5	63.5	63.5 (73.5)	53.5 (63.5)	16	13	Rc3/8	98	104	31	10.5
ø100	85	73	75 (85)	63 (73)	23	15	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	J	K	KA	KK	M	MM	N	O	WF
ø32	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

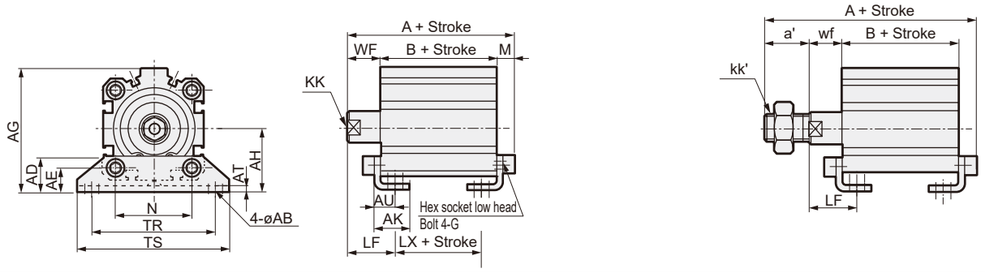
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For SSD2-KL-32-7, when the intermediate stroke is 7 mm, enter the standard stroke of 10 mm for calculation.
・For ø32 A + Stroke = 50 + 10 = 60 B + Stroke = 43 + 10 = 53
If the dedicated body "S" for intermediate stroke is selected, enter the intermediate stroke value of 7 mm as is for calculation.
・For ø32 A + Stroke = 50 + 7 = 57 B + Stroke = 43 + 7 = 50
*2: Dimensions in () for symbols A and B are values when exceeding 50 strokes.
***3: For dimensions with each switch, refer to P. 300 to P. 309.**
***4: For outline dimension drawings with accessories and outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot (LB) With Switch
SSD2-K(L)-32 to 100-LB



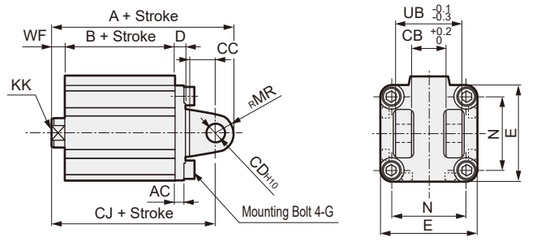
For rod end male thread

Code / Bore Size (mm)	Common dimension														For female thread				
	AB	AD	AE	AG	AH	AK	AT	AU	G	N	TR	TS	KK	M	WF	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	34	57	71	M8 depth 13	7.2	17	25	67.2	43	27
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	40	64	78	M8 depth 13	7.2	17	25	73.7	49.5	33.5
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	50	79	95	M10 depth 15	8.2	18	29.5	76.7	50.5	27.5
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	60	95	113	M10 depth 15	9.2	18	31	83.2	56	30
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	77	118	140	M16 depth 21	11.5	20	35	95	63.5	33.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	94	137	162	M20 depth 27	13	22	39	108	73	39

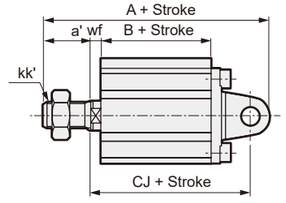
Code / Bore Size (mm)	For male thread												
	Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
	A *2	B *2	LX *2					A	B	LX	A *2	B *2	LX *2
ø32	57.2 (67.2)	33 (43)	17 (27)	23.5	M14 × 1.5	15	23	88.7	43	27	78.7 (88.7)	33 (43)	17 (27)
ø40	63.7 (73.7)	39.5 (49.5)	23.5 (33.5)	23.5	M14 × 1.5	15	23	95.2	49.5	33.5	85.2 (95.2)	39.5 (49.5)	23.5 (33.5)
ø50	66.7 (76.7)	40.5 (50.5)	17.5 (27.5)	28.5	M18 × 1.5	15	26.5	102.2	50.5	27.5	92.2 (102.2)	40.5 (50.5)	17.5 (27.5)
ø63	73.2 (83.2)	46 (56)	20 (30)	28.5	M18 × 1.5	15	28	108.7	56	30	98.7 (108.7)	46 (56)	20 (30)
ø80	85 (95)	53.5 (63.5)	23.5 (33.5)	35.5	M22 × 1.5	18	33	128.5	63.5	33.5	118.5 (128.5)	53.5 (63.5)	23.5 (33.5)
ø100	98 (108)	63 (73)	29 (39)	35.5	M26 × 1.5	18	35	139.5	73	39	129.5 (139.5)	63 (73)	29 (39)

*1: ø80: LB cannot be selected for 15 strokes or less without switch.
*2: Dimensions in () are values when exceeding 50 strokes.

● Double Knuckle Clevis (CB) With Switch
SSD2-K(L)-32 to 100-CB



For rod end male thread



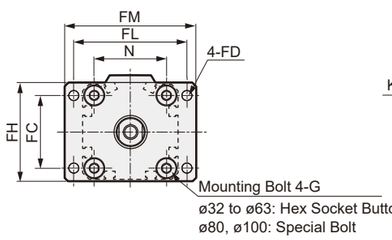
Code / Bore Size (mm)	Common dimension											For female thread			
	AC	CB	CC	CD	D	E	G	MR	KK	N	UB	WF	Dimension with switch A	Dimension with switch B	Dimension with switch CJ
ø32	4.5	18.2	14	10	5	45	M6×16	10	M8 depth 13	34	36	7	80	43	70
ø40	5	18.2	14	10	6	52	M6×16	10	M8 depth 13	40	36	7	88.5	49.5	78.5
ø50	6	22.2	20	14	7	64	M8×20	14	M10 depth 15	50	44	8	100.5	50.5	86.5
ø63	7	22.2	20	14	8	77	M10×25	14	M10 depth 15	60	44	8	108	56	94
ø80	9	28.2	27	18	10	98	M12×40	18	M16 depth 21	77	56	10	129.5	63.5	111.5
ø100	12	32.2	31	22	13	117	M12×40	22	M20 depth 27	94	64	12	152	73	130

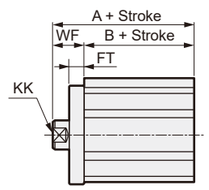
Code / Bore Size (mm)	For male thread											
	Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
	A *2	B *2	CJ				A	B	CJ	A *2	B *2	CJ
ø32	70 (80)	33 (43)	60	23.5	M14 × 1.5	5	101.5	43	68	91.5 (101.5)	33 (43)	58
ø40	78.5 (88.5)	39.5 (49.5)	68.5	23.5	M14 × 1.5	5	110	49.5	76.5	100 (110)	39.5 (49.5)	66.5
ø50	90.5 (100.5)	40.5 (50.5)	76.5	28.5	M18 × 1.5	5	126	50.5	83.5	116 (126)	40.5 (50.5)	73.5
ø63	98 (108)	46 (56)	84	28.5	M18 × 1.5	5	133.5	56	91	123.5 (133.5)	46 (56)	81
ø80	119.5 (129.5)	53.5 (63.5)	101.5	35.5	M22 × 1.5	8	163	63.5	109.5	153 (163)	53.5 (63.5)	99.5
ø100	142 (152)	63 (73)	120	35.5	M26 × 1.5	8	183.5	73	126	173.5 (183.5)	63 (73)	116

*1: Pin and retaining ring are included.
*2: Dimensions in () are values when exceeding 50 strokes.

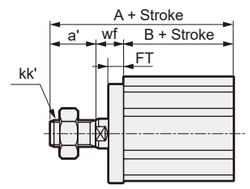
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange (FA) With Switch
SSD2-K(L)-32 to 100-FA





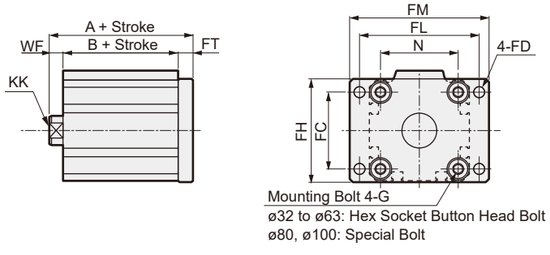
For rod end male thread



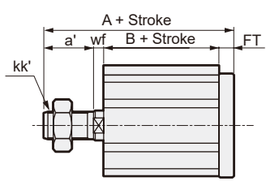
Code / Bore Size (mm)	Common dimension									For female thread					For male thread					
	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	17	60	43	50 (60)	33 (43)	23.5	M14 × 1.5	15	81.5	43	71.5 (81.59)	33 (43)
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	17	66.5	49.5	56.5 (66.5)	39.5 (49.5)	23.5	M14 × 1.5	15	88	49.5	78 (88)	39.5 (49.5)
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	18	68.5	50.5	58.5 (68.5)	40.5 (50.5)	28.5	M18 × 1.5	15	94	50.5	84 (94)	40.5 (50.5)
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	18	74	56	64 (74)	46 (56)	28.5	M18 × 1.5	15	99.5	56	89.5 (99.5)	46 (56)
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21	20	83.5	63.5	73.5 (83.5)	53.5 (63.5)	35.5	M22 × 1.5	18	117	63.5	107 (117)	53.5 (63.5)
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27	22	95	73	85 (95)	63 (73)	35.5	M26 × 1.5	18	126.5	73	116.5 (126.5)	63 (73)

*1: Dimensions in () are values when exceeding 50 strokes.

● Head Side Flange (FB) With Switch
SSD2-K(L)-32 to 100-FB



For rod end male thread

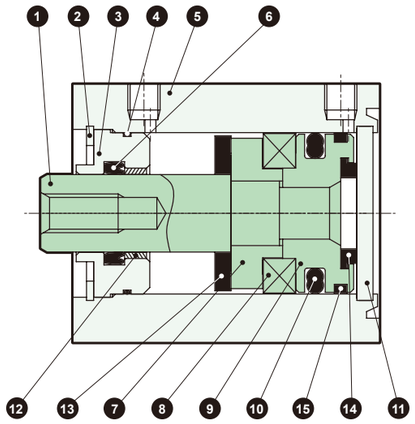


Code / Bore Size (mm)	Common dimension									For female thread					For male thread					
	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	7	58	43	48 (58)	33 (43)	23.5	M14 × 1.5	5	79.5	43	69.5 (79.5)	33 (43)
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	7	64.5	49.5	54.5 (64.5)	39.5 (49.5)	23.5	M14 × 1.5	5	86	49.5	76 (86)	39.5 (49.5)
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	8	67.5	50.5	57.5 (67.5)	40.5 (50.5)	28.5	M18 × 1.5	5	93	50.5	83 (93)	40.5 (50.5)
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	8	73	56	63 (73)	46 (56)	28.5	M18 × 1.5	5	98.5	56	88.5 (98.5)	46 (56)
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21	10	84.5	63.5	74.5 (84.5)	53.5 (63.5)	35.5	M22 × 1.5	8	118	63.5	108 (118)	53.5 (63.5)
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27	12	96	73	86 (96)	63 (73)	35.5	M26 × 1.5	8	127.5	73	117.5 (127.5)	63 (73)

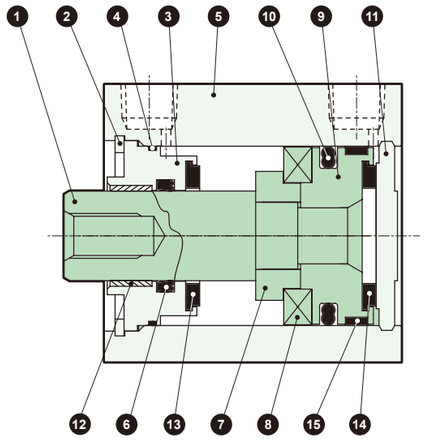
*1: Dimensions in () are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø12 to ø32)

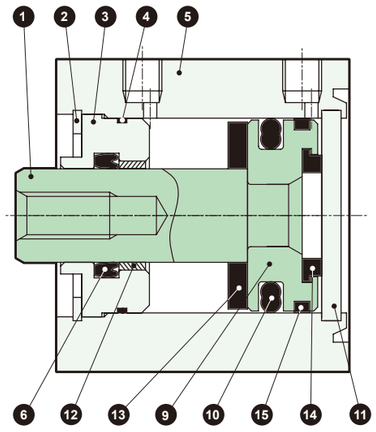
● SSD2-KL-12 to 25 (Double Acting, High Load Type, With Switch)



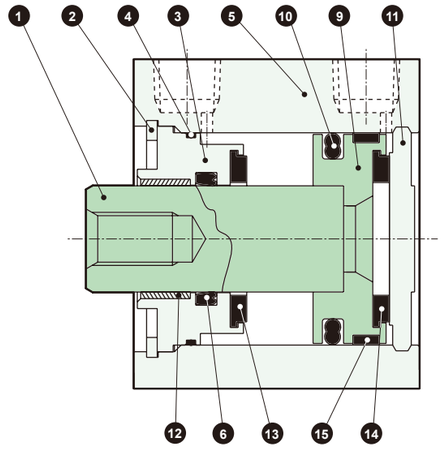
● SSD2-KL-32 (Double Acting, High Load Type, With Switch)



● SSD2-K-12 to 25 (Double Acting, High Load Type)



● SSD2-K-32 (Double Acting, High Load Type)

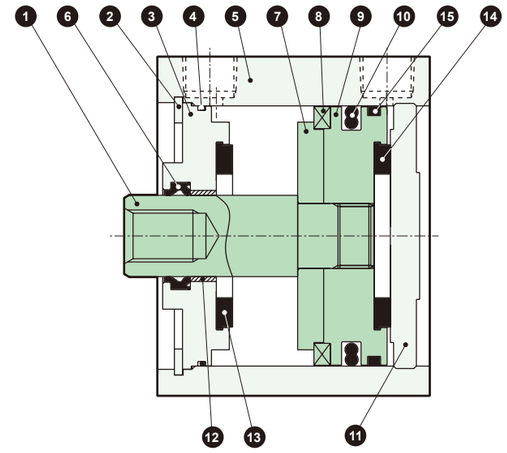


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32: Steel	ø16 to ø32 Industrial Hard Chrome Plating	8	Magnet	Plastic	
				9	Piston	Aluminum Alloy	Chromate
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Aluminum Alloy	ø12 to ø25: Alumite ø32: Chromate treatment	11	Cover	ø12 to ø25: Stainless steel ø32: Aluminum alloy	ø32: Alumite
4	Rod metal gasket	Nitrile Rubber		12	Bushing	Bearing Alloy	ø20 to ø32 only
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Cushion rubber (R)	Urethane Rubber	
6	Rod Packing	Nitrile Rubber		14	Cushion rubber (H)	Urethane Rubber	
7	Spacer	Aluminum Alloy	Chromate	15	Wear Ring	Polyacetal	

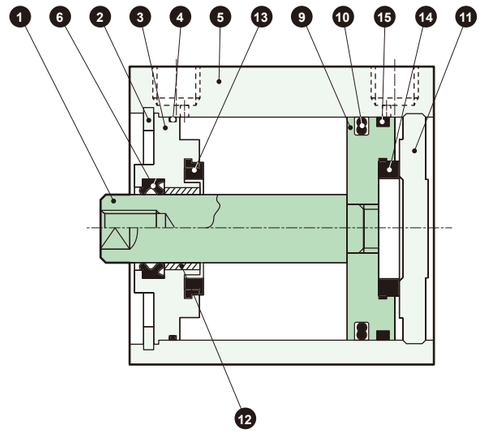
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø40 to ø100)

● SSD2-KL-40 to 100 (Double Acting, High Load Type, With Switch)



● SSD2-K-40 to 100 (Double Acting, High Load Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	ø40, ø50: Chromate treatment ø63 to ø100: Alumite	10	Piston Packing	Nitrile Rubber	
				11	Cover	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber		12	Bushing	Bearing Alloy	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Cushion rubber (R)	Urethane Rubber	
6	Rod Packing	Nitrile Rubber		14	Cushion rubber (H)	Urethane Rubber	
7	Spacer	Aluminum Alloy		15	Wear Ring	Polyacetal	

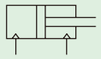
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Single Rod, Long Stroke

SSD2 Series (Long Stroke)

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2 – 12 – ( ) – 100 ——— N – LB – I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch (Built-in magnet for switch)

SSD2-L – 12 – ( ) – 100 – T0H – R – N – LB – I

Model No. ❶ Bore Size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting type ❽ Accessories

❶Bore Size (mm)

Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

❷Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	35 to 100	Every 1 mm
ø20	75 to 200	
ø25	75 to 300	
ø32 to ø100	125 to 300	

Note: Refer to Appendix 1 on the following page for details.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
	1-Color	2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*6
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□			●	●	●	●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12, ø16.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*7: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*8: Only T2WLH, T2WLV can be selected.
*9: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❼Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 53, 54, 56, 57. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

❽Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❻Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	35	●	●								
	40	●	●								
	45	●	●								
	50	●	●								
	75	●	●	●	●						
	100	●	●	●	●						
	125			●	●	●	●	●	●	●	●
	150			●	●	●	●	●	●	●	●
	175			●	●	●	●	●	●	●	●
	200			●	●	●	●	●	●	●	●
	250				●	●	●	●	●	●	●
	300				●	●	●	●	●	●	●
Max. Stroke (mm)		100		200	300						
Intermediate Stroke *1		Every 1 mm									

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2 – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H

❹ Switch Model No.

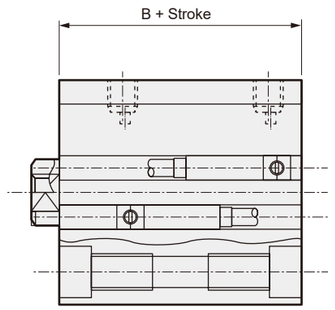
Specifications

Item	SSD2 SSD2-L (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
Port Size	M5				Rc1/8		Rc1/4		Rc3/8	
Stroke Tolerance mm	+2.0 0									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	Rubber Cushion									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

About Intermediate Stroke

● SSD2 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	31 to 99
	20	51 to 199
	25	51 to 299
	32 to 100	101 to 299
Model Number Indication Example	Model No.: SSD2-32-121 A +4 mm spacer is added to the standard cylinder SSD2-32-125 to make it 121 mm. B + Stroke = 45.5 + 125 = 170.5	



Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02 × 10⁴	1.13 × 10²
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01 × 10²	1.21 × 10²	1.41 × 10²	1.61 × 10²	1.81 × 10²	2.01 × 10²
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06 × 10²	1.21 × 10²	1.36 × 10³	1.51 × 10²
ø20	Push	-	31.4	47.1	62.8	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²	2.51 × 10²	2.83 × 10²	3.14 × 10²
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²	1.88 × 10²	2.12 × 10²	2.36 × 10²
ø25	Push	-	49.1k	73.6	98.2	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²	3.93 × 10²	4.42 × 10²	4.91 × 10²
	Pull	-	37.8	56.7	75.6	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²	3.02 × 10²	3.40 × 10²	3.78 × 10²
ø32	Push	-	80.4	1.21 × 10²	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²	6.43 × 10²	7.24 × 10²	8.04 × 10²
	Pull	-	60.3	90.5	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62×10²	4.22 × 10²	4.83 × 10²	5.43×10²	6.03 × 10³
ø40	Push	-	1.26 × 10²	1.88 × 10²	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²	1.01 × 10³	1.13 × 10³	1.26 × 10³
	Pull	-	1.06 × 10²	1.58 × 10²	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²	8.44 × 10²	9.50 × 10²	1.06 × 10³
ø50	Push	-	1.96 × 10²	2.95 × 10²	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³	1.57 × 10³	1.77 × 10³	1.96 × 10³
	Pull	-	1.65 × 10²	2.47 × 10²	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³	1.32 × 10³	1.48 × 10³	1.65 × 10³
ø63	Push	1.56 × 10²	3.12 × 10²	4.68 × 10²	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³	2.49 × 10³	2.81 × 10³	3.12 × 10³
	Pull	1.40 × 10²	2.80 × 10²	4.20 × 10²	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³	2.24 × 10³	2.52 × 10³	2.80 × 10³
ø80	Push	2.51 × 10²	5.03 × 10²	7.54 × 10²	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³	4.02 × 10³	4.52 × 10³	5.03 × 10³
	Pull	2.27 × 10²	4.54 × 10²	6.80 × 10²	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³	3.63 × 10³	4.08 × 10³	4.54 × 10³
ø100	Push	3.93 × 10²	7.85 × 10²	1.18 × 10³	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³	6.28 × 10³	7.07 × 10³	7.85 × 10³
	Pull	3.57 × 10²	7.15 × 10²	1.07 × 10³	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³	5.72 × 10³	6.43 × 10³	7.15 × 10³

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	35		40		45		50		75		100		125		150		175		200		250		300	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	144	146	153	155	161	163	170	172	212	214	255	257	-	-	-	-	-	-	-	-	-	-	-	-
ø16	179	180	190	191	201	202	212	213	267	268	322	323	-	-	-	-	-	-	-	-	-	-	-	-
ø20	-	-	-	-	-	-	-	-	321	326	383	388	446	451	508	513	571	576	633	638	-	-	-	-
ø25	-	-	-	-	-	-	-	-	412	417	492	497	572	577	652	657	732	737	812	817	972	977	1132	1137
ø32	-	-	-	-	-	-	-	-	-	-	-	-	790	799	897	905	1003	1012	1111	1119	1326	1334	1541	1549
ø40	-	-	-	-	-	-	-	-	-	-	-	-	1,000	1016	1133	1148	1265	1281	1398	1413	1663	1678	1928	1943
ø50	-	-	-	-	-	-	-	-	-	-	-	-	1553	1571	1779	1796	2004	2022	2217	2234	2642	2659	3067	3084
ø63	-	-	-	-	-	-	-	-	-	-	-	-	2138	2162	2413	2437	2688	2712	2963	2987	3512	3536	4062	4086
ø80	-	-	-	-	-	-	-	-	-	-	-	-	3478	3505	3911	3937	4343	4370	4776	4802	5640	5666	6505	6531
ø100	-	-	-	-	-	-	-	-	-	-	-	-	4816	4848	5386	5418	5956	5988	6526	6558	7667	7699	8807	8839

Mounting Bracket Model No. Notation Method

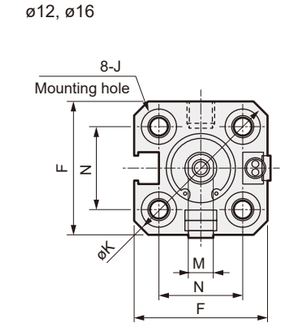
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

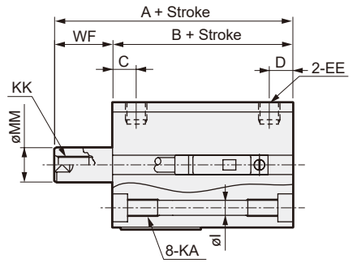
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

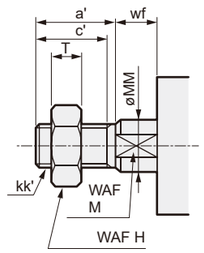
● SSD2 (Long Stroke)-(L)-12 to 25
*Outline dimensions are common for both with and without switch.

ø12, ø16

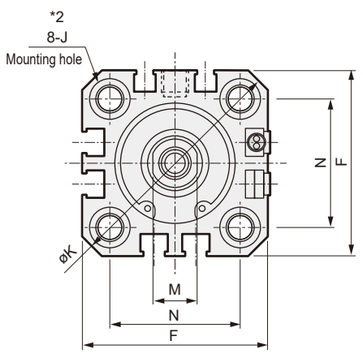


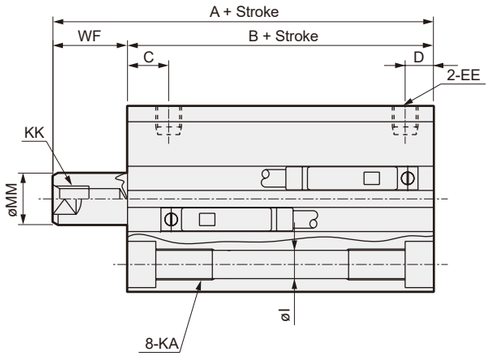


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)	A *1	B *1	C	D *3	EE	F	I	J *2	K	KA	KK	M	MM	N	WF
ø12	45.5	32	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	13.5
ø16	45.5	32	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	13.5
ø20	55.5	41	8	5.5 (8)	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	14.5
ø25	59	44	11	6 (11)	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	15

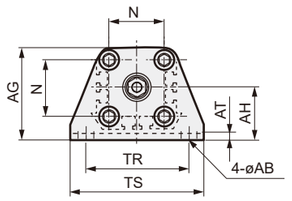
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 70 mm, enter the standard stroke of 75 mm for calculation.
*2: ø20: When exceeding 100 strokes, ø25: When exceeding 150 strokes, there is no counterbore J.
*3: Dimension in ( ) for code D is the value when ø20 exceeds 100 strokes, ø25 exceeds 150 strokes.
*4: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

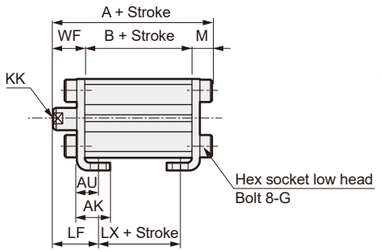
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	13.5
ø16	12	10	10	M6	6	8	3.6	13.5
ø20	14	12	13	M8	8	10	5	14.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	15

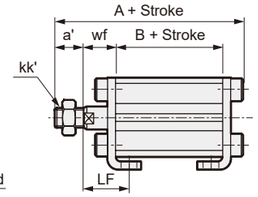
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB)
SSD2-(L)-12 to 25-LB



For rod end male thread

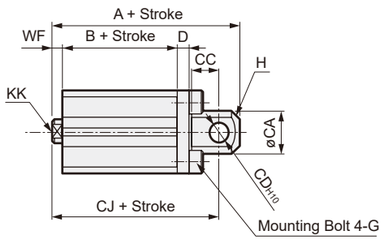


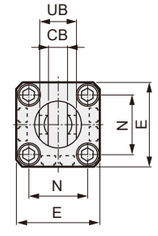


Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2

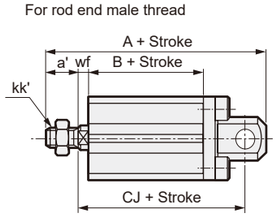
Code / Bore Size (mm)	For female thread WF	LF	Dimension with/without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with/without switch A	B	LX
ø12	13.5	19.5	50.3	32	20	10.5	M5	13.5	19.5	60.8	32	20
ø16	13.5	19.5	50.3	32	20	12	M6	13.5	19.5	62.3	32	20
ø20	14.5	20.5	62.7	41	29	14	M8	14.5	20.5	76.7	41	29
ø25	15	22.5	66.2	44	29	17.5	M10 × 1.25	15	22.5	83.7	44	29

● Double Knuckle Clevis (CB)
SSD2-(L)-12 to 25-CB





For rod end male thread

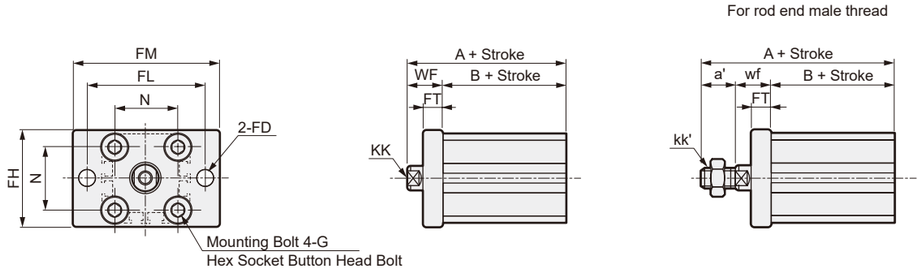


Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	G	KK	H	N	UB
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	M3 depth 6	C1.5	15.5	$10^{-0.1}_{-0.3}$
ø16	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	M4 depth 8	C2	20	$12^{-0.1}_{-0.4}$
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	M5 depth 7	C4	25.5	$16^{-0.1}_{-0.3}$
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	M6 Depth 12	C5	28	$20^{-0.1}_{-0.3}$

Code / Bore Size (mm)	For female thread WF	Dimension with/without switch A	B	CJ	For male thread a'	kk'	wf	Dimension with/without switch A	B	CJ
ø12	13.5	65.5	32	59.5	10.5	M5	13.5	76	32	59.5
ø16	13.5	66.5	32	60.5	12	M6	13.5	78.5	32	60.5
ø20	14.5	82.5	41	73.5	14	M8	14.5	96.5	41	73.5
ø25	15	89	44	79	17.5	M10 × 1.25	15	106.5	44	79

Outline Dimension Drawing (Bore size: ø12 to ø25)

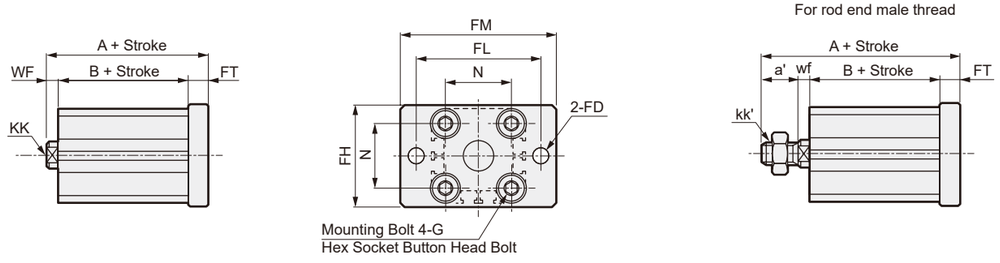
● Rod Side Flange (FA)
SSD2-(L)-12 to 25-FA



Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

Code / Bore Size (mm)	For female thread WF	Dimension with/without switch A	B	For male thread a'	kk'	wf	Dimension with/without switch A	B
ø12	13.5	45.5	32	10.5	M5	13.5	56	32
ø16	13.5	45.5	32	12	M6	13.5	57.5	32
ø20	14.5	55.5	41	14	M8	14.5	69.5	41
ø25	15	59	44	17.5	M10 × 1.25	15	76.5	44

● Head Side Flange (FB)
SSD2-(L)-12 to 25-FB

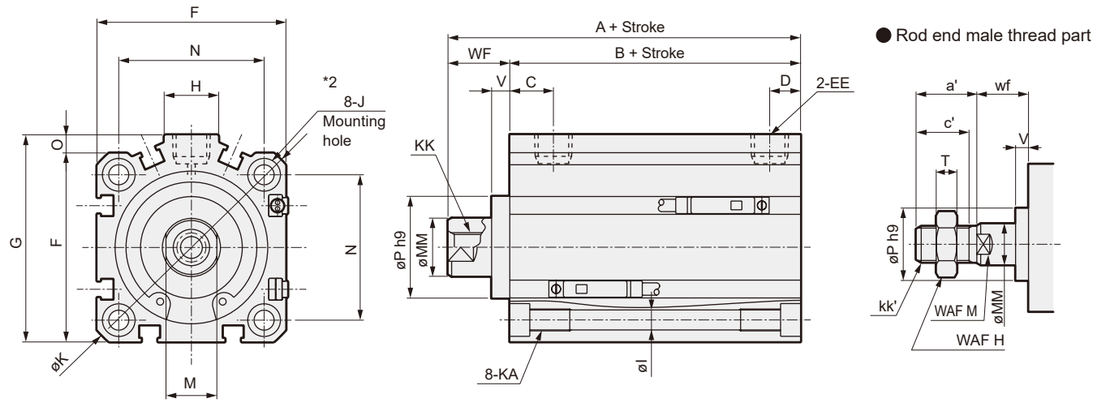


Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	N	G	KK
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12

Code / Bore Size (mm)	For female thread WF	Dimension with/without switch A	B	For male thread a'	kk'	wf	Dimension with/without switch A	B
ø12	13.5	51	32	10.5	M5	13.5	61.5	32
ø16	13.5	51	32	12	M6	13.5	63	32
ø20	14.5	63.5	41	14	M8	14.5	77.5	41
ø25	15	67	44	17.5	M10 × 1.25	15	84.5	44

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2 (Long Stroke)-(L)-32 to 100
*Outline dimensions are common for both with and without switch.



Code / Bore Size (mm)	A *1	B *1	C	D *3	EE	F	G	H	I	J *2	K	KA	KK	M	MM	N	O	P	V	WF
ø32	62.5	45.5	8	8	Rc1/8	45	49.5	12.5	5.5	9 Counterbore Depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	22	5	17
ø40	72	55	12	8.5 (12)	Rc1/8	52	57	15	5.5	9 Counterbore Depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	28	5	17
ø50	73.5	55.5	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	35	5	18
ø63	75	57	13	11 (13)	Rc1/4	77	84	23	8.7	14 Counterbore Depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	35	5	18
ø80	86	66	16	13 (16)	Rc3/8	98	104	31	10.5	17.5 Counterbore Depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	43	5	20
ø100	97.5	75.5	23	15 (23)	Rc3/8	117	123.5	38	10.5	17.5 Counterbore Depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	59	5	22

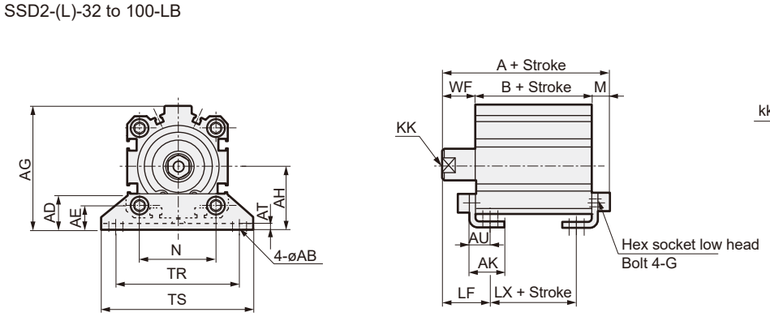
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 121 mm, enter the standard stroke of 125 mm for calculation.
*2: ø32 to ø50: When exceeding 150 strokes, ø63 to ø100: When exceeding 200 strokes, there is no counterbore J.
*3: Dimension in ( ) for code D is the value when ø32 to ø50 exceeds 150 strokes, ø63 to ø100 exceeds 200 strokes.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	15
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	15
ø50	28.5	26	27	M18 × 1.5	17	20	11	15
ø63	28.5	26	27	M18 × 1.5	17	20	11	15
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	18
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	18

Outline Dimension Drawing (Bore size: ø32 to ø100)

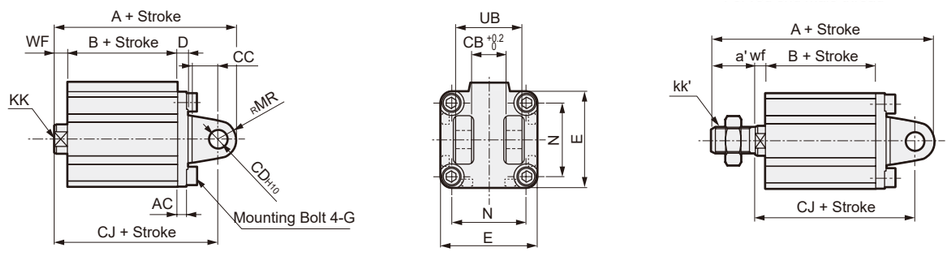
● Axial Foot (LB)
SSD2-(L)-32 to 100-LB



Code / Bore Size (mm)	Common dimension													
	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

Code / Bore Size (mm)	For female thread					For male thread						
	WF	LF	Dimension with/without switch			a'	kk'	wf	LF	Dimension with/without switch		
			A	B	LX					A	B	LX
ø32	17	25	69.7	45.5	29.5	23.5	M14 × 1.5	15	23	91.2	45.5	29.5
ø40	17	25	79.2	55	39	23.5	M14 × 1.5	15	23	100.7	55	39
ø50	18	29.5	81.7	55.5	32.5	28.5	M18 × 1.5	15	26.5	107.2	55.5	32.5
ø63	18	31	84.2	57	31	28.5	M18 × 1.5	15	28	109.7	57	31
ø80	20	35	97.5	66	36	35.5	M22 × 1.5	18	33	131	66	36
ø100	22	39	110.5	75.5	41.5	35.5	M26 × 1.5	18	35	142	75.5	41.5

● Double Knuckle Clevis (CB)
SSD2-(L)-32 to 100-CB

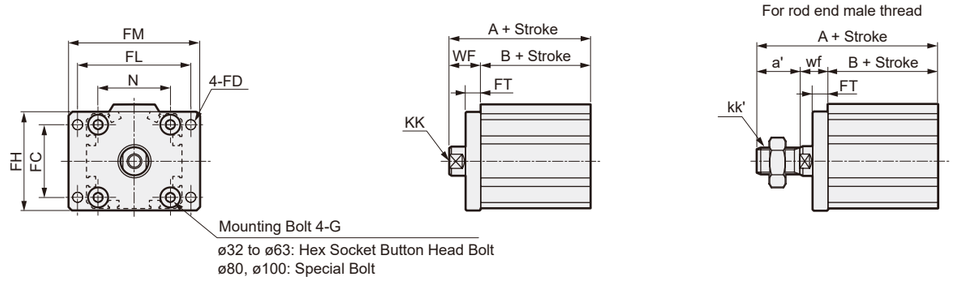


Code / Bore Size (mm)	Common dimension										
	AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64

Code / Bore Size (mm)	For female thread				For male thread					
	WF	Dimension with/without switch			a'	kk'	wf	Dimension with/without switch		
		A	B	CJ				A	B	CJ
ø32	17	92.5	45.5	82.5	23.5	M14 × 1.5	15	114	45.5	80.5
ø40	17	104	55	94	23.5	M14 × 1.5	15	125.5	55	92
ø50	18	115.5	55.5	101.5	28.5	M18 × 1.5	15	141	55.5	98.5
ø63	18	119	57	105	28.5	M18 × 1.5	15	144.5	57	102
ø80	20	142	66	124	35.5	M22 × 1.5	18	175.5	66	122
ø100	22	164.5	75.5	142.5	35.5	M26 × 1.5	18	196	75.5	138.5

Outline Dimension Drawing (Bore size: ø32 to ø100)

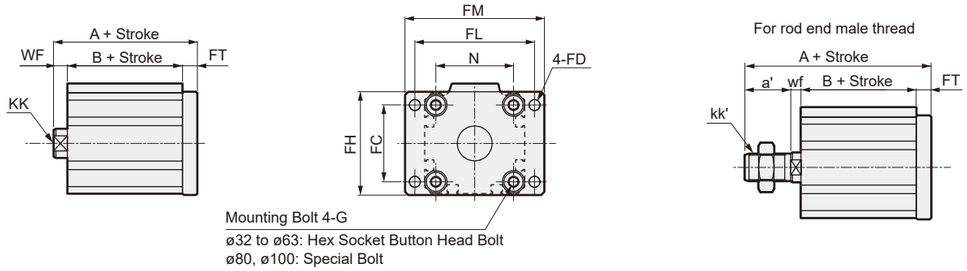
● Rod Side Flange (FA)
SSD2-(L)-32 to 100-FA



Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	N	G	KK
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27

Code / Bore Size (mm)	For female thread			For male thread				
	WF	Dimension with/without switch		a'	kk'	wf	Dimension with/without switch	
		A	B				A	B
ø32	17	62.5	45.5	23.5	M14 × 1.5	15	84	45.5
ø40	17	72	55	23.5	M14 × 1.5	15	93.5	55
ø50	18	73.5	55.5	28.5	M18 × 1.5	15	99	55.5
ø63	18	75	57	28.5	M18 × 1.5	15	100.5	57
ø80	20	86	66	35.5	M22 × 1.5	18	119.5	66
ø100	22	97.5	75.5	35.5	M26 × 1.5	18	129	75.5

● Head Side Flange (FB)
SSD2-(L)-32 to 100-FB

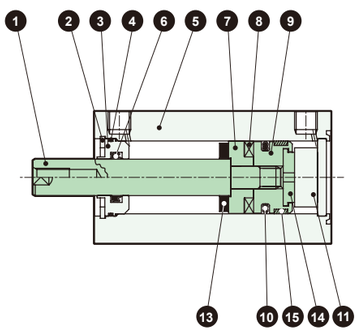


Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	N	G	KK
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27

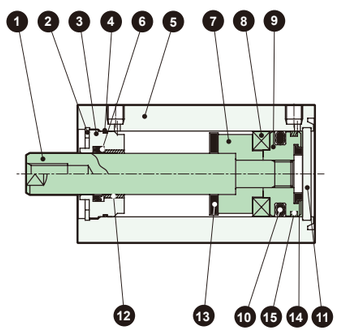
Code / Bore Size (mm)	For female thread			For male thread				
	WF	Dimension with/without switch		a'	kk'	wf	Dimension with/without switch	
		A	B				A	B
ø32	17	70.5	45.5	23.5	M14 × 1.5	15	92	45.5
ø40	17	80	55	23.5	M14 × 1.5	15	101.5	55
ø50	18	82.5	55.5	28.5	M18 × 1.5	15	108	55.5
ø63	18	84	57	28.5	M18 × 1.5	15	109.5	57
ø80	20	97	66	35.5	M22 × 1.5	18	130.5	66
ø100	22	108.5	75.5	35.5	M26 × 1.5	18	140	75.5

Internal Structure Diagram/Material

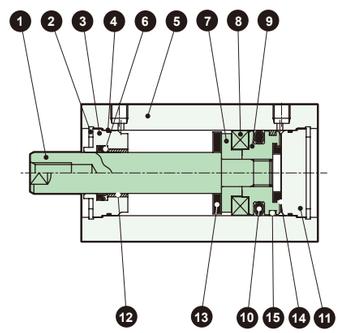
● SSD2 (Long Stroke)-L-12, 16
(Double Acting, Single Rod Type with Switch)



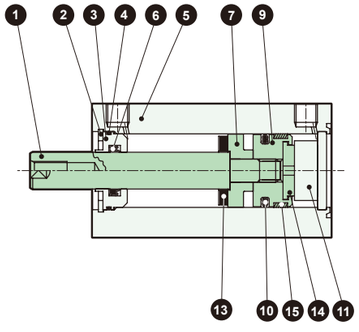
● SSD2 (long stroke) -L-20 to 100
(Double Acting, Single Rod Type with Switch)



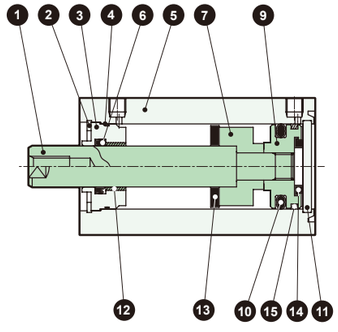
ø20: Exceeding 100 stroke up to 200 stroke
ø25: Exceeding 150 stroke up to 300 stroke
ø32 to ø50: Stroke exceeding 150 and up to 300
ø63 to ø100: Stroke exceeding 200 and up to 300



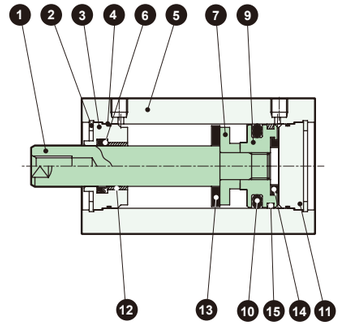
● SSD2 (Long Stroke)-12, 16
(Double Acting, Single Rod Type)



● SSD2 (Long Stroke)-20 to 100
(Double Acting, Single Rod Type)



ø20: Exceeding 100 stroke up to 200 stroke
ø25: Exceeding 150 stroke up to 300 stroke
ø32 to ø50: Stroke exceeding 150 and up to 300
ø63 to ø100: Stroke exceeding 200 and up to 300



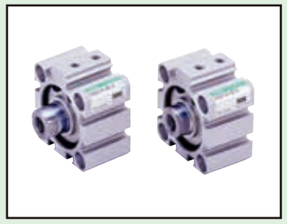
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to 25: Stainless steel ø32 to 100: Steel	ø16 to 100 Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	ø12 to 32: Chromate
8	Magnet	Plastic	

Part No.	Part Name	Material	Remarks
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover (*1)	ø12 to 25: Stainless steel ø32 to 100: Aluminum alloy	ø32 to 100: Alumite
12	Bushing	Bearing Alloy	ø20 to 100
13	Cushion rubber (R)	Urethane Rubber	
14	Cushion rubber (H)	Urethane Rubber	
15	Wear Ring	Polyacetal	

Note: For strokes exceeding ø20:100 or ø25:150, the cover is made of: Aluminum alloy, remarks: Chromate the product.

For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO



Compact Cylinder Single Acting, Push Type

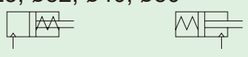
SSD2-X Series

Single Acting/Retracting Type with Switch

SSD2-Y Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50

Circuit Diagram Symbol SSD2-X SSD2-Y



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-X – 12 – [ ] – 5 ——— N – LB – I
❶ ❷ ❸ ❹ ❼ ❽ ❾

With Switch
(Built-in magnet for switch)

SSD2-XL – 12 – [ ] – 10 – T0H – R – N – LB – I

❶	❷	❸	❹	❺	❻	❼	❽	❾
Model No.	Bore Size	Piping thread type	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

❶Model No.

Code	Content
SSD2-X	Single Acting, Push Type
SSD2-XL	Single Acting/Push Type with Switch
SSD2-Y	Single Acting, Retracting Type
SSD2-YL	Single Acting/Retracting Type with Switch

❷Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

❸Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø50)
NN	NPT thread (Custom product) (ø32 to ø50)
GN	G thread (Custom product) (ø32 to ø50)

❹Stroke (mm)

Stroke	Bore Size	ø12	ø16	ø20	ø25	ø32	ø40	ø50
5	5	●	●	●	●	●	●	
10	10	●	●	●	●	●	●	●
20	20							●

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 62.
*2: For minimum stroke for ❽ mounting type LB, refer to P. 65, 71.

❺Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●				
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●				
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●				
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●				
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●				
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●				
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●				
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	*3
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	*4

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

❻Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❽Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 65, 66, 68, 69, 71, 72, 74, 75. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

❼Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❾Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-X – ..... – XP5
SSD2-Y – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
❺ Switch Model No.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes
SSD2 – X – ..... – FP1
SSD2 – Y – ..... – FP1

Specifications

Item	SSD2-X, SSD2-Y SSD2-XL (With Switch), SSD2-YL (With Switch)						
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Actuation method	SSD2-X, XL: Single acting/push, SSD2-Y, YL: Single Acting, Retracting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.2		0.17		0.12		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)						
Port Size	M5				Rc1/8 *2		Rc1/4
Stroke Tolerance mm	+1.0 0						
Operating Piston Speed mm/s	50 to 500						
Cushion	None						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1

*1: Do not leave single-acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released. If it is necessary to use the product while pressurized, use a double-acting type.
*2: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 1 or 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V	
			SSD2-XL	SSD2-YL
ø12	10 *2	5	Not mountable	Not mountable
ø16				
ø20	5			
ø25				
ø32				
ø40				
ø50	10	10	20	20

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: Can be manufactured with 5 strokes only when 1 pc. is included to the rod side.

SSD2-X/SSD2-Y Spring Load

(Unit: N)

Bore Size (mm)	Stroke (mm)	SSD2-X		SSD2-Y	
		At 0 Stroke	At Full Stroke	At 0 Stroke	At Full Stroke
12	5	4	14	3	10
	10	4	14	3	10
16	5	6	15	4	19
	10	6	15	4	19
20	5	6	15	5	27
	10	6	15	5	27
25	5	11	21	10	29
	10	11	21	10	29
32	5	23	30	20	29
	10	16	30	20	29
40	5	13	30	20	29
	10	21	39	20	29
50	10	30	50	24	83
	20	24	54	24	83

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		20	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	40	80	49	89	-	-
ø16	52	92	64	104	-	-
ø20	74	114	89	129	-	-
ø25	107	147	127	167	-	-
ø32	155	195	183	223	-	-
ø40	249	289	285	325	-	-
ø50	-	-	459	499	572	612

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^{4}	1.13×10^{2}
	Pull	-	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{3}	1.51×10^{2}
ø20	Push	-	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{3}
ø40	Push	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}

Mounting Bracket Model No. Notation Method

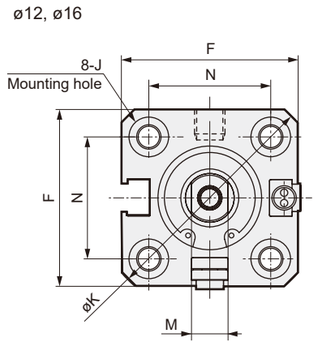
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

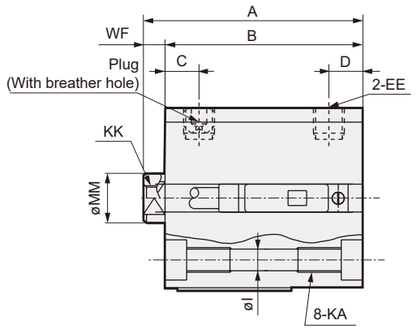
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

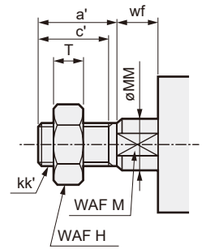
● SSD2-X(L)-12 to 25

ø12, ø16

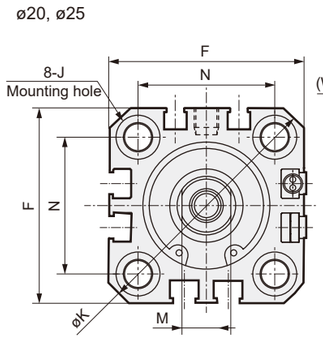


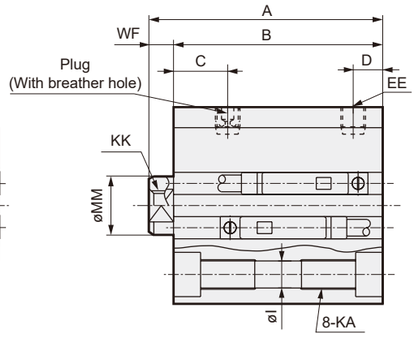


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	Stroke	5	30.5	27	25.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
		10	35.5	32	30.5	27													
ø16	Stroke	5	30.5	27	25.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
		10	35.5	32	30.5	27													
ø20	Stroke	5	39	34.5	29	24.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
		10	44	39.5	34	29.5													
ø25	Stroke	5	42.5	37.5	32.5	27.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5
		10	47.5	42.5	37.5	32.5													

*1: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.

***2: For dimensions with each switch, refer to P. 300 to 309.**

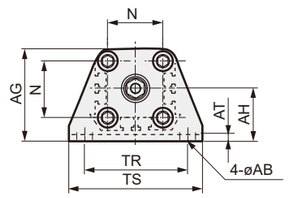
***3: For outline dimension drawings of individual accessories, refer to P. 34.**

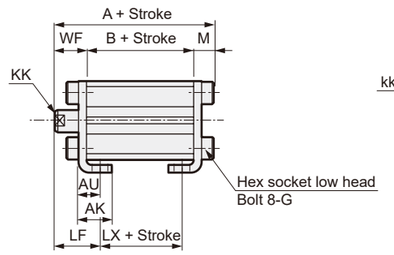
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

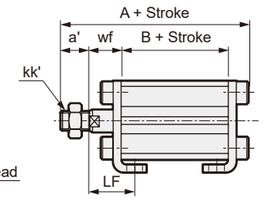
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB)
SSD2-X(L)-12 to 25-LB





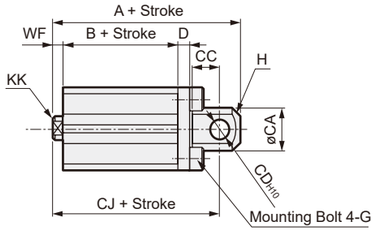
For rod end male thread

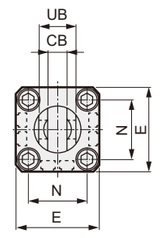


Code / Bore Size (mm)	AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	WF	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX	Dimension without switch A	Dimension without switch B	Dimension without switch LX	a'	kk'	wf	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX	Dimension without switch A	Dimension without switch B	Dimension without switch LX
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8	13.5	19.5	40.3	22	10	35.3	17	5	10.5	M5	13.5	19.5	50.8	22	10	45.8	17	5
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8	13.5	19.5	40.3	22	10	35.3	17	5	12	M6	13.5	19.5	52.3	22	10	47.3	17	5
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2	14.5	20.5	51.2	29.5	17.5	41.2	19.5	7.5	14	M8	14.5	20.5	65.2	29.5	17.5	55.2	19.5	7.5
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 depth 12	28	52	66	7.2	15	22.5	54.7	32.5	17.5	44.7	22.5	7.5	17.5	M10 × 1.25	15	22.5	72.2	32.5	17.5	62.2	22.5	7.5

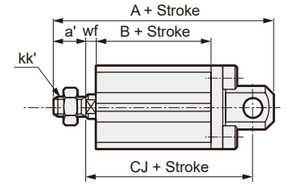
Note: ø20: LB cannot be selected for 5 strokes without switch.

● Double Knuckle Clevis (CB)
SSD2-X(L)-12 to 25-CB





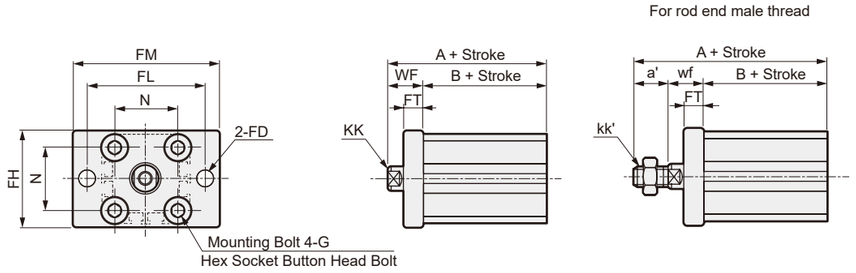
For rod end male thread



Code / Bore Size (mm)	CA	CB	CC	CD	D	E	G	KK	H	N	UB	WF	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A	Dimension without switch B	Dimension without switch CJ	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A	Dimension without switch B	Dimension without switch CJ
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	M3 depth 6	C1.5	15.5	$10^{-0.1}_{-0.3}$	3.5	45.5	22	39.5	40.5	17	34.5	10.5	M5	3.5	56	22	39.5	51	17	34.5
ø16	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	M4 depth 8	C2	20	$12^{-0.1}_{-0.4}$	3.5	46.5	22	40.5	41.5	17	35.5	12	M6	3.5	58.5	22	40.5	53.5	17	35.5
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	M5 depth 7	C4	25.5	$16^{-0.1}_{-0.3}$	4.5	61	29.5	52	51	19.5	42	14	M8	4.5	75	29.5	52	65	19.5	42
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	M6 depth 12	C5	28	$20^{-0.1}_{-0.3}$	5	67.5	32.5	57.5	57.5	22.5	47.5	17.5	M10 × 1.25	5	85	32.5	57.5	75	22.5	47.5

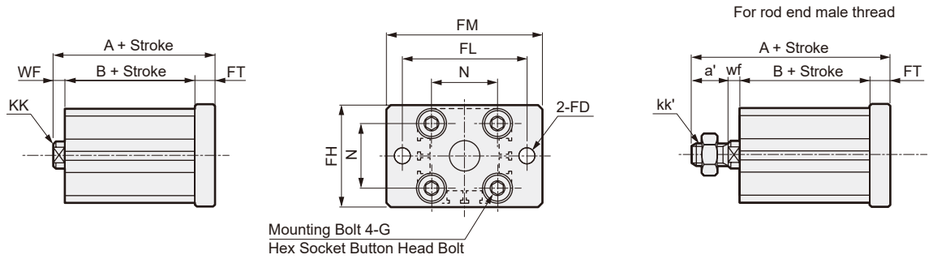
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange (FA)
SSD2-X(L)-12 to 25-FA



Code / Bore Size (mm)	FD	FH	FL	FM	FT	G	KK	N	WF	For female thread: Dimension with switch A	For female thread: Dimension with switch B	For female thread: Dimension without switch A	For female thread: Dimension without switch B	a'	kk'	wf	For male thread: Dimension with switch A	For male thread: Dimension with switch B	For male thread: Dimension without switch A	For male thread: Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	13.5	35.5	22	30.5	17	10.5	M5	13.5	46	22	41	17
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	13.5	35.5	22	30.5	17	12	M6	13.5	47.5	22	42.5	17
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	14.5	44	29.5	34	19.5	14	M8	14.5	58	29.5	48	19.5
ø25	6.6	42	52	64	8	M6×16	M6 depth 12	28	15	47.5	32.5	37.5	22.5	17.5	M10 × 1.25	15	65	32.5	55	22.5

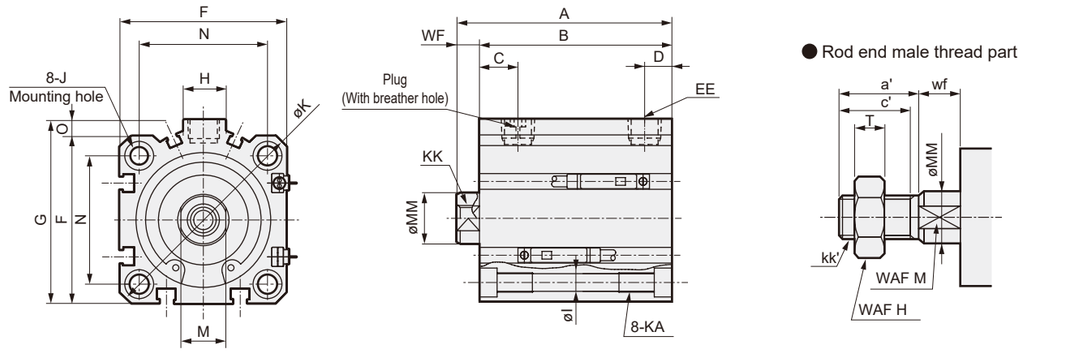
● Head Side Flange (FB)
SSD2-X(L)-12 to 25-FB



Code / Bore Size (mm)	FD	FH	FL	FM	FT	G	KK	N	WF	For female thread: Dimension with switch A	For female thread: Dimension with switch B	For female thread: Dimension without switch A	For female thread: Dimension without switch B	a'	kk'	wf	For male thread: Dimension with switch A	For male thread: Dimension with switch B	For male thread: Dimension without switch A	For male thread: Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	3.5	31	22	26	17	10.5	M5	3.5	41.5	22	36.5	17
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	3.5	31	22	26	17	12	M6	3.5	43	22	38	17
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	4.5	42	29.5	32	19.5	14	M8	4.5	56	29.5	46	19.5
ø25	6.6	42	52	64	8	M6×16	M6 depth 12	28	5	45.5	32.5	35.5	22.5	17.5	M10 × 1.25	5	63	32.5	53	22.5

Outline Dimension Drawing (Bore size: ø32 to ø50)

● SSD2-X(L)-32 to 50



Code / Bore Size (mm)			Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C *3	D *3	EE *2	F	G	H	I	J	K	KA	KK	M	MM	N	O	WF
ø32	Stroke	5	45	38	35	28	8 (10)	8 5.5	Rc1/8	45	49.5	12.5	5.5	9 Counterbore Depth 5.5	60	M6 Depth 11	M8 Depth 13	14	16	34	4.5	7
		10	50	43	40	33																
ø40	Stroke	5	51.5	44.5	41.5	34.5	12 (11.5)	8.5 (8)	Rc1/8	52	57	15	5.5	9 Counterbore Depth 5.5	69	M6 Depth 11	M8 Depth 13	14	16	40	5	7
		10	56.5	49.5	46.5	39.5																
ø50	Stroke	10	58.5	50.5	48.5	40.5	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 Depth 13	M10 Depth 15	17	20	50	7	8
		20	68.5	60.5	58.5	50.5																

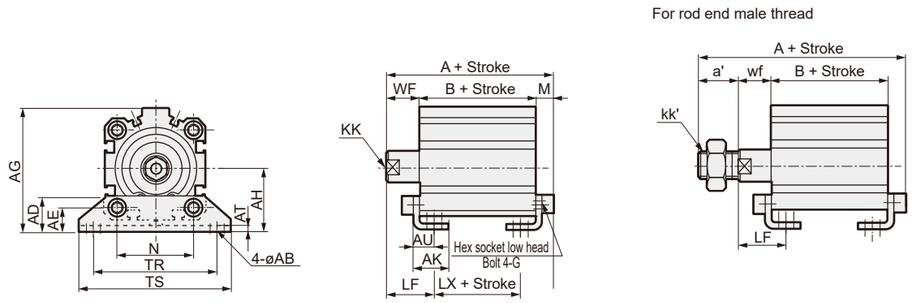
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*3: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5

Outline Dimension Drawing (Bore size: ø32 to ø50)

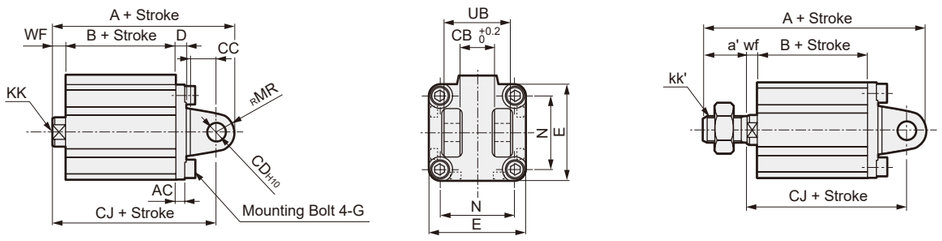
● Axial Foot (LB)
SSD2-X(L)-32 to 50-LB



Code / Bore Size (mm)	Common dimension													
	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2

Code / Bore Size (mm)	For female thread								For male thread								
	WF	LF	Dimension with switch			Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
			A	B	LX	A	B	LX					A	B	LX	A	B	LX
ø32	17	25	57.2	33	17	47.2	23	7	23.5	M14 × 1.5	15	23	78.7	33	17	68.7	23	7
ø40	17	25	63.7	39.5	23.5	53.7	29.5	13.5	23.5	M14 × 1.5	15	23	85.2	39.5	23.5	75.2	29.5	13.5
ø50	18	29.5	66.7	40.5	17.5	56.7	30.5	7.5	28.5	M18 × 1.5	15	26.5	92.2	40.5	17.5	82.2	30.5	7.5

● Double Knuckle Clevis (CB)
SSD2-X(L)-32 to 50-CB

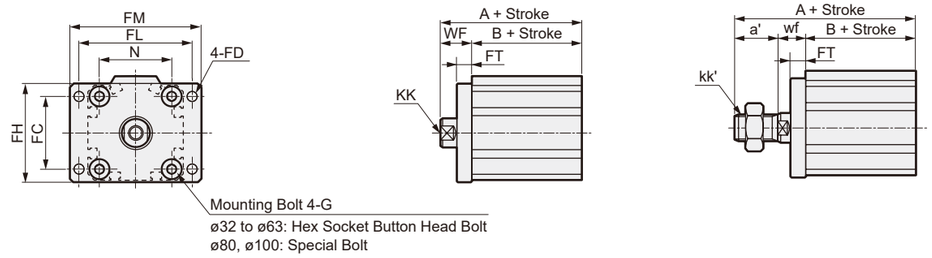


Code / Bore Size (mm)	Common dimension										
	AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44

Code / Bore Size (mm)	For female thread							For male thread							
	WF	Dimension with switch			Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
		A	B	CJ	A	B	CJ				A	B	CJ	A	B	CJ
ø32	7	70	33	60	60	23	50	23.5	M14 × 1.5	5	91.5	33	58	81.5	23	48
ø40	7	78.5	39.5	68.5	68.5	29.5	58.5	23.5	M14 × 1.5	5	100	39.5	66.5	90	29.5	56.5
ø50	8	90.5	40.5	76.5	80.5	30.5	66.5	28.5	M18 × 1.5	5	116	40.5	73.5	106	30.5	63.5

Outline Dimension Drawing (Bore size: ø32 to ø50)

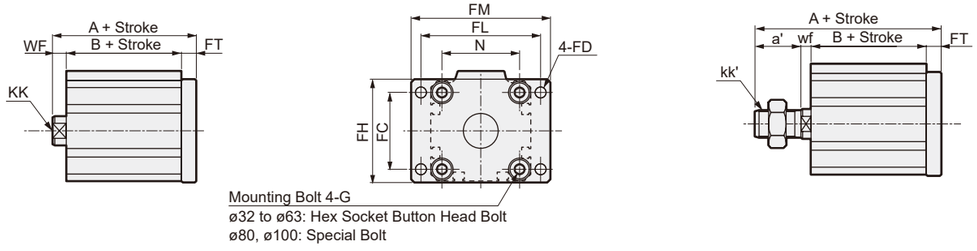
● Rod Side Flange (FA)
SSD2-X(L)-32 to 50-FA



Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50

Code / Bore Size (mm)	For female thread					For male thread					
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø32	17	50	33	40	23	23.5	M14 × 1.5	15	71.5	33	61.5	23
ø40	17	56.5	39.5	46.5	29.5	23.5	M14 × 1.5	15	78	39.5	68	29.5
ø50	18	58.5	40.5	48.5	30.5	28.5	M18 × 1.5	15	84	40.5	74	30.5

● Head Side Flange (FB)
SSD2-X(L)-32 to 50-FB



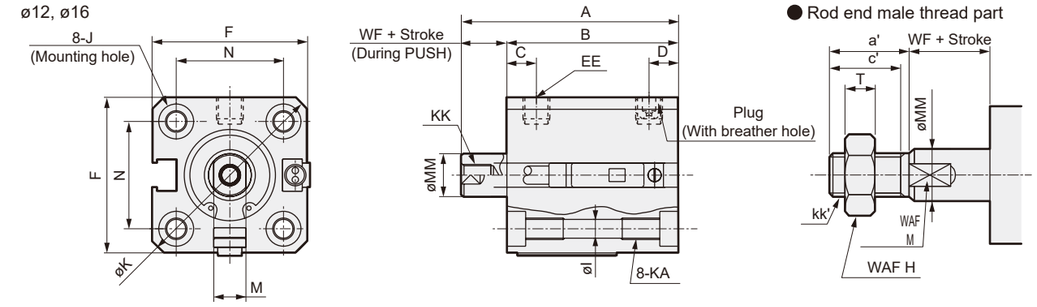
Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50

Code / Bore Size (mm)	For female thread					For male thread					
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø32	7	48	33	38	23	23.5	M14 × 1.5	5	69.5	33	59.5	23
ø40	7	54.5	39.5	44.5	29.5	23.5	M14 × 1.5	5	76	39.5	66	29.5
ø50	8	57.5	40.5	47.5	30.5	28.5	M18 × 1.5	5	83	40.5	73	30.5

Outline Dimension Drawing (Bore size: ø12 to ø25)

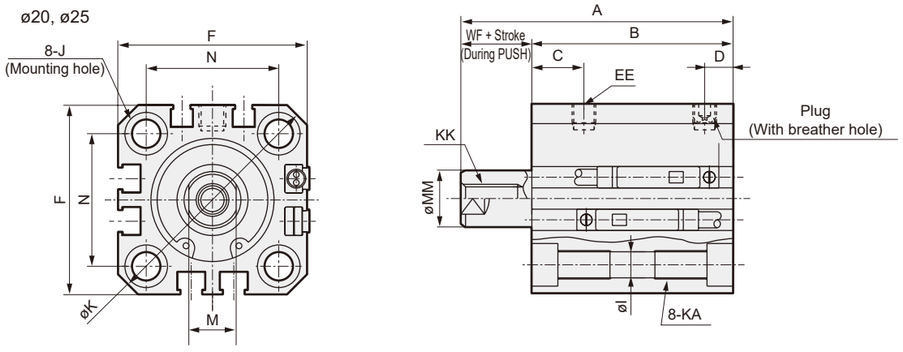
● SSD2-Y(L)-12 to 25 (With Switch)

ø12, ø16



● Rod end male thread part

ø20, ø25



Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	Stroke	5	35.5	27	30.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 Depth 7	M3 Depth 6	5	6	15.5	3.5
		10	45.5	32	40.5	27													
ø16	Stroke	5	35.5	27	30.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 Depth 7	M4 Depth 8	6	8	20	3.5
		10	45.5	32	40.5	27													
ø20	Stroke	5	44	34.5	34	24.5	8	5.5	M5	36	5.5	9 Counterbore Depth 5.5	47	M6 Depth 11	M5 Depth 7	8	10	25.5	4.5
		10	54	39.5	44	29.5													
ø25	Stroke	5	47.5	37.5	37.5	27.5	11	6	M5	40	5.5	9 Counterbore Depth 5.5	51	M6 Depth 11	M6 Depth 12	10	12	28	5
		10	57.5	42.5	47.5	32.5													

*1: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.

***2: For dimensions with each switch, refer to P. 300 to 309.**

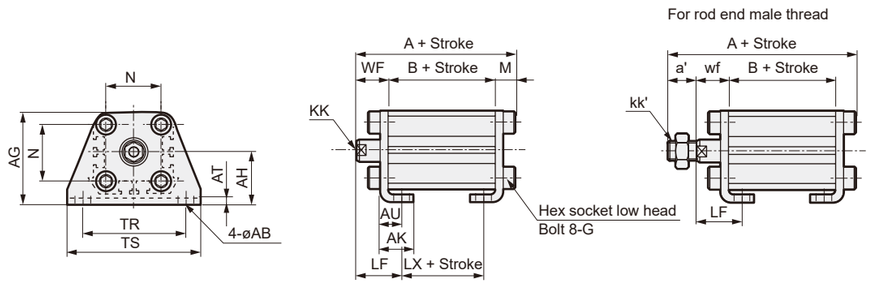
***3: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø12 to ø25)

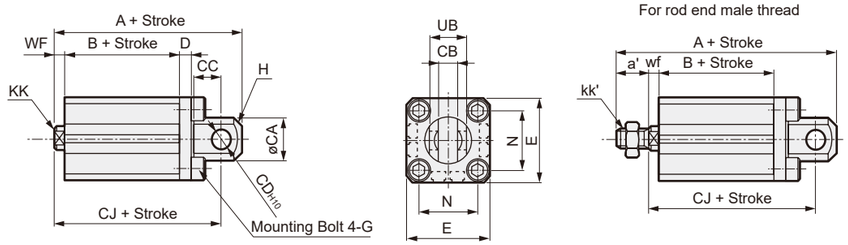
● Axial Foot (LB)
SSD2-Y(L)-12 to 25-LB



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8	13.5	19.5	40.3	22	10	35.3	17	5	10.5	M5	13.5	19.5	50.8	22	10	45.8	17	5
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8	13.5	19.5	40.3	22	10	35.3	17	5	12	M6	13.5	19.5	52.3	22	10	47.3	17	5
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2	14.5	20.5	51.2	29.5	17.5	41.2	19.5	7.5	14	M8	14.5	20.5	65.2	29.5	17.5	55.2	19.5	7.5
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 depth 12	28	52	66	7.2	15	22.5	54.7	32.5	17.5	44.7	22.5	7.5	17.5	M10 × 1.25	15	22.5	72.2	32.5	17.5	62.2	22.5	7.5

Note: ø20: LB cannot be selected for 5 strokes without switch.

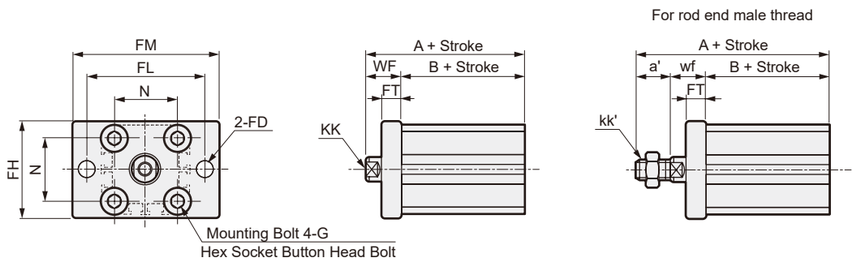
● Double Knuckle Clevis (CB)
SSD2-Y(L)-12 to 25-CB



Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	G	H	KK	N	UB	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	C1.5	M3 depth 6	15.5	$10^{-0.1}_{-0.3}$	3.5	45.5	22	39.5	40.5	17	34.5	10.5	M5	3.5	56	22	39.5	51	17	34.5
ø16	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	C2	M4 depth 8	20	$12^{-0.1}_{-0.4}$	3.5	46.5	22	40.5	41.5	17	35.5	12	M6	3.5	58.5	22	40.5	53.5	17	35.5
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	C4	M5 depth 7	25.5	$16^{-0.1}_{-0.3}$	4.5	61	29.5	52	51	19.5	42	14	M8	4.5	75	29.5	52	65	19.5	42
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	C5	M6 depth 12	28	$20^{-0.1}_{-0.3}$	5	67.5	32.5	57.5	57.5	22.5	47.5	17.5	M10 × 1.25	5	85	32.5	57.5	75	22.5	47.5

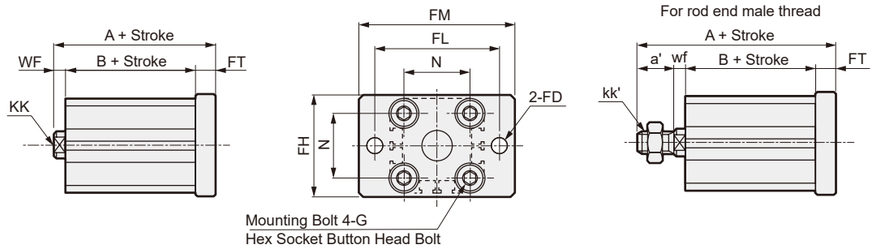
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange (FA)
SSD2-Y(L)-12 to 25-FA



Code / Bore Size (mm)	Common dimension								For female thread					For male thread					
	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	13.5	35.5	22	30.5	17	10.5	M5	13.5	46	22	41	17
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	13.5	35.5	22	30.5	17	12	M6	13.5	47.5	22	42.5	17
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	14.5	44	29.5	34	19.5	14	M8	14.5	58	29.5	48	19.5
ø25	6.6	42	52	64	8	M6×16	M6 depth 12	28	15	47.5	32.5	37.5	22.5	17.5	M10 × 1.25	15	65	32.5	55	22.5

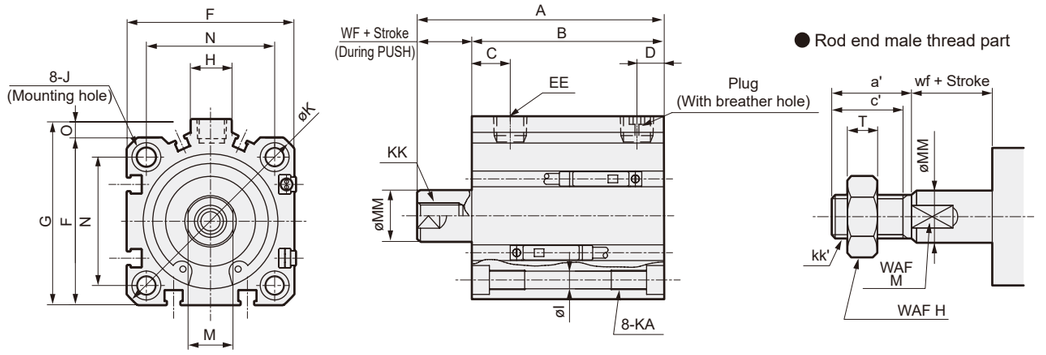
● Head Side Flange (FB)
SSD2-Y(L)-12 to 25-FB



Code / Bore Size (mm)	Common dimension								For female thread					For male thread					
	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	3.5	31	22	26	17	10.5	M5	3.5	41.5	22	36.5	17
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	3.5	31	22	26	17	12	M6	3.5	43	22	38	17
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	4.5	42	29.5	32	19.5	14	M8	4.5	56	29.5	46	19.5
ø25	6.6	42	52	64	8	M6×16	M6 depth 12	28	5	45.5	32.5	35.5	22.5	17.5	M10 × 1.25	5	63	32.5	53	22.5

Outline Dimension Drawing (Bore size: ø32 to ø50)

● SSD2-Y(L)-32 to 50 (With Switch)



Code / Bore Size (mm)		Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C *2	D *2	EE *1	F	G	H	I	J	K	KA	KK	M	MM	N	O	WF
ø32	Stroke 5	50	38	40	28	8 (10)	8 5.5	Rc1/8	45	49.5	12.5	5.5	9 Counterbore Depth 5.5	60	M6 Depth 11	M8 Depth 13	14	16	34	4.5	7
	Stroke 10	60	43	50	33																
ø40	Stroke 5	56.5	44.5	46.5	34.5	12 (11.5)	8.5 (18)	Rc1/8	52	57	15	5.5	9 Counterbore Depth 5.5	69	M6 Depth 11	M8 Depth 13	14	16	40	5	7
	Stroke 10	66.5	49.5	56.5	39.5																
ø50	Stroke 10	68.5	50.5	58.5	40.5	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 Depth 13	M10 Depth 15	17	20	50	7	8
	Stroke 20	88.5	60.5	78.5	50.5																

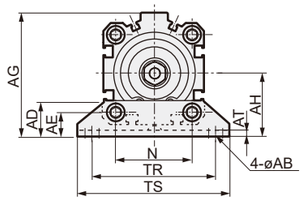
*1: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*2: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

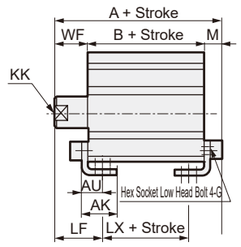
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5

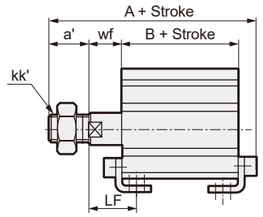
Outline Dimension Drawing (Bore size: ø32 to ø50)

● Axial Foot (LB)
SSD2-Y(L)-32 to 50-LB





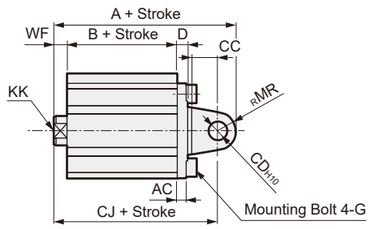
For rod end male thread

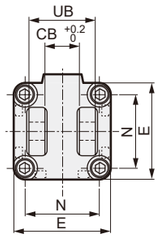


Code / Bore Size (mm)	Common dimension													
	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2

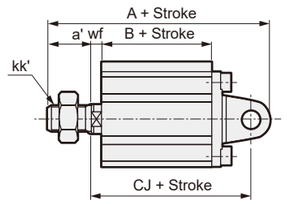
Code / Bore Size (mm)	For female thread								For male thread								
	WF	LF	Dimension with switch			Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
			A	B	LX	A	B	LX					A	B	LX	A	B	LX
ø32	17	25	57.2	33	17	47.2	23	7	23.5	M14 × 1.5	15	23	78.7	33	17	68.7	23	7
ø40	17	25	63.7	39.5	23.5	53.7	29.5	13.5	23.5	M14 × 1.5	15	23	85.2	39.5	23.5	75.2	29.5	13.5
ø50	18	29.5	66.7	40.5	17.5	56.7	30.5	7.5	28.5	M18 × 1.5	15	26.5	92.2	40.5	17.5	82.2	30.5	7.5

● Double Knuckle Clevis (CB)
SSD2-Y(L)-32 to 50-CB





For rod end male thread

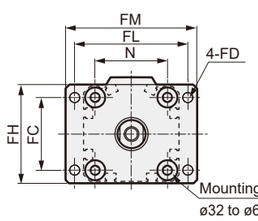


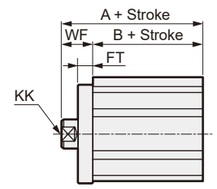
Code / Bore Size (mm)	Common dimension										
	AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44

Code / Bore Size (mm)	For female thread							For male thread								
	WF	Dimension with switch			Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
		A	B	CJ	A	B	CJ				A	B	CJ	A	B	CJ
ø32	7	70	33	60	60	23	50	23.5	M14 × 1.5	5	91.5	33	58	81.5	23	48
ø40	7	78.5	39.5	68.5	68.5	29.5	58.5	23.5	M14 × 1.5	5	100	39.5	66.5	90	29.5	56.5
ø50	8	90.5	40.5	76.5	80.5	30.5	66.5	28.5	M18 × 1.5	5	116	40.5	73.5	106	30.5	63.5

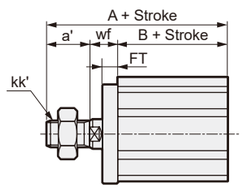
Outline Dimension Drawing (Bore size: ø32 to ø50)

● Rod Side Flange (FA)
SSD2-Y(L)-32 to 50-FA





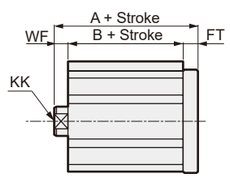
For rod end male thread

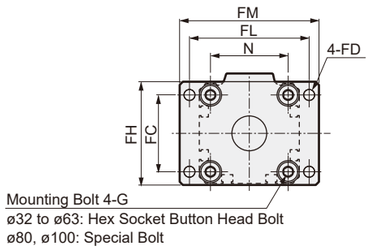


Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50

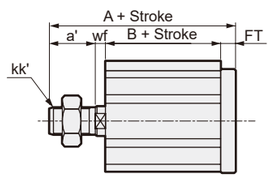
Code / Bore Size (mm)	For female thread					For male thread					
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø32	17	50	33	40	23	23.5	M14 × 1.5	15	71.5	33	61.5	23
ø40	17	56.5	39.5	46.5	29.5	23.5	M14 × 1.5	15	78	39.5	68	29.5
ø50	18	58.5	40.5	48.5	30.5	28.5	M18 × 1.5	15	84	40.5	74	30.5

● Head Side Flange (FB)
SSD2-Y(L)-32 to 50-FB





For rod end male thread

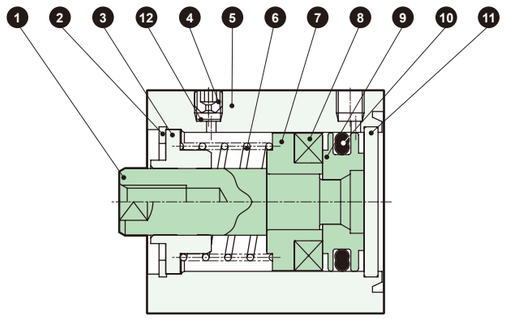


Code / Bore Size (mm)	Common dimension								
	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50

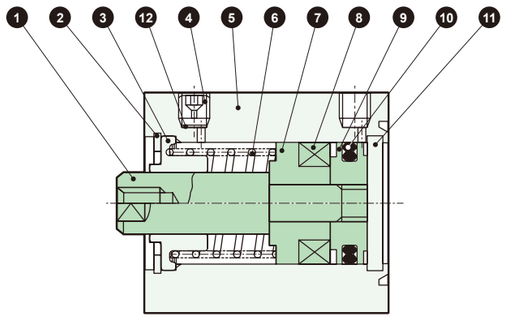
Code / Bore Size (mm)	For female thread					For male thread					
	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A	B				A	B	A	B
ø32	7	48	33	38	23	23.5	M14 × 1.5	5	69.5	33	59.5	23
ø40	7	54.5	39.5	44.5	29.5	23.5	M14 × 1.5	5	76	39.5	66	29.5
ø50	8	57.5	40.5	47.5	30.5	28.5	M18 × 1.5	5	83	40.5	73	30.5

Internal Structure Diagram/Material

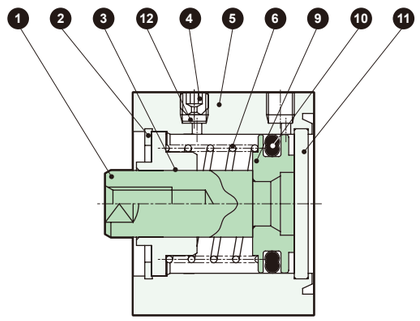
● SSD2-XL-12 to 32 (Single Acting, Push Type with Switch)



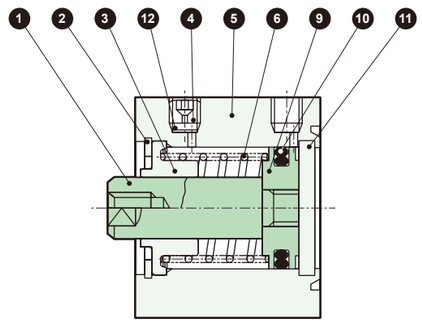
● SSD2-XL-40, 50 (Single Acting, Push Type with Switch)



● SSD2-X-12 to 32 (Single Acting, Push Type)



● SSD2-X-40, 50 (Single Acting, Push Type)

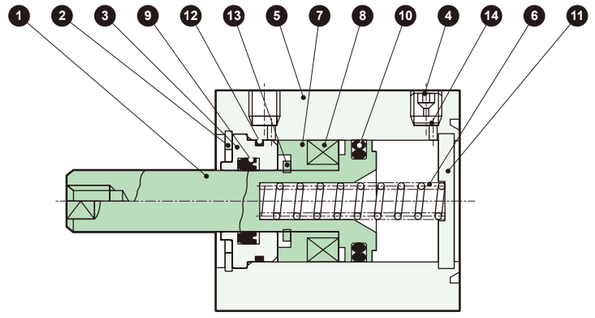


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	7	Spacer	Aluminum Alloy	Chromate
				8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Alumite	10	Piston Packing	Nitrile Rubber	
4	Plug	Stainless Steel		11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized				
6	Coil Spring	Piano Wire	Electrodeposition Coating	12	Stainless Steel Wire Mesh	Stainless Steel	

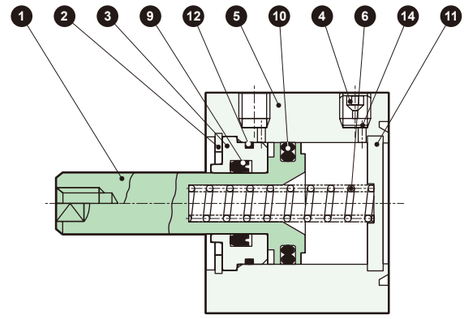
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

● SSD2-YL (Single Acting, Retracting Type with Switch)



● SSD2-Y (Single Acting, Retracting Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		9	Rod Packing	Nitrile Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Aluminum Alloy	Alumite	11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
4	Plug	Stainless Steel					
5	Cylinder Body	Aluminum Alloy	Hard Anodized	12	Metal gasket	Nitrile Rubber	
6	Coil Spring	Piano Wire	Electrodeposition Coating	13	Round S-type retaining ring	Steel	Zinc phosphate
7	Spacer	Aluminum Alloy	Chromate	14	Stainless Steel Wire Mesh	Stainless Steel	
8	Magnet	Plastic					

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

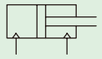


Compact Cylinder Double Acting, Heat Resistant Type

SSD2-T1 Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-T1 – 12 – [ ] – 5 – N – LB – I

Model No. | ❶ Bore Size | ❷ Piping thread type | ❸ Stroke | ❹ Option | ❺ Mounting type | ❻ Accessories

❶Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 below for details.

❹Option

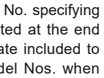
Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
M	Piston Rod Material (Stainless Steel)	

*1

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❺Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 17, 18, 20, 21. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❻Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❹Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *2		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *1		Every 1 mm									

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*2: For minimum stroke for ❺ mounting type LB, refer to P. 17, 20.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-T1 – ..... – XP5

Specifications

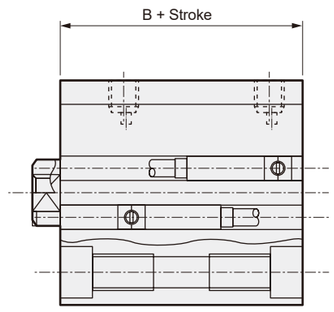
Item	SSD2-T1									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	5 to 150									
Port Size	M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not Available									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32, 5 stroke, the port size will be M5.

About Intermediate Stroke

● SSD2-T1 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to Model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-T-32-38 A +2 mm spacer is added to the standard cylinder SSD2-T32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5	10	15	20	25	30	35	40	45	50	75	100
ø12	36	44	53	61	70	72	-	-	-	-	-	-
ø16	48	59	69	80	91	102	-	-	-	-	-	-
ø20	63	75	88	101	113	126	139	152	165	203	-	-
ø25	87	102	118	134	150	165	181	197	213	228	-	-
ø32	122	144	166	188	209	231	253	275	297	318	494	604
ø40	183	210	236	263	290	316	342	369	395	472	646	776
ø50	-	341	383	425	467	510	552	594	636	678	1025	1235
ø63	-	507	562	617	672	727	782	838	893	948	1438	1713
ø80	-	928	1015	1101	1188	1274	1361	1448	1535	1621	2401	2833
ø100	-	1433	1547	1660	1774	1888	2002	2115	2229	2343	3406	3973

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

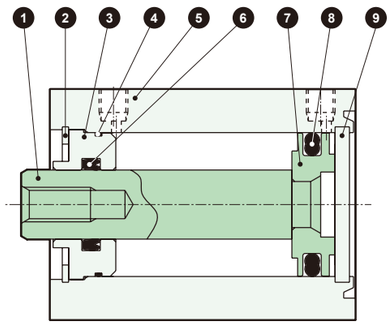
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

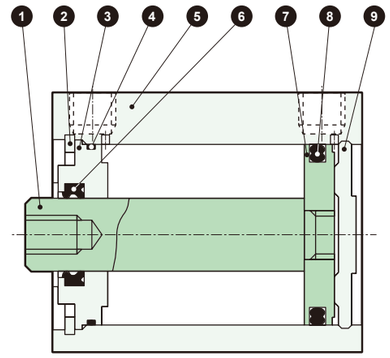
Same as double acting/single rod type. Refer to P. 16 to 21.

Internal Structure Diagram/Material

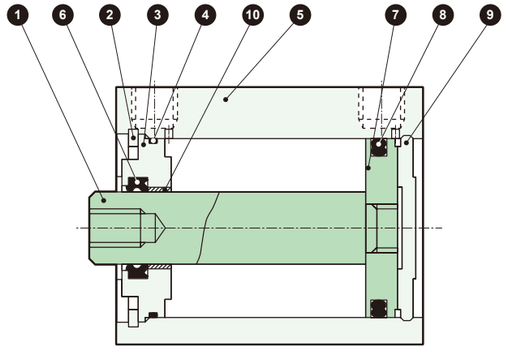
● SSD2-T1-12 to 25



● SSD2-T1-32 to 50



● SSD2-T1-63 to 100



Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø100: Steel	ø16 to ø100: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	ø12 to ø50: Alumite ø63 to ø100: Chromate
4	Rod metal gasket	Fluoro Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
6	Rod Packing	Fluoro Rubber	
7	Piston	Aluminum Alloy	Chromate
8	Piston Packing	Fluoro Rubber	
9	Cover	ø12 to ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite
10	Bushing	Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

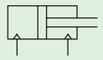


Compact Cylinder
Double Acting with Heat Resistant Cylinder Switch

SSD2-T1L Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-T1L - 16 - [ ] - 10 - ET0H - D - N - LB - I

Model No.
1 Bore Size
2 Piping thread type
3 Stroke
4 Switch Model No.
5 Number of Switches
6 Option
7 Mounting type
8 Accessories

1 Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

2 Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø63)
NN	NPT thread (Custom product) (ø32 to ø63)
GN	G thread (Custom product) (ø32 to ø63)

3 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø16	10 (20) to 30	Every 1 mm
ø20	15 (25) to 50	
ø25	15 (20) to 50	
ø32 to ø63	15 (20) to 100	

Note: Refer to Appendix 1 on the following page for details.

4 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire (1 m) Straight	Lead wire (1 m) L-shape	
Reed	1-Color Heat Resistant	2-wire	110	12/24	7 to 20	5 to 50	ET0H	ET0V	

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

7 Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 87 to 89. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

8 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: 6 Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	10	●						
	15	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●
	35		●	●	●	●	●	●
	40		●	●	●	●	●	●
	45		●	●	●	●	●	●
	50		●	●	●	●	●	●
	70				●	●	●	●
	100				●	●	●	●
Minimum Stroke (mm) *1		10 (20)	15 (25)	15 (20)	15 (20)			
Maximum Stroke (mm)		30	50		100			
Intermediate Stroke *2		Every 1 mm						

*1: ( ) indicates when 2 switches are included. For minimum stroke with switch, refer to P. 84.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-T1L - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - ET0H

4 Switch Model No.

Specifications

Item	SSD2-T1L						
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.1						0.05
Proof pressure MPa	1.6						
Ambient Temperature °C	5 to 150 *1						
Port Size	M5			Rc1/8		Rc1/4	
Stroke Tolerance mm	$^{+1.0}_{0}$						
Operating Piston Speed mm/s	50 to 500						50 to 300
Cushion	None						
Lubrication *2	-						

*1: In an environment with an ambient temperature of 150°C, external leakage will gradually occur after about 500,000 cycles. Please be careful.
*2: Periodically apply heat-resistant grease.

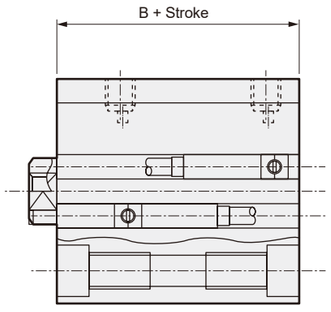
Minimum Stroke with Switch

Bore Size (mm)	With 1 Switch	With 2 Switches
ø16	10	20
ø20	15	25
ø25		20
ø32	15	
ø40		
ø50		
ø63		

About Intermediate Stroke

● SSD2-T1L Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	16	10 to 29
	20 to 25	15 to 49
	32 to 63	15 to 99
Model Number Indication Example	Model No.: SSD2-T1L-32-38 A +2 mm spacer is added to the standard cylinder SSD2-T1L-32-40 to make it 38 mm. B + Stroke = 33 + 40 = 73	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø16	71	127	82	127	92	137	103	148	114	159	125	170	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^3
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3

Mounting Bracket Model No. Notation Method

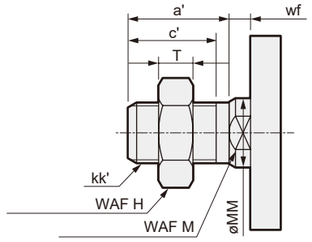
Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Foot (LB)	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63
Flange (FA/FB)	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63
Double Clevis (CB)	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63

Note: Foot type mounting brackets are 2 pcs/set.

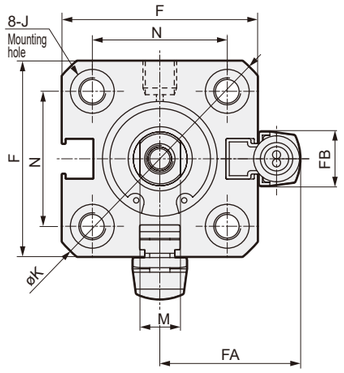
Outline Dimension Drawing (Bore size: ø16 to ø63)

● SSD2-T1L-16 to 63

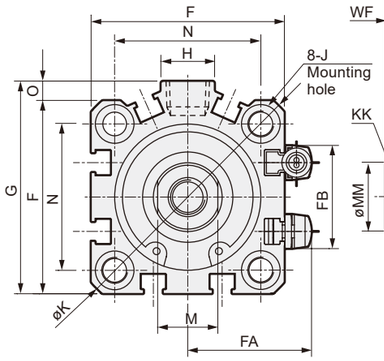
● Rod end male thread part

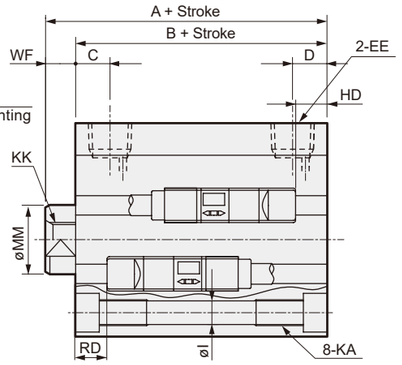


· ø16



· ø20 to ø63





Code / Bore Size (mm)	Dimension with switch																			
	A *1	B *1	C	D	EE	F	FA	FB	G	H	I	J	K	KA	KK	M	MM	N	O	WF
ø16	35.5	32	5.5	5.5	M5	29	21	8	-	-	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	-	3.5
ø20	34	29.5	8	5.5	M5	36	24.5	16	-	-	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	-	4.5
ø25	37.5	32.5	11	6	M5	40	26.5	17	-	-	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	-	5
ø32	40	33	8	8	Rc1/8	45	29	24	49.5	12.5	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	46.5	39.5	12	8.5	Rc1/8	52	32.5	31	57	15	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	48.5	40.5	10.5	10.5	Rc1/4	64	38.5	32	71	18	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	54	46	13	11	Rc1/4	77	45	32	84	23	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8

Switch dimension / Bore Size (mm)	Reed ET0H/ETOV	
	RD	HD
ø16	0	0.5
ø20	0	0
ø25	0.5	0
ø32	2	0.5
ø40	7	1.5
ø50	6	1.5
ø63	5.5	5.5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

*2: Switches cannot be mounted on the piping port surface of bore sizes ø20, ø25.

***3: For outline dimension drawings of individual accessories, refer to P. 34.**

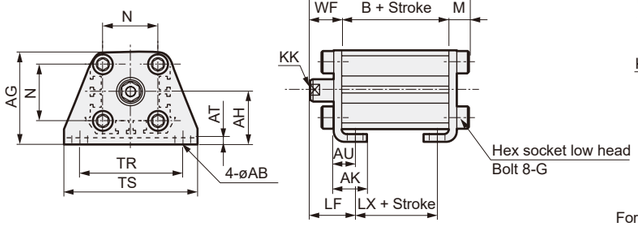
***4: For dimensions with each switch, refer to P. 300 to 309.**

● Rod end male thread part

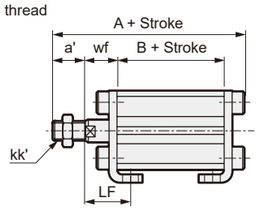
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5

Outline Dimension Drawing (Bore size: ø16 to ø25)

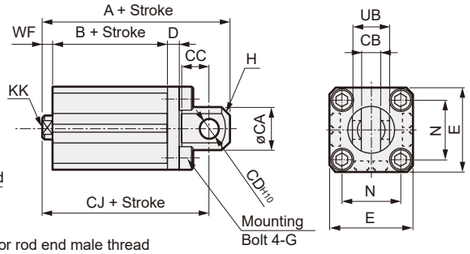
● Axial Foot (LB) With Switch
SSD2-T1L-16 to 25-LB SSD2-T1L-16 to 25-CB



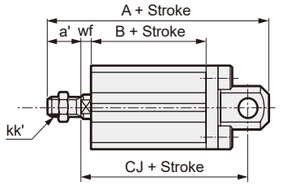
For rod end male thread



● Double Knuckle Clevis (CB) With Switch



For rod end male thread



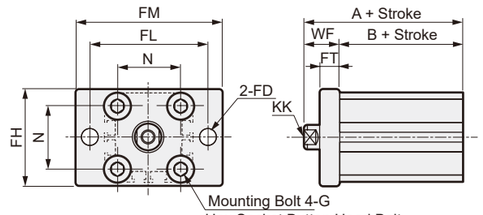
Code / Bore Size (mm)	Common dimension										
	AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2

Code / Bore Size (mm)	For female thread					For male thread					
	WF	LF	A	B	LX	a'	kk'	wf	LF	A	B	LX
ø16	13.5	19.5	50.3	32	20	12	M6	13.5	19.5	62.3	32	20
ø20	14.5	20.5	51.2	29.5	17.5	14	M8	14.5	20.5	65.2	29.5	17.5
ø25	15	22.5	54.7	32.5	17.5	17.5	M10 × 1.25	15	22.5	72.2	32.5	17.5

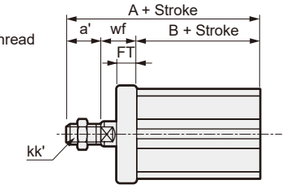
Code / Bore Size (mm)	Common dimension									
	CA	CB	CC	CD	D	E	G	KK	H	N	UB
ø16	15	6.6 +0.3 0	8	5	5	29	M4×12	M4 depth 8	C2	20	12 -0.1 -0.4
ø20	20	8.2 +0.2 0	12	8	5	36	M6×16	M5 depth 7	C4	25.5	16 -0.1 -0.3
ø25	24	10.2 +0.2 0	14	10	5	40	M6×16	M6 Depth 12	C5	28	20 -0.1 -0.3

Code / Bore Size (mm)	For female thread				For male thread					
	WF	A	B	CJ	a'	kk'	wf	A	B	CJ
ø16	3.5	56.5	32	50.5	12	M6	3.5	68.5	32	50.5
ø20	4.5	61	29.5	52	14	M8	4.5	75	29.5	52
ø25	5	67.5	32.5	57.5	17.5	M10 × 1.25	5	85	32.5	57.5

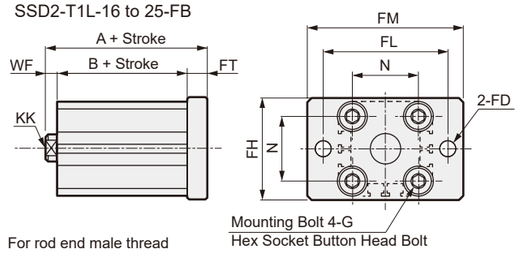
● Rod Side Flange (FA) With Switch
SSD2-T1L-16 to 25-FA



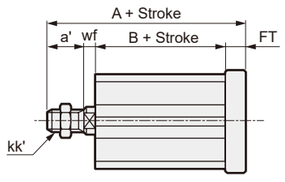
For rod end male thread



● Head Side Flange (FB) With Switch
SSD2-T1L-16 to 25-FB



For rod end male thread



Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	G	KK	N
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28

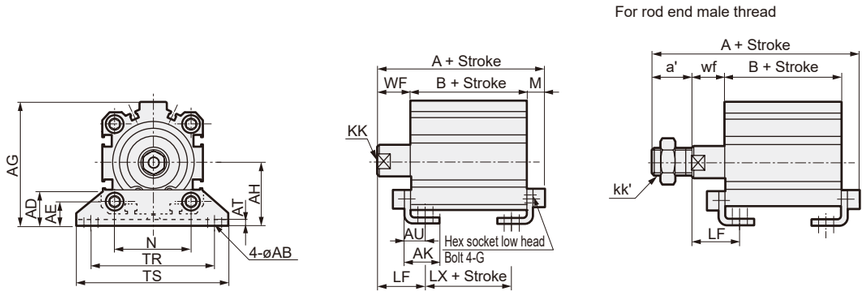
Code / Bore Size (mm)	For female thread			For male thread				
	WF	A	B	a'	kk'	wf	A	B
ø16	13.5	45.5	32	12	M6	13.5	57.5	32
ø20	14.5	44	29.5	14	M8	14.5	58	29.5
ø25	15	47.5	32.5	17.5	M10 × 1.25	15	65	32.5

Code / Bore Size (mm)	Common dimension							
	FD	FH	FL	FM	FT	G	KK	N
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28

Code / Bore Size (mm)	For female thread			For male thread				
	WF	A	B	a'	kk'	wf	A	B
ø16	3.5	41	32	12	M6	3.5	53	32
ø20	4.5	42	29.5	14	M8	4.5	56	29.5
ø25	5	45.5	32.5	17.5	M10 × 1.25	5	63	32.5

Outline Dimension Drawing (Bore size: ø32 to ø63)

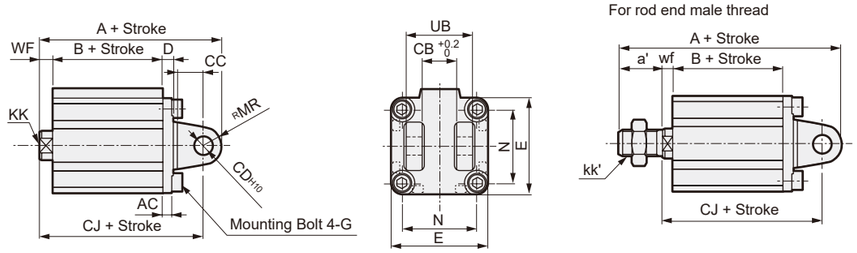
● Axial Foot (LB)
SSD2-T1L-32 to 63-LB



Code	Common dimension													
Bore Size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2

Code	For female thread					For male thread						
Bore Size (mm)	WF	LF	A	B	LX	a'	kk'	wf	LF	A	B	LX
ø32	17	25	57.2	33	17	23.5	M14 × 1.5	15	23	78.7	33	17
ø40	17	25	63.7	39.5	23.5	23.5	M14 × 1.5	15	23	85.2	39.5	23.5
ø50	18	29.5	66.7	40.5	17.5	28.5	M18 × 1.5	15	26.5	92.2	40.5	17.5
ø63	18	31	73.2	46	20	28.5	M18 × 1.5	15	28	98.7	46	20

● Double Knuckle Clevis (CB)
SSD2-T1L-32 to 63-CB

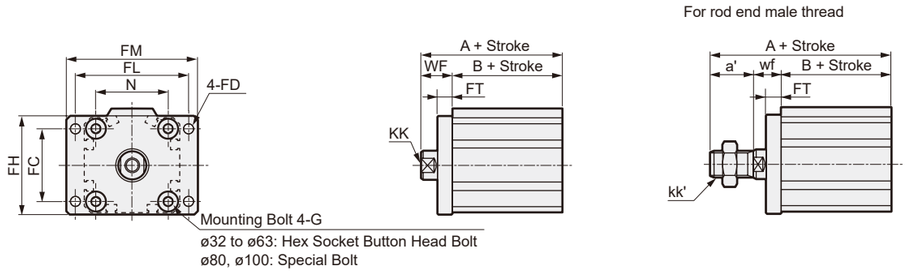


Code	Common dimension										
Bore Size (mm)	AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44

Code	For female thread				For male thread					
Bore Size (mm)	WF	A	B	CJ	a'	kk'	wf	A	B	CJ
ø32	7	70	33	60	23.5	M14 × 1.5	5	91.5	33	58
ø40	7	78.5	39.5	68.5	23.5	M14 × 1.5	5	100	39.5	66.5
ø50	8	90.5	40.5	76.5	28.5	M18 × 1.5	5	116	40.5	73.5
ø63	8	98	46	84	28.5	M18 × 1.5	5	123.5	46	81

Outline Dimension Drawing (Bore size: ø32 to ø63)

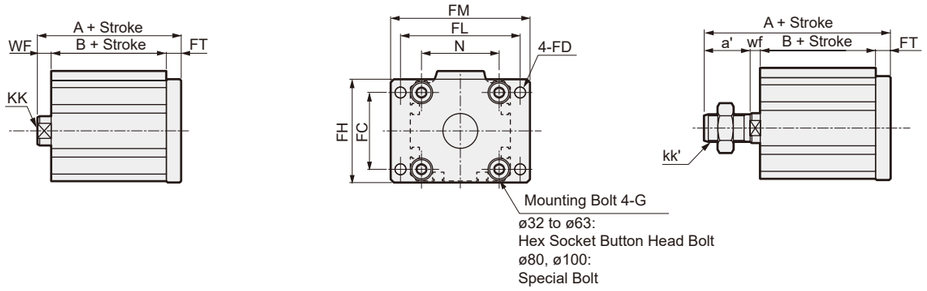
● Rod Side Flange (FA)
SSD2-T1L-32 to 50-FA



Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60

Code	For female thread			For male thread				
Bore Size (mm)	WF	A	B	a'	kk'	wf	A	B
ø32	17	50	33	23.5	M14 × 1.5	15	71.5	33
ø40	17	56.5	39.5	23.5	M14 × 1.5	15	78	39.5
ø50	18	58.5	40.5	28.5	M18 × 1.5	15	84	40.5
ø63	18	64	46	28.5	M18 × 1.5	15	89.5	46

● Head Side Flange (FB)
SSD2-T1L-32 to 50-FB

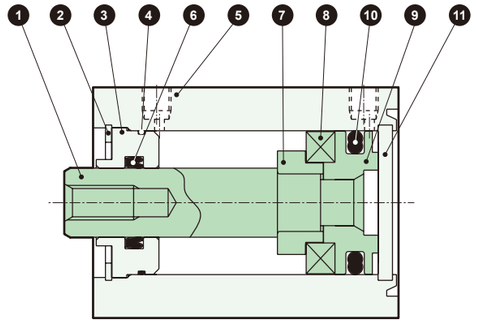


Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60

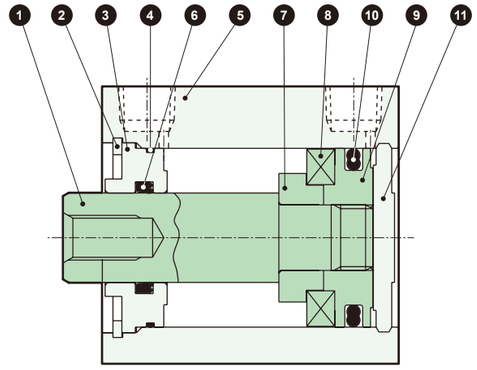
Code	For female thread			For male thread				
Bore Size (mm)	WF	A	B	a'	kk'	wf	A	B
ø32	7	48	33	23.5	M14 × 1.5	5	69.5	33
ø40	7	54.5	39.5	23.5	M14 × 1.5	5	76	39.5
ø50	8	57.5	40.5	28.5	M18 × 1.5	5	83	40.5
ø63	8	63	46	28.5	M18 × 1.5	5	88.5	46

Internal Structure Diagram/Material

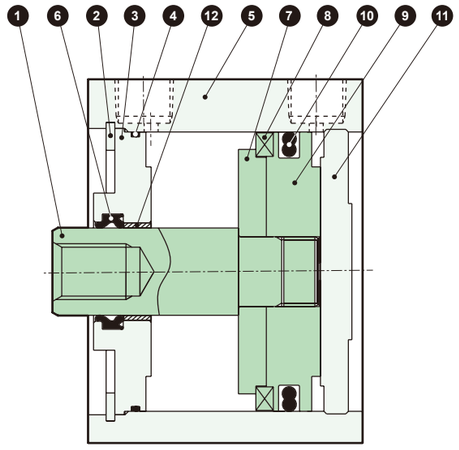
● SSD2-T1L-16 to 25



● SSD2-T1L-32 to 50



● SSD2-T1L-63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø16 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	ø32: Chromate
				8	Magnet		
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	ø16 to ø32: Aluminum alloy ø40 to ø63: Stainless steel	ø32: Chromate
3	Rod Metal	Aluminum Alloy	ø16 to ø50: Alumite ø63: Chromate	10	Piston Packing	Fluoro Rubber	
4	Rod metal gasket	Fluoro Rubber		11	Cover	ø16 to ø25: Stainless steel ø32 to ø63: Aluminum alloy	ø32 to ø100: Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized				
6	Rod Packing	Fluoro Rubber		12	Bushing	Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

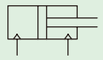


Compact Cylinder High Load Type with Rubber Air Cushion

SSD2-K-□C Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-K – 40 – ❷ – C – 10 ——— N – LB – I

Model No. ❶ ❷ With Rubber Air Cushion ❸ ❻ ❼ ❽

With Switch (Built-in magnet for switch)

SSD2-KL – 40 – ❷ – C – 10 – T0H – R – N – LB – I

Model No. ❶ Bore Size ❷ Piping thread type ❷ With Rubber Air Cushion ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting type ❽ Accessories

❶Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Port Thread Type

Code	Content
Blank	M5 (ø20 to ø25)
	Rc thread (ø32 to ø100)
N	NPT thread (Custom product) (ø32 to ø100)
G	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø20, ø25	5 to 50	Every 1 mm
ø32, ø40	5 to 100	
ø50 to ø100	10 to 100	

Note: Refer to Appendix 1 on the following page for details.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*5
	2-Color for AC Magnetic Field		—		—		T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20/7 to 10	5 to 50	T8H□	T8V□				●	●	●	●	●	*3

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T8□ switches cannot be mounted on ø20 to ø32.
*4: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*5: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*6: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*8 *7

*7: Only T2WLH, T2WLV can be selected.
*8: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø20 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❼Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 41, 42, 44, 45. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❽Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❻Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		5					10		
Maximum Stroke (mm)		50		100					
Intermediate Stroke *2		Every 1 mm							

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches attachable and minimum stroke, refer to P. 94.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3:For minimum stroke for ❼ mounting type LB, refer to P. 41, 44.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-K-□C – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H

❹ Switch Model No.

Specifications

Item	SSD-K-□C SSD-KL-*C (With Switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.25		0.2					
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$							
Operating Piston Speed mm/s	50 to 500					50 to 300		
Cushion	Rubber Air Cushion							
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Minimum Stroke with Switch (With 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø20	5	5	20
ø25			
ø32			15
ø40			
ø50			10
ø63		10	10
ø80			
ø100			

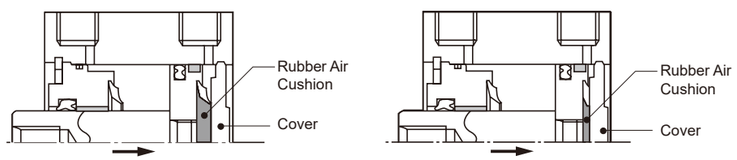
Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD2-K-□C Series

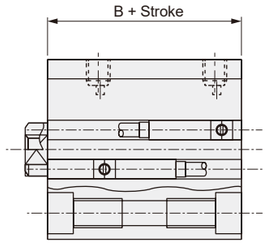
Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-K-32C-38 A +2 mm spacer is added to the standard cylinder SSD2-K-32C-40 to make it 38 mm. B + Stroke = 33 + 40 = 73	

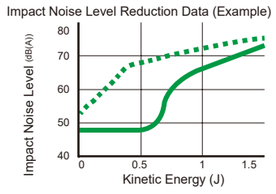
Rubber Air Cushion Mechanism

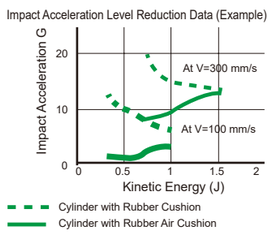


Explanation at Pull

When the piston operates and the rubber air cushion contacts the cover, a sealed air space is formed in the ■ part. The air in this sealed space is compressed as the piston operates and absorbs energy. At the stroke end, energy absorption due to compressive strain of the rubber cushion is also added.







Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²	2.51 × 10²	2.83 × 10²	3.14 × 10²
	Pull	-	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²	1.88 × 10²	2.12 × 10²	2.36 × 10²
ø25	Push	-	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²	3.93 × 10²	4.42 × 10²	4.91 × 10²
	Pull	-	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²	3.02 × 10²	3.40 × 10²	3.78 × 10²
ø32	Push	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²	6.43 × 10²	7.24 × 10²	8.04 × 10²
	Pull	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62×10²	4.22 × 10²	4.83 × 10²	5.43×10²	6.03 × 10³
ø40	Push	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²	1.01 × 10³	1.13 × 10³	1.26 × 10³
	Pull	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²	8.44 × 10²	9.50 × 10²	1.06 × 10³
ø50	Push	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³	1.57 × 10³	1.77 × 10³	1.96 × 10³
	Pull	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³	1.32 × 10³	1.48 × 10³	1.65 × 10³
ø63	Push	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³	2.49 × 10³	2.81 × 10³	3.12 × 10³
	Pull	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³	2.24 × 10³	2.52 × 10³	2.80 × 10³
ø80	Push	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³	4.02 × 10³	4.52 × 10³	5.03 × 10³
	Pull	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³	3.63 × 10³	4.08 × 10³	4.54 × 10³
ø100	Push	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³	6.28 × 10³	7.07 × 10³	7.85 × 10³
	Pull	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³	5.72 × 10³	6.43 × 10³	7.15 × 10³

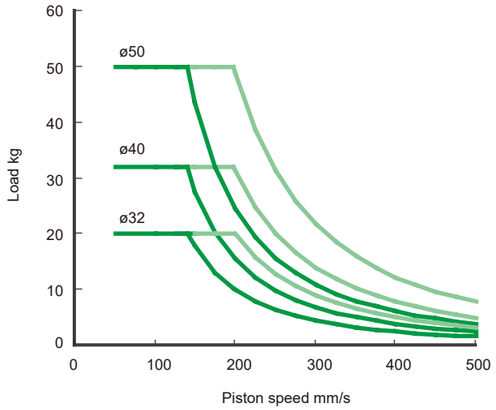
Mounting Bracket Model No. Notation Method

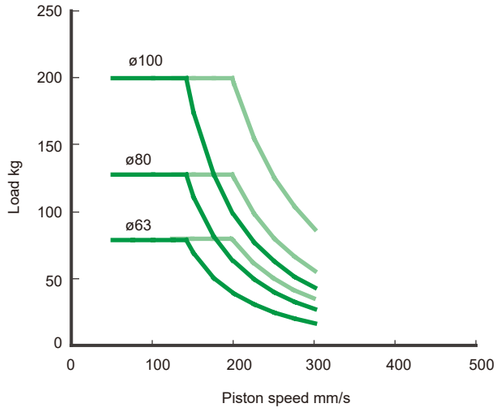
Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

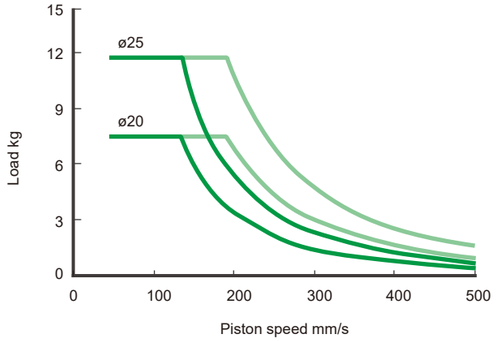
Bore Size (mm) / Mounting bracket	ø100
Foot (LB)	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

[Allowable Energy Value]







The usable range is to the lower left of the curve. It can be used within the range indicated by the ——— line in the diagram , but it is recommended to use it within the range of the solid line to achieve a more effective noise reduction effect.

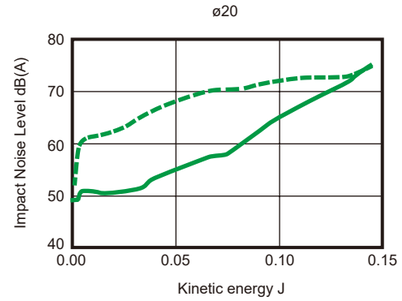
Technical Data

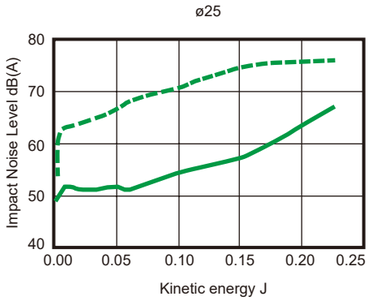
[Performance Comparison of Impact Noise Level]

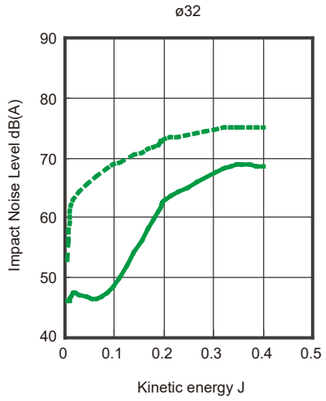
Standard rubber cushion product: - - -
Rubber air cushion product: ———

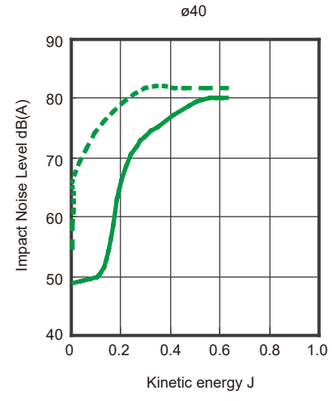
The data is a comparison example under the following conditions.
Values change depending on frame rigidity, etc., so they are not guaranteed values.

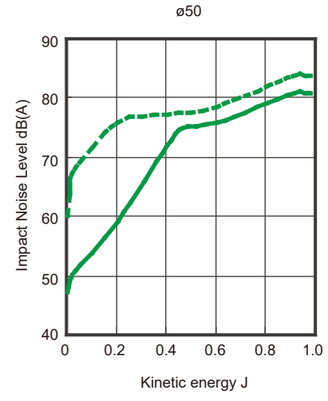
(Test conditions)
Cylinder type SSD2
Mounting direction of cylinder:
Vertical with rod upward
Cylinder supply pressure: 0.5 MPa
Sound level meter measurement position:
1 m from sample

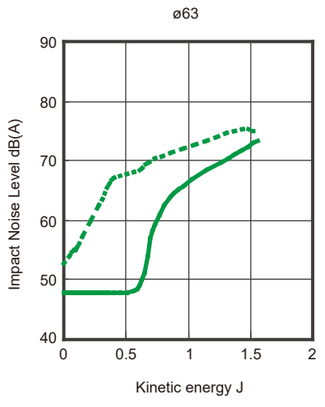


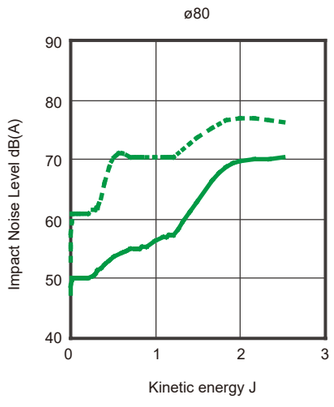


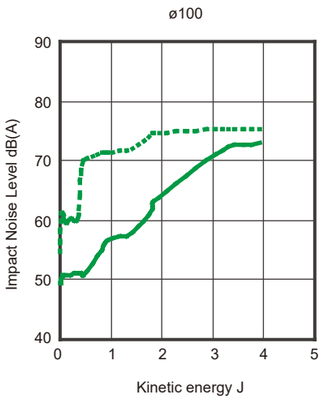










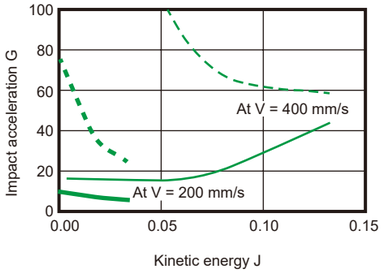


Technical Data

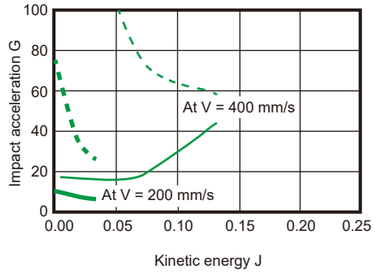
[Performance Comparison of Impact Acceleration]

Standard rubber cushion product: - - -
Rubber air cushion product: ———

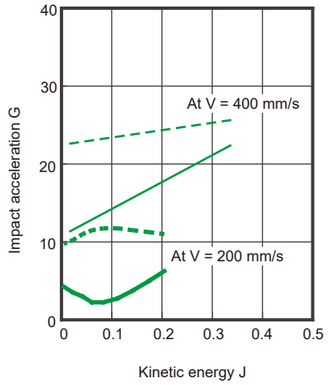
ø20



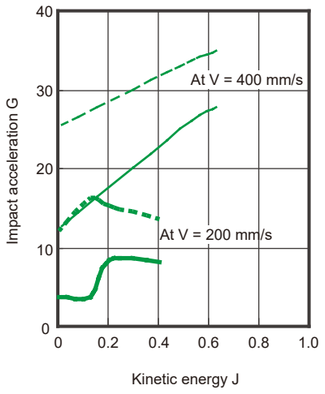
ø25



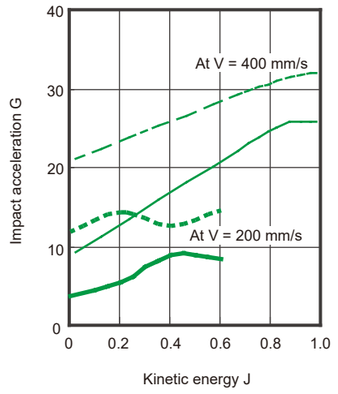
ø32



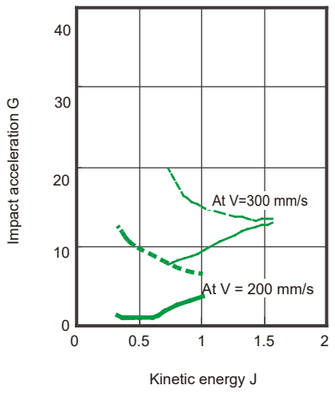
ø40



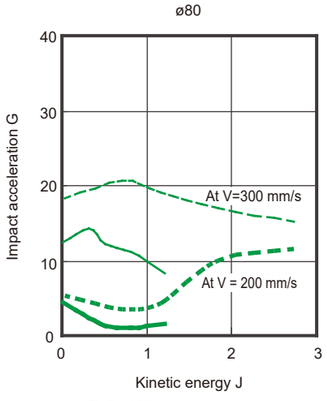
ø50



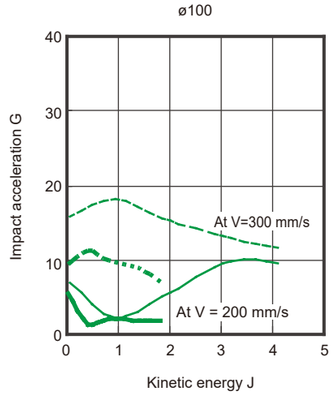
ø63



ø80



ø100

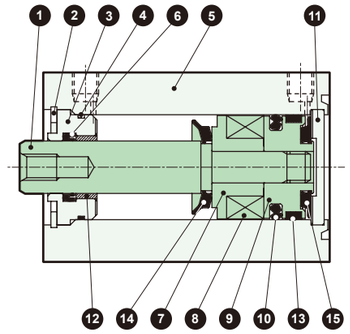


Outline Dimension Drawing

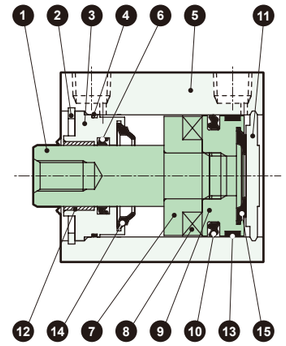
Same as Double Acting, High Load Type SSD2-K Series. Refer to P. 40 to P. 45.

Internal Structure Diagram/Material

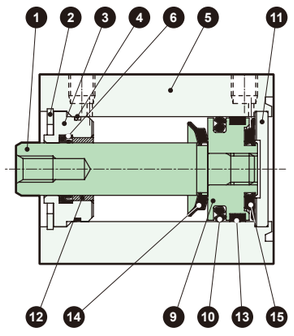
● SSD2-KL-20C, 25C
(Double Acting, High Load Type, Rubber Air Cushion with Switch)



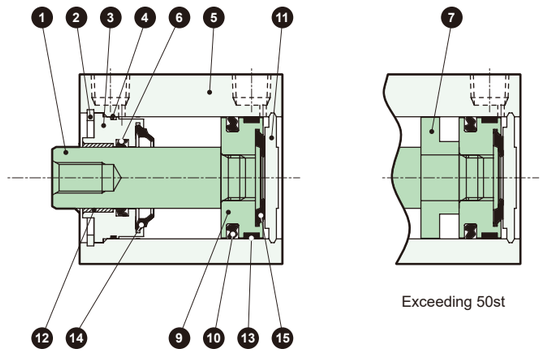
● SSD2-KL-32C to 100C
(Double Acting, High Load Type, Rubber Air Cushion with Switch)



● SSD2-K-20C, 25C
(Double Acting, High Load Type with Rubber Air Cushion)



● SSD2-K-32C to 100C
(Double Acting, High Load Type, Rubber Air Cushion)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø100: Steel	Industrial Hard Chrome Plating	8	Magnet	Plastic	
				9	Piston	Aluminum Alloy	Chromate
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Aluminum Alloy	ø20 to ø50: Alumite ø63 to ø100: Chromate	11	Cover	ø20 to 25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite
4	Rod metal gasket	Nitrile Rubber		12	Bushing	Bearing Alloy	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Wear Ring	Polyacetal	
6	Rod Packing	Nitrile Rubber		14	Rubber air cushion (R)	Special rubber	
7	Spacer	Aluminum Alloy	Chromate	15	Rubber air cushion (H)	Special rubber	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting with Fall Prevention

SSD2-Q Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-Q – 20 – 10 – R ——— NMO – LB – I

Model No. ❶ ❷ ❸ ❹ ❼ ❽ ❾

With Switch (Built-in magnet for switch)

SSD2-QL – 20 – 10 – R – T0H – R – NMO – LB – I

Model No. ❶ Bore Size ❷ Piping thread Type ❸ Stroke ❹ Fall prevention mechanism ❺ Switch Model No. ❻ Number of Switches ❼ Option ❽ Mounting type ❾ Accessories

❶ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Port Thread Type:

Code	Content
Blank	M5 (ø20 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸ Stroke (mm)

Bore Size	Stroke
ø20 to ø63	10 to 100
ø80, ø100	25 to 100

Note: Refer to Appendix 1 on the following page for details.

❹ Drop prevention mechanism

Code	Content	
R	With rod side fall prevention	
H	With head side fall prevention	

❺ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp / Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead wire type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	●	●	●	●	●	●	●	●	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*4: Switches other than the model Nos. listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

*5: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M0	Non-Locking Manual Device (Release bolt attached)	
*1 M1	Locking Manual Device	

*1: If "M0" or "M1" is not selected as an option, only the non-locking manual device will be provided. Release bolt is not included.

❽ Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 107, P. 108, P. 110, P. 111. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❾ Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	10	●	●	●	●	●	●		
	15	●	●	●	●	●	●		
	20	●	●	●	●	●	●		
	25	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●	●
Min. Stroke (mm)		10						25	
Maximum Stroke (mm)		100							

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-Q-..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H

❺ Switch Model No.

Specifications

Item	SSD2-Q / SSD2-QL (With Switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Drop Prevention Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.15							
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke Tolerance mm	$^{+2.5}_{0}$							
Operating Piston Speed mm/s	50 to 500					50 to 300		
Cushion	Rubber Cushion							
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Fall prevention mechanism	Rod side or head side							
Holding Force (N)	Max. Thrust × 0.7							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Minimum Stroke with Switch (With 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø20	10	10	20
ø25			
ø32			
ø40			
ø50			
ø63			15
ø80			10
ø100	25	25	25

Before use, be sure to read "Precautions for Use" (Fall Prevention Type) P. 322 to 327.

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²	2.51 × 10²	2.83 × 10²	3.14 × 10²
	Pull	35.3	47.1	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²	1.88 × 10²	2.12 × 10²	2.36 × 10²
ø25	Push	73.6	98.2	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²	3.93 × 10²	4.42 × 10²	4.91 × 10²
	Pull	56.7	75.6	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²	3.02 × 10²	3.40 × 10²	3.78 × 10²
ø32	Push	1.21 × 10²	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²	6.43 × 10²	7.24 × 10²	8.04 × 10²
	Pull	90.5	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62 × 10²	4.22 × 10²	4.83 × 10²	5.43 × 10²	6.03 × 10²
ø40	Push	1.88 × 10²	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²	1.01 × 10³	1.13 × 10³	1.26 × 10³
	Pull	1.58 × 10²	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²	8.44 × 10²	9.50 × 10²	1.06 × 10³
ø50	Push	2.95 × 10²	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³	1.57 × 10³	1.77 × 10³	1.96 × 10³
	Pull	2.47 × 10²	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³	1.32 × 10³	1.48 × 10³	1.65 × 10³
ø63	Push	4.68 × 10²	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³	2.49 × 10³	2.81 × 10³	3.12 × 10³
	Pull	4.20 × 10²	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³	2.24 × 10³	2.52 × 10³	2.80 × 10³
ø80	Push	7.54 × 10²	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³	4.02 × 10³	4.52 × 10³	5.03 × 10³
	Pull	6.80 × 10²	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³	3.63 × 10³	4.08 × 10³	4.54 × 10³
ø100	Push	1.18 × 10³	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³	6.28 × 10³	7.07 × 10³	7.85 × 10³
	Pull	1.07 × 10³	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³	5.72 × 10³	6.43 × 10³	7.15 × 10³

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

● With rod side fall prevention (Unit: g)

Stroke (mm)	10		15		20		25		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	201	242	213	254	226	267	238	279	330	370	392	433	455	495
ø25	274	315	290	331	306	347	322	363	439	480	519	560	599	640
ø32	430	474	451	495	473	517	494	538	602	646	709	753	817	861
ø40	632	681	658	708	685	734	711	761	844	893	976	1026	1109	1158
ø50	1096	1147	1138	1189	1180	1231	1222	1273	1432	1483	1642	1693	1852	1903
ø63	1609	1663	1664	1718	1719	1773	1774	1828	2049	2103	2324	2378	2599	2653
ø80	-	-	-	-	-	-	3822	3882	4255	4315	4904	4964	5336	5396
ø100	-	-	-	-	-	-	5769	5835	6339	6405	7194	7260	7764	7830

● With head side fall prevention (Unit: g)

Stroke (mm)	10		15		20		25		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	217	258	230	270	242	283	255	295	330	370	392	433	455	495
ø25	295	336	311	352	327	368	343	384	439	480	519	560	599	640
ø32	462	506	484	528	505	549	527	571	634	678	742	786	849	893
ø40	688	737	714	763	741	790	767	816	900	949	1032	1081	1165	1214
ø50	1180	1231	1222	1273	1264	1315	1306	1357	1516	1567	1726	1777	1936	1987
ø63	1675	1729	1730	1784	1785	1839	1840	1894	2115	2169	2390	2444	2665	2719
ø80	-	-	-	-	-	-	3952	4012	4385	4445	4904	4964	5336	5396
ø100	-	-	-	-	-	-	5940	6006	6510	6576	7194	7260	7764	7830

Mounting Bracket Model No. Notation Method

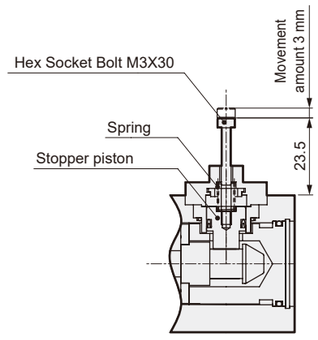
Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

Bore Size (mm) / Mounting bracket	ø100
Foot (LB)	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

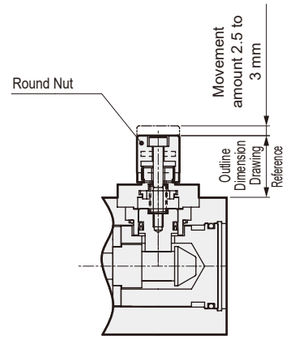
[Explanation of Manual Device]

● Manual override of non-locking (option code: M0)



Screw the hex socket bolt (M3X30) into the stopper piston and pull the bolt with a force of 20N or more, the stopper piston will move and the lock will be released. (Work with no load horizontal mounting, or when the opposite side port is pressurized.) When you release your hand from the bolt, the built-in spring returns the stopper piston to its original position, and if it enters the lock groove, the piston will be locked.

● Locking manual override (option code: M1)



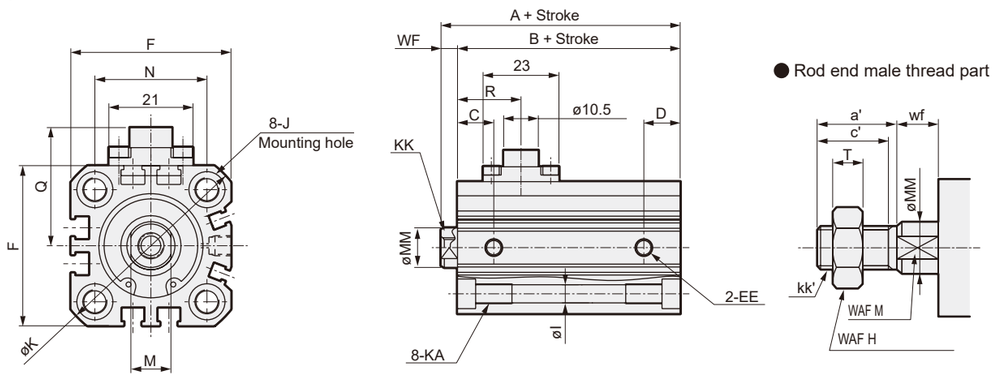
Turning the round nut to the left (counterclockwise) moves the stopper piston and releases the lock. Turning it to the right (clockwise) to the lock position returns the stopper piston, and if it enters the lock groove, the piston will be locked. When locking, if the stopper piston's engagement with the groove is shallow, it may cause damage. Be sure to securely screw the round nut all the way in.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

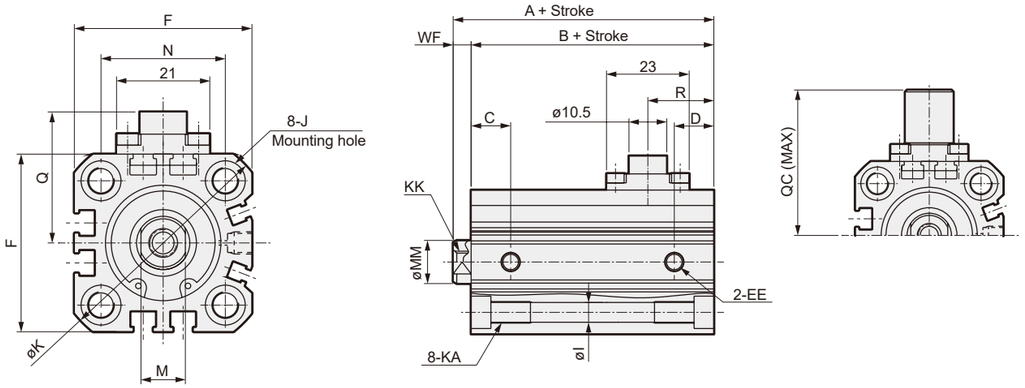
Outline Dimension Drawing (Bore size: ø20, ø25)

● SSD2-Q(L)-20 to 25-R
*Outline dimensions are common for both without and with switch.



● Rod end male thread part

● SSD2-Q(L)-20 to 25-H
*Outline dimensions are common for both without and with switch.



Code / Bore Size (mm)	Common dimension														With rod side fall prevention mechanism					With head side fall prevention mechanism				
	EE	F	I	J	K	KA	KK	M	MM	N	WF *1	Q	QC		A *1	B *1	C	D	R	A *1	B *1	C	D	R
ø20	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5 (14.5)	28.5	40		59 (80.5)	54.5 (66)	9.5	8	18.6	65.5 (80.5)	61 (66)	9.5	8	17.3
ø25	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5 (15)	29.5	41		62.5 (84)	57.5 (69)	12	8.5	19.3	69 (84)	64 (69)	12	8.5	18.4

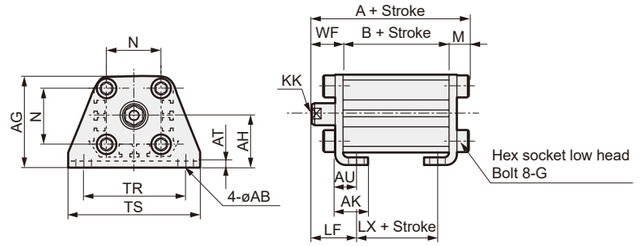
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf *1
ø20	14	12	13	M8	8	10	5	4.5 (14.5)
ø25	17.5	15	17	M10 × 1.25	10	12	6	5 (15)

*1: Values in ( ) are for when exceeding 25 strokes.
*2: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

Outline Dimension Drawing (Bore size: ø20, ø25)

● Axial Foot (LB)
SSD2-Q(L)-20, 25-LB

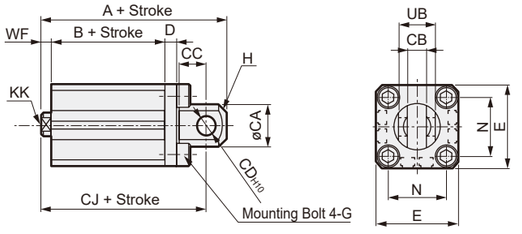


Code / Bore Size (mm)	Common dimension														SSD2-Q-R (For female thread)						SSD2-Q-R (For male thread)								
	AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	WF	LF	Dimension with/without switch A *1	Dimension with/without switch B *1	Dimension with/without switch LX *1	a'	kk'	wf	LF	Dimension with/without switch A *1	Dimension with/without switch B *1	Dimension with/without switch LX *1
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2	14.5	20.5	76.2 (87.7)	54.5 (66)	42.5 (54)	14	M8	14.5	20.5	90.2 (101.7)	54.5 (66)	42.5 (54)
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2	15	22.5	79.7 (91.2)	57.5 (69)	42.5 (54)	17.5	M10 × 1.25	15	22.5	97.2 (108.7)	57.5 (69)	42.5 (54)

Code / Bore Size (mm)	SSD2-Q-H (For female thread)					SSD2-Q-H (For male thread)						
	WF *1	LF	Dimension with/without switch A *1	Dimension with/without switch B *1	Dimension with/without switch LX *1	a'	kk'	wf *1	LF	Dimension with/without switch A *1	Dimension with/without switch B *1	Dimension with/without switch LX *1
ø20	14.5	20.5	82.7 (87.7)	61 (66)	49 (54)	14	M8	14.5	20.5	96.7 (101.7)	61 (66)	49 (54)
ø25	15	22.5	86.2 (91.2)	64 (69)	49 (54)	17.5	M10 × 1.25	15	22.5	103.7 (108.7)	64 (69)	49 (54)

*1: Dimensions in ( ) are values when exceeding 25 strokes.

● Double Knuckle Clevis (CB)
SSD2-Q(L)-20, 25-CB



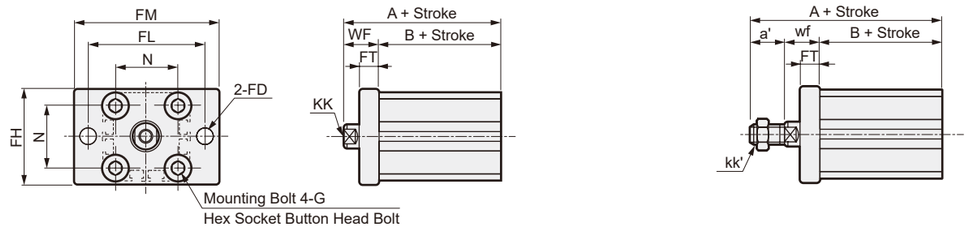
Code / Bore Size (mm)	Common dimension											SSD2-Q-R (For female thread)				SSD2-Q-R (For male thread)					
	CA	CB	CC	CD	D	E	G	KK	H	N	UB	WF *1	A *1	B *1	CJ *1	a'	kk'	wf *1	A *1	B *1	CJ *1
ø20	20	8.2 +0.2 0	12	8	5	36	M6×16	M5 depth 7	C4	25.5	16 -0.1 -0.3	4.5 (14.5)	86 (107.5)	54.5 (66)	77 (98.5)	14	M8	4.5 (14.5)	100 (121.5)	54.5 (66)	77 (98.5)
ø25	24	10.2 +0.2 0	14	10	5	40	M6×16	M6 Depth 12	C5	28	20 -0.1 -0.3	5 (15)	92.5 (114)	57.5 (69)	82.5 (104)	17.5	M10 × 1.25	5 (15)	110 (131.5)	57.5 (69)	82.5 (104)

Code / Bore Size (mm)	SSD2-Q-H (For female thread)				SSD2-Q-H (For male thread)					
	WF *1	A *1	B *1	CJ *1	a'	kk'	wf *1	A *1	B *1	CJ *1
ø20	4.5 (14.5)	92.5 (107.5)	61 (66)	83.5 (98.5)	14	M8	4.5 (14.5)	106.5 (121.5)	61 (66)	83.5 (98.5)
ø25	5 (15)	99 (114)	64 (69)	89 (104)	17.5	M10 × 1.25	5 (15)	116.5 (131.5)	64 (69)	89 (104)

*1: Dimensions in ( ) are values when exceeding 25 strokes.

Outline Dimension Drawing (Bore size: ø20, ø25)

● Rod Side Flange (FA)
SSD2-Q(L)-20, 25-FA

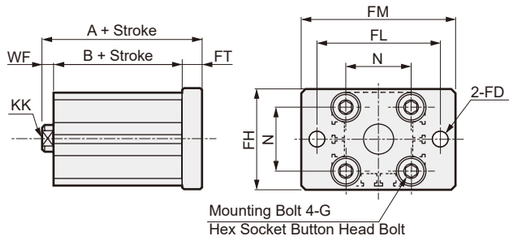


Code	Common dimension								SSD2-Q-R (For female thread)			SSD2-Q-R (For male thread)				
Bore Size (mm)	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with/without switch A *1	Dimension with/without switch B *1	a'	kk'	wf	Dimension with/without switch A *1	Dimension with/without switch B *1
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	14.5	69 (80.5)	54.5 (66)	14	M8	14.5	83 (94.5)	54.5 (66)
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28	15	72.5 (84)	57.5 (69)	17.5	M10 × 1.25	15	90 (101.5)	57.5 (69)

Code	SSD2-Q-H (For female thread)			SSD2-Q-H (For male thread)				
Bore Size (mm)	WF	Dimension with/without switch A *1	Dimension with/without switch B *1	a'	kk'	wf	Dimension with/without switch A *1	Dimension with/without switch B *1
ø20	14.5	75.5 (80.5)	61 (66)	14	M8	14.5	89.5 (94.5)	61 (66)
ø25	15	79 (84)	64 (69)	17.5	M10 × 1.25	15	96.5 (101.5)	64 (69)

*1: Dimensions in ( ) are values when exceeding 25 strokes.

● Head Side Flange (FB)
SSD2-Q(L)-20, 25-FB



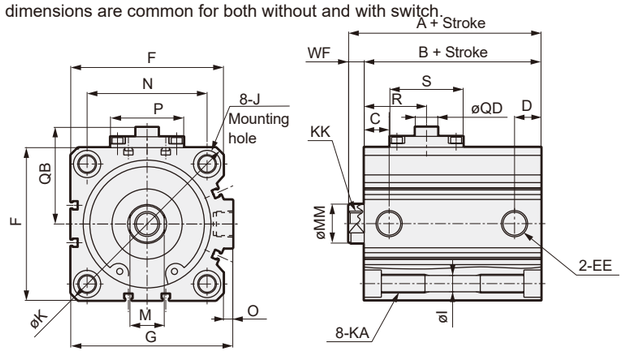
Code	Common dimension								SSD2-Q-R (For female thread)			SSD2-Q-R (For male thread)				
Bore Size (mm)	FD	FH	FL	FM	FT	G	KK	N	WF *1	A *1	B *1	a'	kk'	wf *1	A *1	B *1
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	4.5 (14.5)	67 (88.5)	54.5 (66)	46	M8	19.5 (14.5)	71 (92.5)	54.5 (66)
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28	5 (15)	70.5 (92)	57.5 (69)	53	M10 × 1.25	22.5 (15)	88 (109.5)	57.5 (69)

Code	SSD2-Q-H (For female thread)			SSD2-Q-H (For male thread)				
Bore Size (mm)	WF *1	A *1	B *1	a'	kk'	wf *1	A *1	B *1
ø20	4.5 (14.5)	73.5 (88.5)	61 (66)	46	M8	19.5 (14.5)	77.5 (92.5)	61 (66)
ø25	5 (15)	77 (92)	64 (69)	53	M10 × 1.25	22.5 (15)	94.5 (109.5)	64 (69)

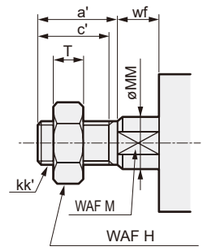
*1: Dimensions in ( ) are values when exceeding 25 strokes.

Outline Dimension Drawing (Bore size: ø32 to ø100)

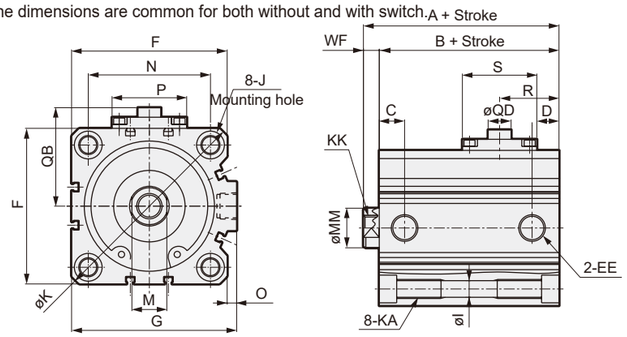
● SSD2-Q(L)-32 to 100-R
*Outline dimensions are common for both without and with switch.

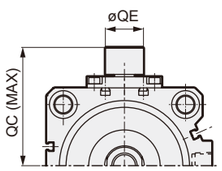


● Rod end male thread part



● SSD2-Q(L)-32 to 100-H
*Outline dimensions are common for both without and with switch.





Code	Common dimension										
Bore Size (mm)	EE	F	G	I	J	K	KA	KK	M	MM	N
ø32	Rc1/8	45	49.5	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34
ø40	Rc1/8	52	57	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40
ø50	Rc1/4	64	71	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50
ø63	Rc1/4	77	84	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60
ø80	Rc3/8	98	104	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77
ø100	Rc3/8	117	123.5	10.5	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94

Code	Common dimension							
Bore Size (mm)	O	P	S	QB	QC	QD	QE	WF *1
ø32	4.5	22	30.5	33.5	46.3	10.5	13	7
ø40	5	22	30.5	37	49.8	10.5	13	7
ø50	7	40.5	23	44	56.3	10.5	13	8
ø63	7	40.5	23	50.5	62.8	10.5	13	8
ø80	6	47	47	62	77.5	14.5	24	10 (20)
ø100	6.5	47	47	71.5	87	14.5	24	12 (22)

Code	With rod side fall prevention mechanism					With head side fall prevention mechanism				
Bore Size (mm)	A *1	B *1	C	D	R	A *1	B *1	C	D	R
ø32	65	58	11	9	19.2	72.5	65.5	11	9	20.9
ø40	71.5	64.5	14	11	21.7	82	75	14	14	23.9
ø50	73.5	65.5	15	12.5	24.7	83.5	75.5	15	12.5	29.8
ø63	79	71	19	16	26.2	85	77	15	16	25.5
ø80	113.5 (136)	103.5 (116)	18	17	40	121 (136)	111 (116)	18	17	37.5
ø100	125 (147.5)	113 (125.5)	23	21	44.5	132.5 (147.5)	120.5 (125.5)	23	21	40

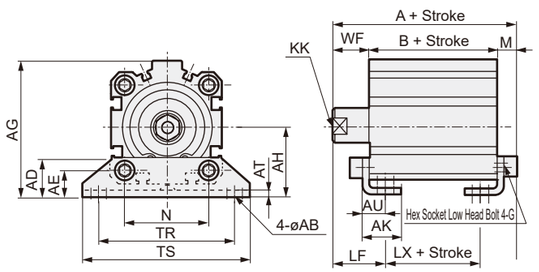
● Rod end male thread part

Code	a'	c'	H	kk'	M	MM	T	wf *1
Bore Size (mm)								
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8 (18)
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8 (18)

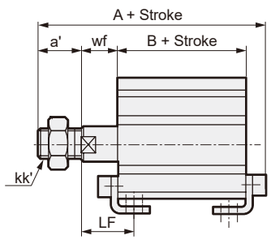
*1: Dimensions in ( ) are values when exceeding 50 strokes.
***2: For dimensions with each switch, refer to P. 300 to 309.**
***3: For outline dimension drawings of individual accessories, refer to P. 34.**

Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot (LB)
SSD2-Q(L)-32 to 100-LB



For rod end male thread

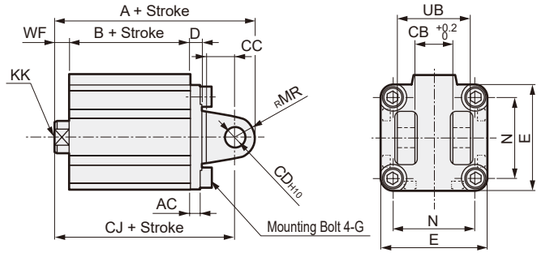


Code / Bore Size (mm)	Common dimension														SSD2-Q-R (For female thread)				
	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	WF	LF	Dimension with/without switch A *1	B *1	LX *1
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2	17	25	82.2	58	42
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2	17	25	88.7	64.5	48.5
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2	18	29.5	91.7	65.5	42.5
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2	18	31	98.2	71	45
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5	20	35	135 (147.5)	103.5 (116)	73.5 (86)
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13	22	39	148 (160.5)	113 (125.5)	79 (91.5)

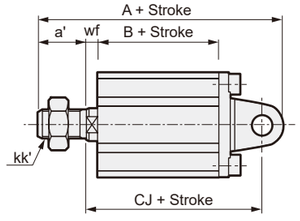
Code / Bore Size (mm)	SSD2-Q-R (For male thread)							SSD2-Q-H (For female thread)					SSD2-Q-H (For male thread)					
	a'	kk'	wf	LF	Dimension with/without switch A *1	B *1	LX *1	WF	LF	Dimension with/without switch A *1	B *1	LX *1	a'	kk'	wf	LF	Dimension with/without switch A *1	B *1	LX *1
ø32	23.5	M14 × 1.5	15	23	103.7	58	42	17	25	89.7	65.5	49.5	23.5	M14 × 1.5	15	23	111.2	65.5	49.5
ø40	23.5	M14 × 1.5	15	23	110.2	64.5	48.5	17	25	99.2	75	59	23.5	M14 × 1.5	15	23	120.7	75	59
ø50	28.5	M18 × 1.5	15	26.5	117.2	65.5	42.5	18	29.5	101.7	75.5	52.5	28.5	M18 × 1.5	15	26.5	127.2	75.5	52.5
ø63	28.5	M18 × 1.5	15	28	123.7	71	45	18	31	104.2	77	51	28.5	M18 × 1.5	15	28	129.7	77	51
ø80	35.5	M22 × 1.5	18	33	168.5 (181)	103.5 (116)	73.5 (86)	20	35	142.5 (147.5)	111 (116)	81 (86)	35.5	M22 × 1.5	18	33	176 (181)	111 (116)	81 (86)
ø100	35.5	M26 × 1.5	18	35	179.5 (192)	113 (125.5)	79 (91.5)	22	39	155.5 (160.5)	120.5 (125.5)	86.5 (91.5)	35.5	M26 × 1.5	18	35	187 (192)	120.5 (125.5)	86.5 (91.5)

*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Double Knuckle Clevis (CB)
SSD2-Q(L)-32 to 100-CB



For rod end male thread



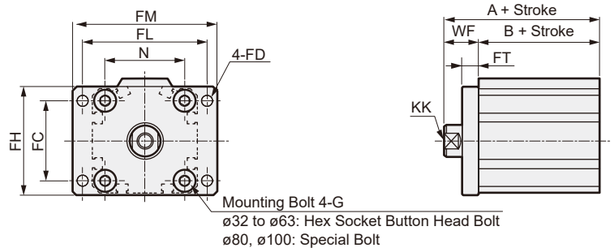
Code / Bore Size (mm)	Common dimension											SSD2-Q-R (For female thread)			
	AC	CB	CC	CD	D	E	G	KK	MR	N	UB	WF *1	A	B	CJ
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36	7	95	58	85
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36	7	103.5	64.5	93.5
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44	8	115.5	65.5	101.5
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44	8	123	71	109
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56	10 (20)	169.5 (192)	103.5 (116)	151.5 (174)
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64	12 (22)	192 (214.5)	113 (125.5)	170 (192.5)

Code / Bore Size (mm)	SSD2-Q-R (For male thread)						SSD2-Q-H (For female thread)				SSD2-Q-H (For male thread)					
	a'	kk'	wf	A	B	CJ	WF	A	B	CJ	a'	kk'	wf	A	B	CJ
ø32	23.5	M14 × 1.5	5	116.5	58	83	7	102.5	65.5	92.5	23.5	M14 × 1.5	5	124	65.5	90.5
ø40	23.5	M14 × 1.5	5	125	64.5	91.5	7	114	75	104	23.5	M14 × 1.5	5	135.5	74.5	102
ø50	28.5	M18 × 1.5	5	141	65.5	98.5	8	125.5	75.5	111.5	28.5	M18 × 1.5	5	151	71.5	108.5
ø63	28.5	M18 × 1.5	5	148.5	71	106	8	129	77	115	28.5	M18 × 1.5	5	154.5	77	112
ø80	35.5	M22 × 1.5	8 (18)	203 (225.5)	103.5 (116)	149.5 (172)	10 (20)	177 (192)	111 (116)	159 (174)	35.5	M22 × 1.5	8 (18)	210.5 (225.5)	111 (116)	157 (172)
ø100	35.5	M26 × 1.5	8 (18)	223.5 (246)	113 (125.5)	166 (188.5)	12 (22)	199.5 (214.5)	120.5 (125.5)	177.5 (192.5)	35.5	M26 × 1.5	8 (18)	231 (246)	120.5 (125.5)	173.5 (188.5)

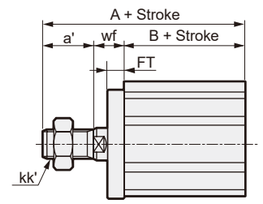
*1: Dimensions in ( ) are values when exceeding 50 strokes.

Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange (FA)
SSD2-Q(L)-32 to 100-FA



For rod end male thread

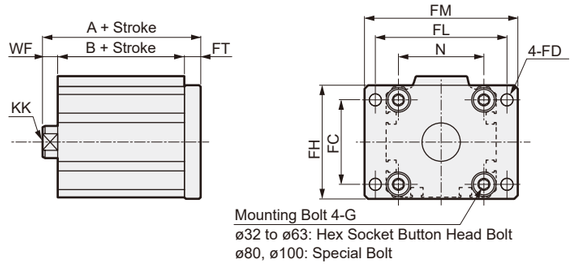


Code / Bore Size (mm)	Common dimension									SSD2-Q-R (For female thread)			SSD2-Q-R (For male thread)				
	FC	FD	FH	FL	FM	FT	G	KK	N	WF *1	Dimension with/without switch A *1	B *1	a'	kk'	wf	Dimension with/without switch A *1	B *1
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	17	75	58	23.5	M14 × 1.5	15	96.5	58
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	17	81.5	64.5	23.5	M14 × 1.5	15	103	64.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	18	83.5	65.5	28.5	M18 × 1.5	15	109	65.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	18	89	71	28.5	M18 × 1.5	15	114.5	71
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	20	123.5 (136)	103.5 (116)	35.5	M22 × 1.5	18	157 (169.5)	103.5 (116)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	22	135 (147.5)	113 (125.5)	35.5	M26 × 1.5	18	166.5 (179)	113 (125.5)

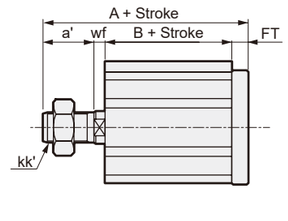
Code / Bore Size (mm)	SSD2-Q-H (For female thread)			SSD2-Q-H (For male thread)			
	WF	Dimension with/without switch A *1	B *1	a'	kk'	wf	Dimension with/without switch A *1	B *1
ø32	17	82.5	65.5	23.5	M14 × 1.5	15	104	65.5
ø40	17	92	75	23.5	M14 × 1.5	15	113.5	75
ø50	18	93.5	75.5	28.5	M18 × 1.5	15	119	75.5
ø63	18	95	77	28.5	M18 × 1.5	15	120.5	77
ø80	20	131 (136)	111 (116)	35.5	M22 × 1.5	18	164.5 (169.5)	111 (116)
ø100	22	142.5 (147.5)	120.5 (125.5)	35.5	M26 × 1.5	18	174 (179)	120.5 (125.5)

*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Head Side Flange (FB)
SSD2-Q(L)-32 to 100-FB



For rod end male thread



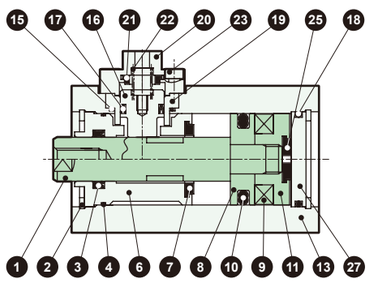
Code / Bore Size (mm)	Common dimension									SSD2-Q-R (For female thread)			SSD2-Q-R (For male thread)				
	FC	FD	FH	FL	FM	FT	G	KK	N	WF *1	A *1	B *1	a'	kk'	wf *1	A *1	B *1
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	7	73	58	59.5	M14 × 1.5	23	94.5	58
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	7	79.5	64.5	66	M14 × 1.5	29.5	101	64.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	8	82.5	65.5	73	M18 × 1.5	30.5	108	65.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	8	88	71	78.5	M18 × 1.5	36	113.5	71
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	10 (20)	124.5 (147)	103.5 (116)	98	M22 × 1.5	43.5 (18)	158 (180.5)	103.5 (116)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	12 (22)	136 (158.5)	113 (125.5)	107.5	M26 × 1.5	53 (18)	167.5 (190)	113 (125.5)

Code / Bore Size (mm)	SSD2-Q-H (For female thread)			SSD2-Q-H (For male thread)				
	WF *1	A *1	B *1	a'	kk'	wf *1	A *1	B *1
ø32	7	80.5	65.5	59.5	M14 × 1.5	23	102	65.5
ø40	7	90	75	66	M14 × 1.5	29.5	111.5	74.5
ø50	8	92.5	75.5	73	M18 × 1.5	30.5	118	71.5
ø63	8	94	77	78.5	M18 × 1.5	36	119.5	77
ø80	10 (20)	132 (147)	111 (116)	98	M22 × 1.5	43.5 (18)	165.5 (180.5)	111 (116)
ø100	12 (22)	143.5 (158.5)	120.5 (125.5)	107.5	M26 × 1.5	53 (18)	175 (190)	120.5 (125.5)

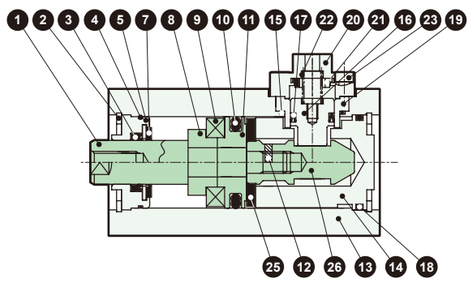
*1: Dimensions in ( ) are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø20 to ø50)

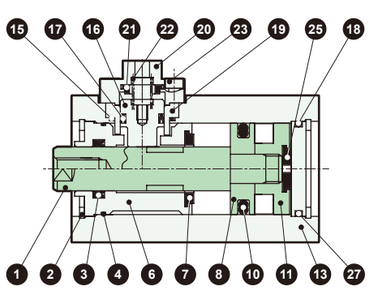
● SSD2-QL-20 to 50-R (double acting/with switch/rod side position locking)



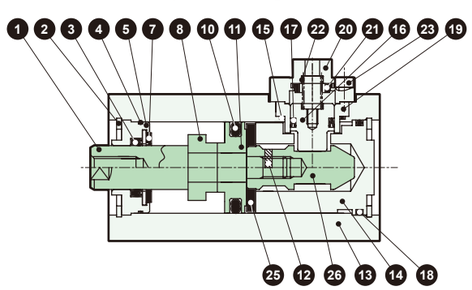
● SSD2-QL-20 to 50-H (double acting/with switch/head side position locking)



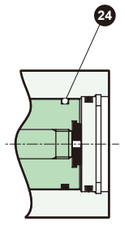
● SSD2-Q-20 to 50-R (Double Acting with Rod Side Fall Prevention)



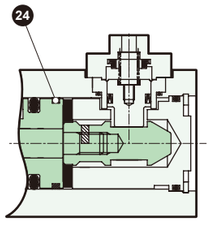
● SSD2-Q-20 to 50-H (Double Acting with Head Side Fall Prevention)



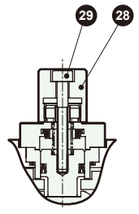
● ø20, ø25: 50 strokes or more



● ø20, ø25: 50 strokes or more



● Locking manual device

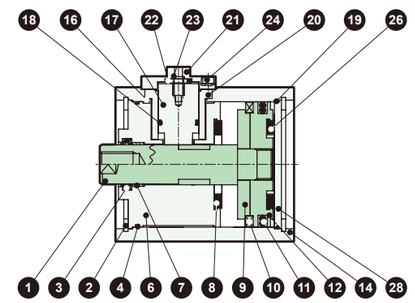


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	16	Stopper Piston	Steel	Nitriding Treatment
2	C-type retaining ring	Steel	Zinc phosphate	17	Stopper packing	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		18	O-ring	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		19	Stopper housing	ø20 to ø30, ø50: Aluminum alloy	Alumite
5	Rod Metal	Aluminum Alloy	Alumite			ø40: Alloy steel	Chromate
6	Rod Cover	Aluminum Alloy	Alumite	20	Stopper Cover	Aluminum Alloy	Chromate
7	Cushion rubber (R)	Urethane Rubber		21	Cushion Rubber	Urethane Rubber	
8	Spacer	Aluminum Alloy	ø20 to ø32: Chromate	22	Coil Spring	Piano Wire	Electrodeposition Coating
9	Magnet	Plastic		23	Hexagon Socket Head Cap Screw	Steel	
10	Piston Packing	Nitrile Rubber		24	Wear Ring	Polyacetal	ø20, ø25, 50 strokes or more only
11	Piston	Aluminum Alloy	Chromate	25	Cushion rubber (H)	Urethane Rubber	
12	Spring Pin	Steel	Black Oxide	26	Sleeve	Steel	Nitriding Treatment
13	Cylinder Body	Aluminum Alloy	Hard Anodized	27	Cover	Aluminum Alloy	Chromate
14	Head Cover	Aluminum Alloy	Chromate	28	Round Nut	Aluminum Alloy	
15	O-ring	Nitrile Rubber		29	Hexagon Socket Head Cap Screw	Steel	

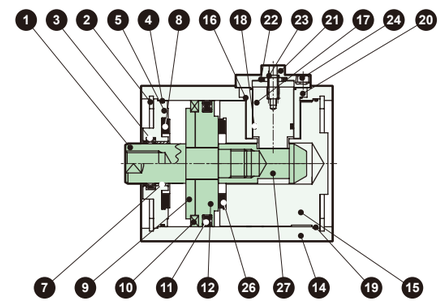
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

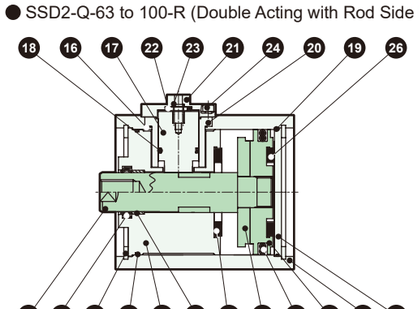
● SSD2-QL-63 to 100-R (double acting/with switch/rod side position locking)



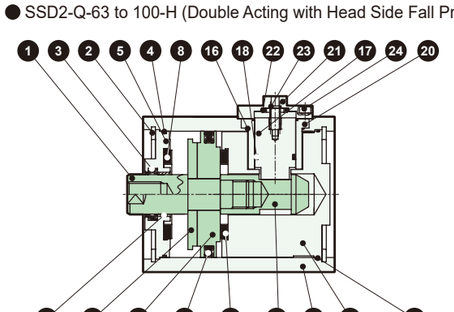
● SSD2-QL-63 to 100-H (double acting/with switch/head side position locking)



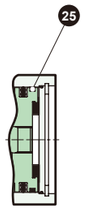
● SSD2-Q-63 to 100-R (Double Acting with Rod Side Fall Prevention)



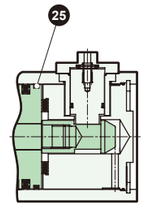
● SSD2-Q-63 to 100-H (Double Acting with Head Side Fall Prevention)



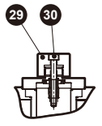
● ø80, ø100: 75 strokes or more



● ø80, ø100: 75 strokes or more



● Locking manual device



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	17	Stopper Piston	Steel	Nitriding Treatment
2	C-type retaining ring	Steel	Zinc phosphate	18	Stopper packing	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		19	O-ring	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		20	Stopper housing	ø80: Aluminum alloy	Alumite
5	Rod Metal	Aluminum Alloy	Alumite			ø63, ø100: Alloy steel	Chromate
6	Rod Cover	Aluminum Alloy	Alumite	21	Stopper Cover	Aluminum Alloy	Chromate
7	Bushing	Oiles Drymet		22	Cushion Rubber	Urethane Rubber	
8	Cushion rubber (R)	Urethane Rubber		23	Coil Spring	Piano Wire	Electrodeposition Coating
9	Spacer	Aluminum Alloy		24	Hexagon Socket Head Cap Screw	Steel	
10	Magnet	Plastic		25	Wear Ring	Polyacetal	ø80, ø100, 75 strokes or more only
11	Piston Packing	Nitrile Rubber		26	Cushion rubber (H)	Urethane Rubber	
12	Piston	Aluminum Alloy	Chromate	27	Sleeve	Steel	Nitriding Treatment
13	Spring Pin	Steel	Black Oxide	28	Cover	Aluminum Alloy	Chromate
14	Cylinder Body	Aluminum Alloy	Hard Anodized	29	Round Nut	Aluminum Alloy	
15	Head Cover	Aluminum Alloy	Chromate	30	Hexagon Socket Head Cap Screw	Steel	
16	O-ring	Nitrile Rubber					

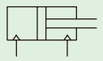
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Creep Speed Type

SSD2-F/SSD2-KF Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-F - 12 - [ ] - 5 ——— N - LB - I

With Switch (Built-in magnet for switch)

SSD2-LF - 12 - [ ] - 10 - T0H - R - N - LB - I

❶	❷	❸	❹	❺	❻	❼	❽	❾
Model No.	Bore Size	Piping thread type	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

❶Model No.

Code	Content
SSD2-F	Double Acting/Single Rod Type
SSD2-LF	Double-acting, Single rod type with switch
SSD2-KF	Double Acting, High Load Type
SSD2-KLF	Double Acting, High Load Type with Switch

❷Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❸Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❹Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

❺Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
*10 5	5 m (Option)
*9 W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❻Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❽Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 41, 42, 44, 45. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❼Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❾Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 116.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3: Min. stroke with ❽mounting type LB is F, LF: Pages 17, 20 KF: Refer to pages 41 and 44.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-F- ..... -XP5

SSD2-KF- ..... -XP5

Switch Single Unit Model No. Notation Method

SW - T0H

❺ Switch Model No.

Specifications

Item	SSD2-F SSD2-LF (With Switch)										SSD2-KF SSD2-KLF (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type																			
Operating Fluid	Compressed Air																			
Max. Operating Pressure MPa	1.0																			
Min. Operating Pressure MPa	0.1						0.05				0.1						0.05			
Proof pressure MPa	1.6																			
Ambient Temperature °C	5 to 60																			
Port Size	M5				Rc1/8 *1		Rc1/4		Rc3/8		M5				Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$										$^{+2.0}_{0}$									
Operating Piston Speed mm/s	1 to 200																			
Cushion	None										Rubber Cushion									
Lubrication	Not Available																			
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

*1: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 2 Switches)

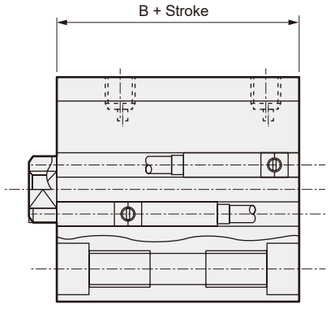
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			15
ø32			
ø40			
ø50			
ø63			10
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-F Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-F-32-38 A +2 mm spacer is added to the standard cylinder SSD2-F-32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63	



Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02 × 10²	1.13 × 10²
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01 × 10²	1.21 × 10²	1.41 × 10²	1.61 × 10²	1.81 × 10²	2.01 × 10²
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06 × 10²	1.21 × 10²	1.36 × 10²	1.51 × 10²
ø20	Push	-	31.4	47.1	62.8	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²	2.51 × 10²	2.83 × 10²	3.14 × 10²
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²	1.88 × 10²	2.12 × 10²	2.36 × 10²
ø25	Push	-	49.1k	73.6	98.2	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²	3.93 × 10²	4.42 × 10²	4.91 × 10²
	Pull	-	37.8	56.7	75.6	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²	3.02 × 10²	3.40 × 10²	3.78 × 10²
ø32	Push	-	80.4	1.21 × 10²	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²	6.43 × 10²	7.24 × 10²	8.04 × 10²
	Pull	-	60.3	90.5	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62 × 10²	4.22 × 10²	4.83 × 10²	5.43 × 10²	6.03 × 10²
ø40	Push	-	1.26 × 10²	1.88 × 10²	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²	1.01 × 10³	1.13 × 10³	1.26 × 10³
	Pull	-	1.06 × 10²	1.58 × 10²	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²	8.44 × 10²	9.50 × 10²	1.06 × 10³
ø50	Push	-	1.96 × 10²	2.95 × 10²	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³	1.57 × 10³	1.77 × 10³	1.96 × 10³
	Pull	-	1.65 × 10²	2.47 × 10²	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³	1.32 × 10³	1.48 × 10³	1.65 × 10³
ø63	Push	1.56 × 10²	3.12 × 10²	4.68 × 10²	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³	2.49 × 10³	2.81 × 10³	3.12 × 10³
	Pull	1.40 × 10²	2.80 × 10²	4.20 × 10²	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³	2.24 × 10³	2.52 × 10³	2.80 × 10³
ø80	Push	2.51 × 10²	5.03 × 10²	7.54 × 10²	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³	4.02 × 10³	4.52 × 10³	5.03 × 10³
	Pull	2.27 × 10²	4.54 × 10²	6.80 × 10²	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³	3.63 × 10³	4.08 × 10³	4.54 × 10³
ø100	Push	3.93 × 10²	7.85 × 10²	1.18 × 10³	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³	6.28 × 10³	7.07 × 10³	7.85 × 10³
	Pull	3.57 × 10²	7.15 × 10²	1.07 × 10³	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³	5.72 × 10³	6.43 × 10³	7.15 × 10³

Mounting Bracket Model No. Notation Method

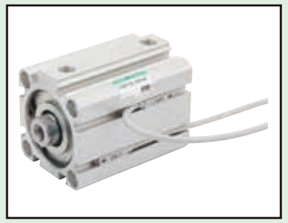
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

Bore Size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

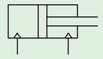
Same as Double Acting, Single Rod Type SSD2 Series, Double Acting, High Load Type SSD2-K Series.
Refer to P. 16 to 21, P. 40 to 45.



Compact Cylinder Double Acting, Low Speed Type

SSD2-O Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-O – 12 – [ ] – 5 ——— N – LB – I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD2-OL – 12 – [ ] – 10 – T0H – R – N – LB – I
1 2 3 4 5 6 7 8 9

1 Model No. · 2 Bore Size · 3 Piping thread type · 4 Stroke · 5 Switch Model No. · 6 Number of Switches · 7 Option · 8 Mounting type · 9 Accessories

1 Model No.

Code	Content
SSD2-O	Double Acting/Single Rod Type
SSD2-OL	Double-acting, Single rod type with switch

2 Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□					●	●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
*10 5	5 m (Option)
*9 W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

8 Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 17, 18, 20, 21. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 120.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3: For minimum stroke for ❽ mounting type LB, refer to P. 17, 20.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-O – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
5 Switch Model No.

Specifications

Item	SSD2-O / SSD2-OL (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
Port Size	M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$									
Operating Piston Speed mm/s	10 to 200									
Cushion	None									
Lubrication	Not Available									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 2 Switches)

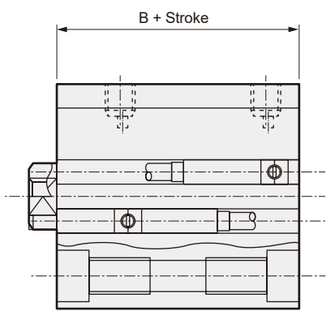
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			15
ø32			10
ø40			
ø50			
ø63			
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-O Series

Item	Standard Product: Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-O-32-38 A +2 mm spacer is added to the standard cylinder SSD2-O-32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-	-	-	-	-	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777
ø80	-	-	928	1341	1015	1428	1101	1514	1188	1601	1274	1687	1361	1774	1448	1861	1535	1948	1621	2034	2401	2467	2833	2899
ø100	-	-	1433	2,000	1547	2114	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	3406	3478	3973	4045

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^3
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

Bore Size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

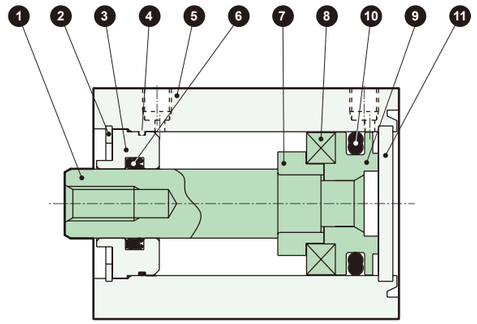
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

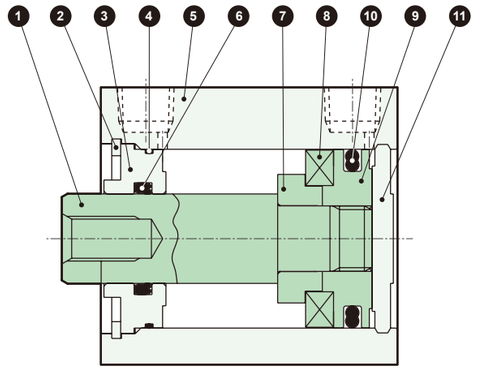
Same as Double Acting, Single Rod Type SSD2 Series. Refer to P. 16 to 21.

Internal Structure Diagram/Material (ø12 to 50)

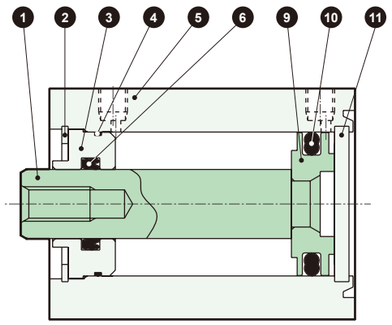
● SSD2-OL-12 to 25 (Double Acting Type with Switch)



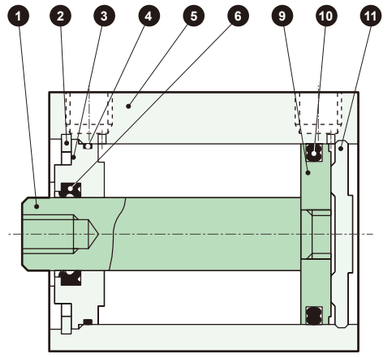
● SSD2-OL-32 to 50 (Double Acting Type with Switch)



● SSD2-O-12 to 25 (Double Acting Type)



● SSD2-O-32 to 50 (Double Acting Type)

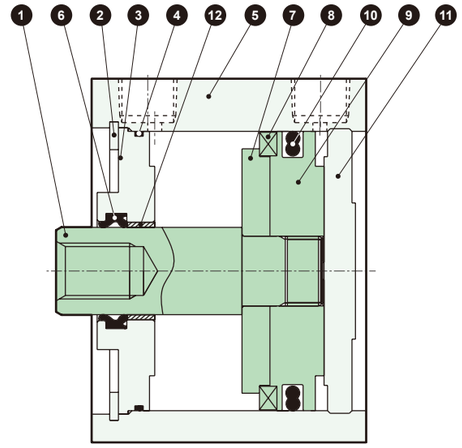


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	ø12 to ø32: Chromate
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Alumite	9	Piston	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
6	Rod Packing	Nitrile Rubber					

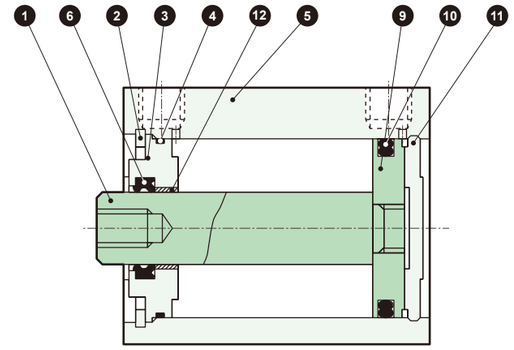
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (ø63 to ø100)

● SSD2-OL-63 to 100 (Double Acting Type with Switch)

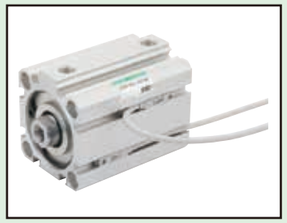


● SSD2-O-63 to 100 (Double Acting Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Chromate	9	Piston	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Cover	Aluminum Alloy	Alumite
6	Rod Packing	Nitrile Rubber		12	Bushing	Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

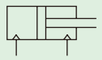


Compact Cylinder
Double Acting, High Load, Low Friction Type

SSD2-KU Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-KU – 20 – [ ] – 10 ——— N – LB – I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch (Built-in magnet for switch)

SSD2-KUL – 20 – [ ] – 10 – T0H – R – N – LB – I

Model No. ❶ Bore Size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting type ❽ Accessories

❶Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Port Thread Type

Code	Content
Blank	M5 (ø20 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø20, ø25	5 to 50	Every 1 mm
ø32 to ø100	5 to 100	

Note: Refer to Appendix 1 on the following page for details.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*6
	2-Color for AC Magnetic Field		—		—		T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□				●	●	●	●	●	*3

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T8□ switches cannot be mounted on ø20 to ø32.
*4: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*5: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 10.
*6: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*7: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9 *8

*8: Only T2WLH, T2WLV can be selected.
*9: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 41, 42, 44, 45. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø20, ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❽Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❻Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1 *3		5							
Maximum Stroke (mm)		50		100					
Intermediate Stroke *2		Every 1 mm							

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, strong magnetic field, T1□, T8□ switch. For minimum stroke with switch, refer to P. 126.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*3:For minimum stroke for ❼ mounting type LB, refer to P. 41, 44.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-KU-..... -XP5

Specifications

Item	SSD2-KU SSD2-KUL (With Switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	0.7							
Min. Operating Pressure MPa	0.03							
Proof pressure MPa	1.0							
Ambient Temperature °C	5 to 60							
Port Size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke Tolerance mm	+2.0 0							
Operating Piston Speed mm/s	10 to 500					10 to 300		
Cushion	Rubber Cushion							
Lubrication	Not Available							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92
Internal leakage L/min	5						8	

Minimum Stroke with Switch (With 1 or 2 Switches)

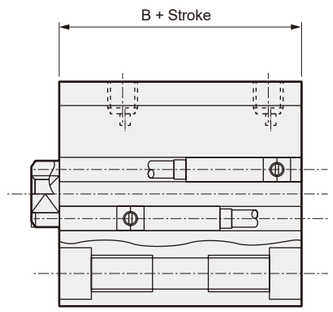
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø20	5	5	20
ø25			
ø32			15
ø40			
ø50			10
ø63			
ø80			
ø100			

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD2-KU Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-KU-32-41 A +4 mm spacer is added to the standard cylinder SSD2-KU-32-45 to make it 41 mm. B + Stroke = 33 + 45 = 78	



Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø20	Push	9.42	31.4	47.1	62.8	94.2	1.26 × 10²	1.57 × 10²	1.88 × 10²	2.20 × 10²
	Pull	7.07	23.6	35.3	47.1	70.7	94.2	1.18 × 10²	1.41 × 10²	1.65 × 10²
ø25	Push	14.7	49.1k	73.6	98.2	1.47 × 10²	1.96 × 10²	2.45 × 10²	2.95 × 10²	3.44 × 10²
	Pull	11.3	37.8	56.7	75.6	1.13 × 10²	1.51 × 10²	1.89 × 10²	2.27 × 10²	2.64 × 10²
ø32	Push	24.1	80.4	1.21 × 10²	1.61 × 10²	2.41 × 10²	3.22 × 10²	4.02 × 10²	4.83 × 10²	5.63 × 10²
	Pull	18.1	60.3	90.5	1.21 × 10²	1.81 × 10²	2.41 × 10²	3.02 × 10²	3.62 × 10²	4.22 × 10²
ø40	Push	37.7	1.26 × 10²	1.88 × 10²	2.51 × 10²	3.77 × 10²	5.03 × 10²	6.28 × 10²	7.54 × 10²	8.80 × 10²
	Pull	31.7	1.06 × 10²	1.58 × 10²	2.11 × 10²	3.17 × 10²	4.22 × 10²	5.28 × 10²	6.33 × 10²	7.39 × 10²
ø50	Push	58.9	1.96 × 10²	2.95 × 10²	3.93 × 10²	5.89 × 10²	7.85 × 10²	9.82 × 10²	1.18 × 10³	1.37 × 10³
	Pull	49.5	1.65 × 10²	2.47 × 10²	3.30 × 10²	4.95 × 10²	6.60 × 10²	8.25 × 10²	9.90 × 10²	1.15 × 10³
ø63	Push	93.5	3.12 × 10²	4.68 × 10²	6.23 × 10²	9.35 × 10²	1.25 × 10³	1.56 × 10³	1.87 × 10³	2.18 × 10³
	Pull	84.0	2.80 × 10²	4.20 × 10²	5.61 × 10²	8.41 × 10²	1.12 × 10³	1.40 × 10³	1.68 × 10³	1.96 × 10³
ø80	Push	1.51 × 10²	5.03 × 10²	7.54 × 10²	1.01 × 10³	1.51 × 10³	2.01 × 10³	2.51 × 10³	3.02 × 10³	3.52 × 10³
	Pull	1.36 × 10³	4.54 × 10²	6.80 × 10²	9.07 × 10²	1.36 × 10³	1.81 × 10³	2.27 × 10³	2.72 × 10³	3.17 × 10³
ø100	Push	2.36 × 10²	7.85 × 10²	1.18 × 10³	1.57 × 10³	2.36 × 10³	3.14 × 10³	3.93 × 10³	4.71 × 10³	5.50 × 10³
	Pull	2.14 × 10³	7.15 × 10²	1.07 × 10³	1.43 × 10³	2.14 × 10³	2.86 × 10³	3.57 × 10³	4.29 × 10³	5.00 × 10³

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

Same as Double Acting, High Load Type SSD2-K Series. Refer to P. 40 to 45.

Technical Data

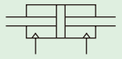
For technical data on sliding resistance values, refer to the SCM-U series in "Pneumatic Cylinder ①" (No. RJ-002AA). The data is for the "SCM-U Series," but the "SSD2-KU Series" also shows the same trend.



Compact Cylinder Double Acting, Double Rod Type

SSD2-D Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-D – 12 – ( ) – ( ) – 5 ——— N – LB – I
① ② ③ ④ ⑤ ⑧ ⑨ ⑩

With Switch
(Built-in magnet for switch)

SSD2-DL – 12 – ( ) – ( ) – 10 – T0H – R – N – LB – I
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Model No. ② Bore Size ③ Piping thread type ④ Cushion ⑤ Stroke ⑥ Switch Model No. ⑦ Number of Switches ⑧ Option ⑨ Mounting type ⑩ Accessories

①Model No.

Code	Content
SSD2-D	Double Acting/Double Rod Type
SSD2-DL	Double-acting, Double rod type with switch

②Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

③Port Thread Type

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

④Cushion

Code	Content
Blank	Without Cushion
D	With Rubber Cushion

⑤Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	5 to 30	Every 5 mm
ø20, ø25	5 to 50	
ø32 to ø40	5 to 100	
ø50 to ø100	10 to 100	

Note: Refer to Appendix 1 on the following page for details.

⑥Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	●	●	
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□			●	●	●	●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T2YD□, T2YDT□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12, ø16.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 bore sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
*10 5	5 m (Option)
*9 W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H□3
5 m T0H□5

⑦Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑧Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

⑨Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
*1 FA	Rod Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 133, P. 135. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and mounting brackets separately, please contact us.

⑩Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❽Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2 *3		-				Every 5 mm					

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 130.
*2: Intermediate stroke is possible only when exceeding 50 strokes.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-D-..... -XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-D-..... -FP1

Switch Single Unit Model No. Notation Method

SW – T0H
⑥ Switch Model No.

Specifications

Item		SSD2-D / SSD2-DL (With Switch)									
Bore size mm		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type									
Operating Fluid		Compressed Air									
Max. Operating Pressure MPa		1.0									
Min. Operating Pressure MPa		0.15							0.1		
Proof pressure MPa		1.6									
Ambient Temperature °C		-10 to 60 (Provided that freezing does not occur)									
Port Size		M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	With Rubber Cushion	$^{+2.0}_{0}$									
	Without Cushion	$^{+1.0}_{0}$									
Operating Piston Speed mm/s		50 to 500							50 to 300		
Cushion		Rubber cushion available/unavailable selectable									
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable absorbed Energy J	With Rubber Cushion	0.03	0.05	0.10	0.16	0.16	0.44	0.75	0.78	2.51	3.92
	Without Cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 1 or 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	5	5	20
ø16			
ø20			15
ø25			
ø32			
ø40			10
ø50			
ø63			
ø80			
ø100			

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	52	105	60	105	69	115	77	124	86	134	95	147	-	-	-	-	-	-	-	-	-	-	-	-
ø16	74	133	85	133	95	144	106	156	117	168	128	177	-	-	-	-	-	-	-	-	-	-	-	-
ø20	131	187	143	222	161	238	179	254	196	269	214	285	232	301	249	316	267	332	284	347	-	-	-	-
ø25	147	238	162	253	178	269	194	285	210	301	226	316	242	332	257	348	275	364	288	379	-	-	-	-
ø32	184	299	230	344	275	390	322	436	366	481	413	527	459	573	469	612	485	628	522	665	776	785	1004	1012
ø40	283	426	310	453	336	479	363	506	390	533	416	569	443	601	507	617	553	663	601	707	1317	1333	1475	1490
ø50	-	-	508	702	558	751	608	803	658	851	708	901	758	950	808	1001	835	1033	911	1105	2007	2025	2252	2270
ø63	-	-	902	1266	977	1341	1052	1416	1127	1491	1202	1566	1278	1642	1353	1717	1428	1792	1503	1867	2218	2242	2593	2617
ø80	-	-	1608	1538	1725	1916	1841	2294	1958	2411	2074	2527	2191	2649	2308	2771	2425	2888	2541	3004	3560	3587	4143	4169
ø100	-	-	2483	3105	2652	3254	2820	3402	2989	3586	3158	3770	3327	3934	3495	4097	3664	4261	3833	4425	5213	5245	6033	6065

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push/Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push/Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push/Pull	-	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push/Pull	-	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push/Pull	-	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^3
ø40	Push/Pull	-	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push/Pull	-	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push/Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push/Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push/Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50

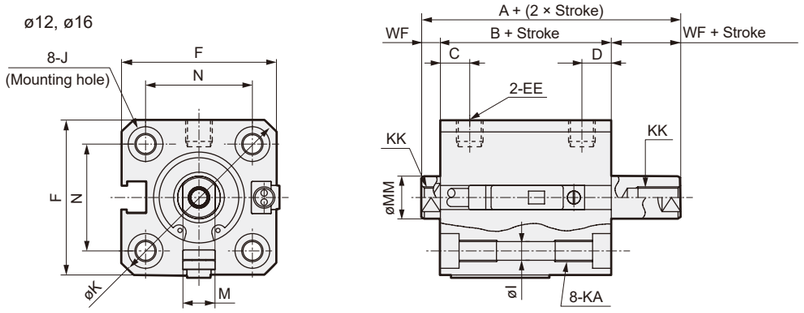
Bore Size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100

Note: Foot type mounting brackets are 2 pcs/set.

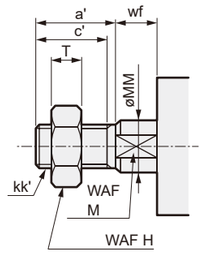
Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD2-D(L)-12 to 25

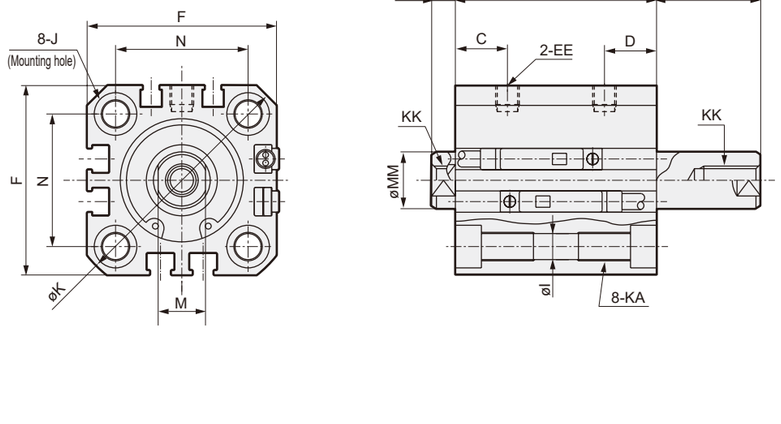
ø12, ø16



● Rod end male thread part



ø20, ø25



Code / Bore Size (mm)	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	34	27	29	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	34	27	29	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	45	36	35	26	8	8	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	49	39	39	29	11	11	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

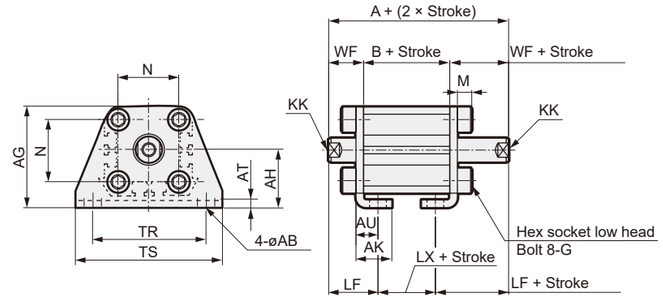
*1: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.
*2: The positions of the flats for wrenches on the left and right sides are not fixed.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

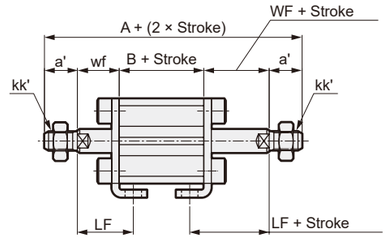
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB) With Switch
SSD2-D(L)-12 to 25-LB



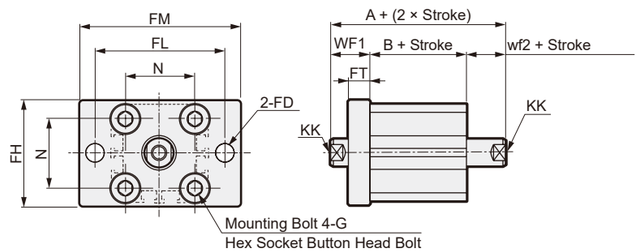
For rod end male thread



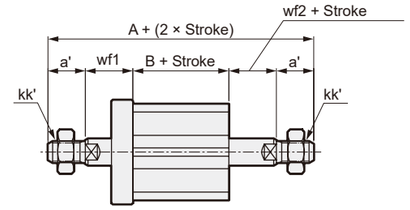
Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2

Code / Bore Size (mm)	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø12	13.5	19.5	54	27	15	49	22	10	10.5	M5	13.5	19.5	75	27	15	70	22	10
ø16	13.5	19.5	54	27	15	49	22	10	12	M6	13.5	19.5	78	27	15	73	22	10
ø20	14.5	20.5	65	36	24	55	26	14	14	M8	14.5	20.5	93	36	24	83	26	14
ø25	15	22.5	69	39	24	59	29	14	17.5	M10 × 1.25	15	22.5	104	39	24	94	29	14

● Rod Side Flange (FA) With Switch
SSD2-D(L)-12 to 25-FA



For rod end male thread

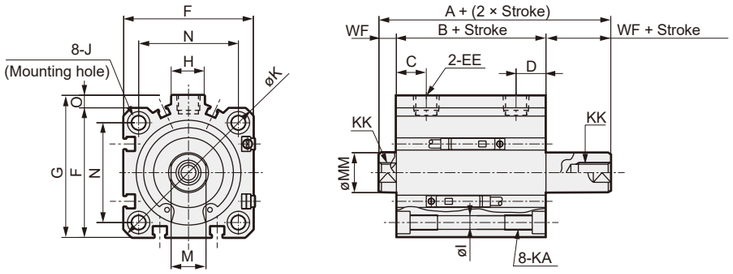


Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	G	KK	N
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28

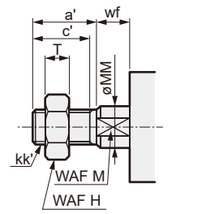
Code / Bore Size (mm)	For female thread WF1	WF2	Dimension with switch A	B	Dimension without switch A	B	For male thread a'	kk'	wf1	wf2	Dimension with switch A	B	Dimension without switch A	B
ø12	13.5	3.5	44	27	39	22	11	M5	13.5	3.5	65	27	60	22
ø16	13.5	3.5	44	27	39	22	12	M6	13.5	3.5	68	27	63	22
ø20	14.5	4.5	55	36	45	26	14	M8	14.5	4.5	83	36	73	26
ø25	15	5	59	39	49	29	18	M10 × 1.25	15	5	94	39	84	29

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-D(L)-32 to 100 (With Switch)



● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *2	Dimension with switch B *3	Dimension without switch A *2, *4	Dimension without switch B *3, *4	Common dimension C *6	D *6	EE *5	F	G	H	I
ø32	54.5	40.5	44.5 (54.5)	30.5 (40.5)	8 (10)	8 (5.5)	Rc1/8	45	49.5	12.5	5.5
ø40	64	50	54 (64)	40 (50)	12 (11.4)	12 (7.8)	Rc1/8	52	57	15	5.5
ø50	66.5	50.5	56.5 (66.5)	40.5 (50.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	68	52	58 (68)	42 (52)	13	13	Rc1/4	77	84	23	8.7
ø80	81	61	71 (81)	51 (61)	16	16	Rc3/8	98	104	31	10.5
ø100	94.5	70.5	84.5 (94.5)	60.5 (70.5)	23	23	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	Common dimension J	K	KA	KK	M	MM	N	O	WF
ø32	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

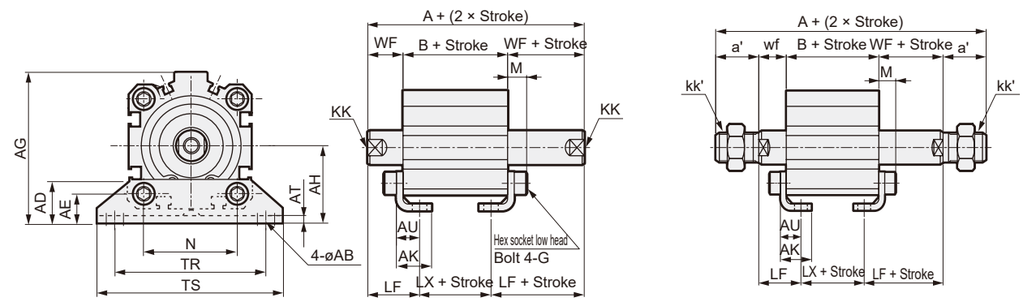
*1: Intermediate stroke is only supported when exceeding 50 strokes.
*2: When calculating A + (2 × Stroke) for intermediate strokes, do not enter the intermediate stroke value; calculate using "A + Standard stroke above it + Intermediate stroke." (Example) For an intermediate stroke of 70 mm, "A + Standard stroke 75 mm + Intermediate stroke 70 mm"
*3: When calculating B + Stroke dimension for intermediate strokes, do not enter the intermediate stroke value; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 70 mm, enter the standard stroke of 75 mm for calculation.
*4: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*5: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*6: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
*7: The positions of the flats for wrenches on the left and right sides are not fixed.
***8: For dimensions with each switch, refer to P. 300 to 309.**
***9: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot (LB)
SSD2-D(L)-32 to 100-LB

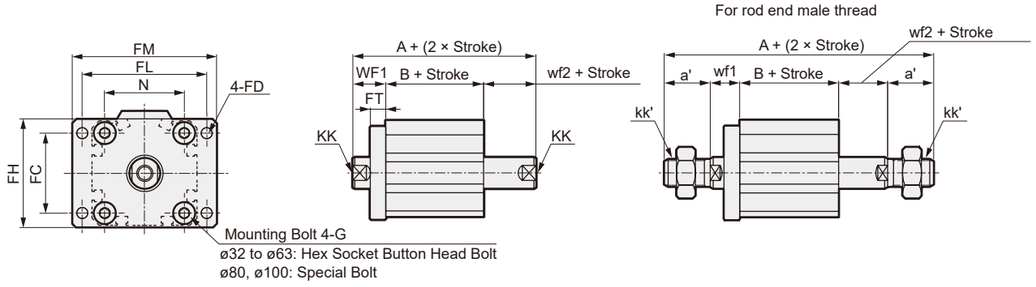


Code / Bore Size (mm)	Common dimension AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

Code / Bore Size (mm)	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø32	17	25	74.5	40.5	24.5	64.5 (74.5)	30.5 (40.5)	14.5 (24.5)	23.5	M14 × 1.5	15	23	117.5	40.5	24.5	107.5 (117.5)	30.5 (40.5)	14.5 (24.5)
ø40	17	25	84	50	34	74 (84)	40 (50)	24 (34)	23.5	M14 × 1.5	15	23	127	50	34	117 (127)	40 (50)	24 (34)
ø50	18	29.5	86.5	50.5	27.5	76.5 (86.5)	40.5 (50.5)	17.5 (27.5)	28.5	M18 × 1.5	15	26.5	137.5	50.5	27.5	127.5 (137.59)	40.5 (50.5)	17.5 (27.5)
ø63	18	31	88	52	26	78 (88)	42 (52)	16 (26)	28.5	M18 × 1.5	15	28	139	52	26	129 (139)	42 (52)	16 (26)
ø80	20	35	101	61	31	91 (101)	51 (61)	21 (31)	35.5	M22 × 1.5	18	33	168	61	31	158 (168)	51 (61)	21 (31)
ø100	22	39	115	70.5	36.5	104.5 (114.5)	60.5 (70.5)	26.5 (36.5)	35.5	M26 × 1.5	18	35	177.5	70.5	36.5	167.5 (177.5)	60.5 (70.5)	26.5 (36.5)

*1: ø80: LB cannot be selected if B + Stroke is 72 or less.
*2: Dimensions in ( ) are values when exceeding 50 strokes.

● Rod Side Flange (FA)
SSD2-D(L)-32 to 100-FA

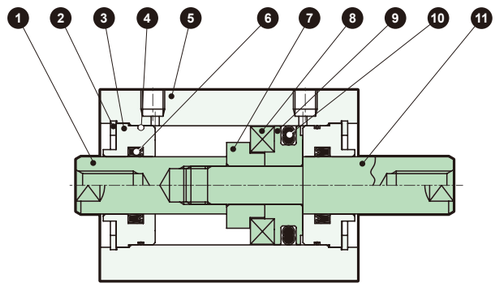


Code / Bore Size (mm)	Common dimension FC	FD	FH	FL	FM	FT	G	KK	N	For female thread WF1	WF2	Dimension with switch A	B	Dimension without switch A	B	For male thread a'	kk'	wf1	wf2	Dimension with switch A	B	Dimension without switch A	B
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	17	7	64.5	40.5	54.5 (64.5)	30.5 (40.5)	24	M14 × 1.5	15	5	107.5	40.5	97.5 (107.5)	30.5 (40.5)
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	17	7	74	50	64 (74)	40 (50)	24	M14 × 1.5	15	5	117	50	107 (117)	40 (50)
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	18	8	76.5	50.5	66.5 (76.5)	40.5 (50.5)	29	M18 × 1.5	15	5	127.5	50.5	117.5 (127.5)	40.5 (50.5)
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	18	8	78	52	68 (78)	42 (52)	29	M18 × 1.5	15	5	129	52	119 (129)	42 (52)
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	20	10	91	61	81 (91)	51 (61)	36	M22 × 1.5	18	8	158	61	148 (158)	51 (61)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	22	12	104.5	70.5	94.5 (104.5)	60.5 (70.5)	36	M26 × 1.5	18	8	167.5	70.5	157.5 (167.5)	60.5 (70.5)

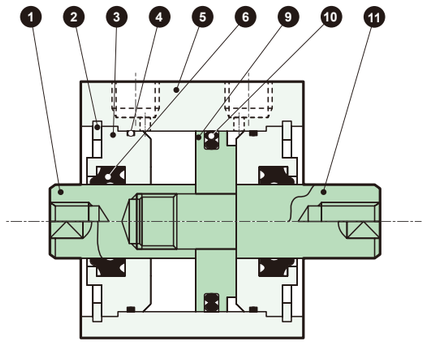
*1: Dimensions in ( ) are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø12 to ø50) (Without Cushion)

● SSD2-DL-12 to 50 (Double Acting, Double Rod Type with Switch)



● SSD2-D-12 to 50 (Double Acting, Double Rod Type)

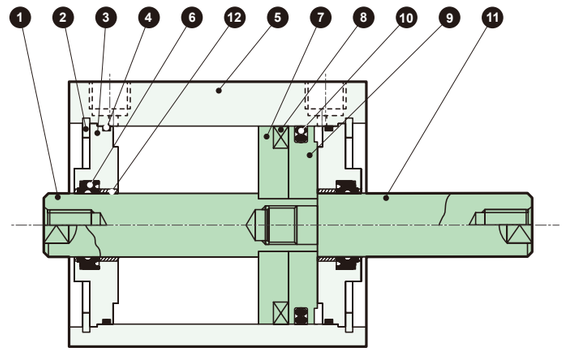


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial Hard Chrome Plating	7	Spacer	ø12, ø20, ø32, ø40: Aluminum alloy ø16, ø25, ø50: Special resin	ø12, 20, 32, 40: Chromate
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Alumite	9	Piston	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Piston Rod Ⓑ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial Hard Chrome Plating
6	Rod Packing	Nitrile Rubber					

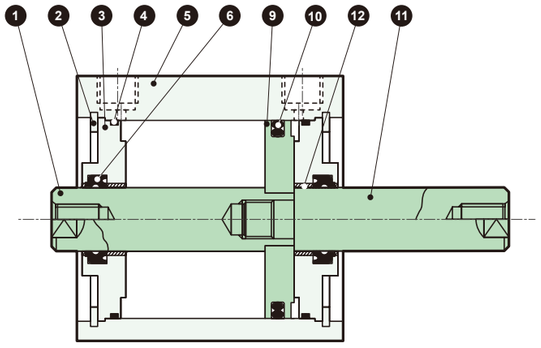
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100) (Without Cushion)

● SSD2-DL-63 to 100 (Double Acting, Double Rod Type with Switch)



● SSD2-D-63 to 100 (Double Acting, Double Rod Type)

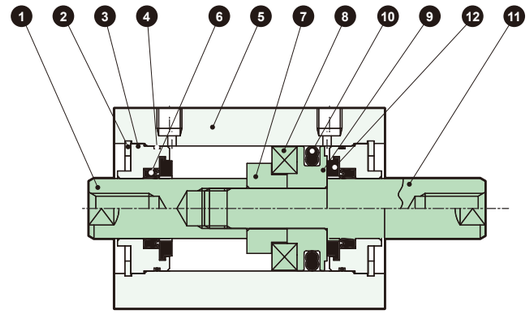


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	Chromate
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Alumite	9	Piston	Aluminum alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Piston Rod Ⓑ	Steel	Industrial Hard Chrome Plating
6	Rod Packing	Nitrile Rubber		12	Bushing	Bearing Alloy	

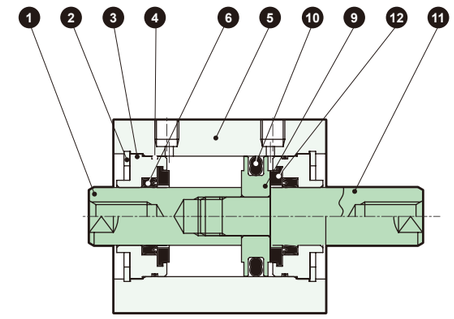
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø12 to ø50) (With Rubber Cushion)

● SSD2-DL-12D to 50D (Double Acting, Double Rod Type with Switch)



● SSD2-D-12D to 50D (Double Acting, Double Rod Type)

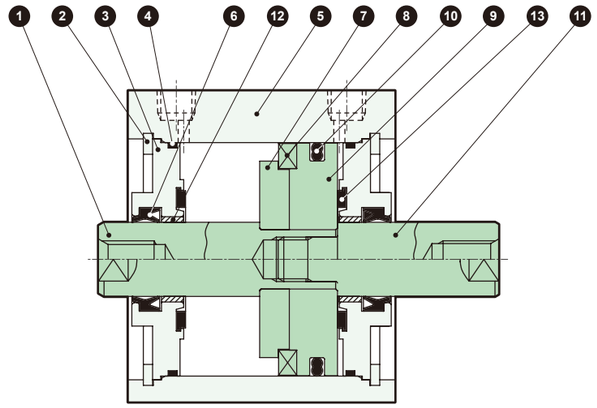


Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12, ø20, ø32, ø40: Aluminum alloy ø16, ø25, ø50: Special resin	ø12, 20, 32, 40: Chromate
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Piston Rod Ⓑ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
12	Cushion Rubber	Urethane Rubber	

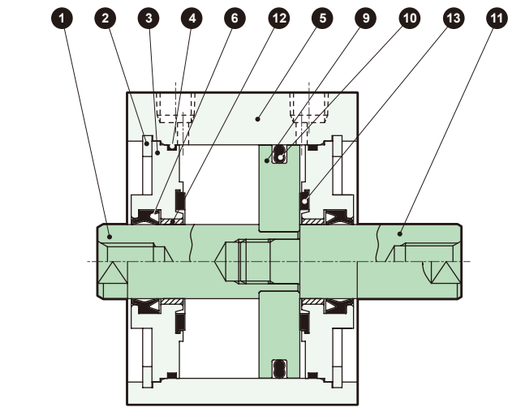
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100) (With Rubber Cushion)

● SSD2-DL-63D to 100D (Double Acting, Double Rod Type with Switch)

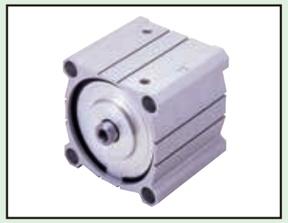


● SSD2-D-63D to 100D (Double Acting, Double Rod Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate
8	Magnet	Plastic	
9	Piston	Aluminum alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Piston Rod Ⓑ	Steel	Industrial Hard Chrome Plating
12	Bushing	Bearing Alloy	
13	Cushion Rubber	Urethane Rubber	

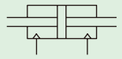
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Double Rod Type (Large Bore)

SSD2-D Series

● Bore size: ø125, ø140, ø160, ø180, ø200

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-D – 125 – ( ) – 50 ——— N

Model No. ❶ ❷ ❸ ❻

With Switch (Built-in magnet for switch)

SSD2-DL – 125 – ( ) – 50 – T0H – R – N

Model No. ❶ Bore Size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option

❶ Bore Size (mm)

Code	Content
125	ø125
140	ø140
160	ø160
180	ø180
200	ø200

❷ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT thread (Custom product) (ø125 to ø160)
GN	G thread (Custom product) (ø125 to ø160)

❸ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø125 to ø200	10 to 300	Every 1 mm

Note: Refer to Appendix 1 on the following page for details.

❹ Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

Appendix Table 1

Stroke (mm)		Applicable Bore ø125	ø140	ø160	ø180	ø200
Standard Stroke	10	●	●	●	●	●
	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
	125	●	●	●	●	●
	150	●	●	●	●	●
	175	●	●	●	●	●
	200	●	●	●	●	●
	250	●	●	●	●	●
	300	●	●	●	●	●
Minimum Stroke (mm) *1		10				
Maximum Stroke (mm)		300				
Intermediate Stroke *2		Every 1 mm				

*1: For the number of switches attachable and minimum stroke, refer to P. 142.
*2: The overall length dimension for intermediate stroke will be handled with a length dedicated to intermediate stroke.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-D–..... – T2

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-D–..... – FP1

Switch Single Unit Model No. Notation Method

SW – T0H

❹ Switch Model No.

Specifications

Item	SSD2-D SSD2-DL (With Switch)				
Bore size mm	ø125	ø140	ø160	ø180	ø200
Actuation method	Double Acting, Double Rod Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0			0.7	
Min. Operating Pressure MPa	0.05				
Proof pressure MPa	1.6			1.05	
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc3/8			Rc1/2	
Stroke tolerance mm	+2.0 0				
Operating Piston Speed mm/s	50 to 300			20 to 300	
Cushion	With rubber cushion (Standard)				
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)				
Allowable absorbed energy J	6.52	6.52	7.78	12.4	

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T*	
Number of Switches	1	2
Bore Size (mm)		
ø125	10	10
ø140		
ø160		
ø180		
ø200		

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: kg)

Stroke (mm) / Bore Size (mm)	10		20		30		40		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	4.64	4.74	4.98	5.08	5.32	5.42	5.66	5.76	6.00	6.10	6.85	6.95	7.70	7.80
ø140	6.62	6.73	7.00	7.11	7.38	7.49	7.77	7.88	8.15	8.26	9.00	9.11	10.07	10.18
ø160	9.10	9.22	9.58	9.70	10.06	10.18	10.54	10.66	11.02	11.14	12.22	12.34	13.41	13.53
ø180	13.12	13.27	13.62	13.77	14.12	14.27	14.62	14.77	15.12	15.27	16.36	16.51	17.61	17.76
ø200	16.09	16.27	16.65	16.83	17.21	17.39	17.77	17.95	18.33	18.51	19.73	19.91	21.13	21.31

Stroke (mm) / Bore Size (mm)	125		150		175		200		250		300	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	8.55	8.65	9.40	9.50	10.25	10.35	11.10	11.20	12.80	12.90	14.50	14.60
ø140	11.02	11.13	11.87	11.98	12.72	12.83	13.57	13.68	15.27	15.38	16.97	17.08
ø160	14.61	14.73	15.81	15.93	17.01	17.13	18.21	18.33	20.61	20.73	23.01	23.13
ø180	18.85	19.00	20.10	20.25	21.35	21.50	22.59	22.74	25.09	25.24	27.58	27.73
ø200	22.53	22.71	23.93	24.11	25.32	25.50	26.72	26.90	29.52	29.70	32.32	32.50

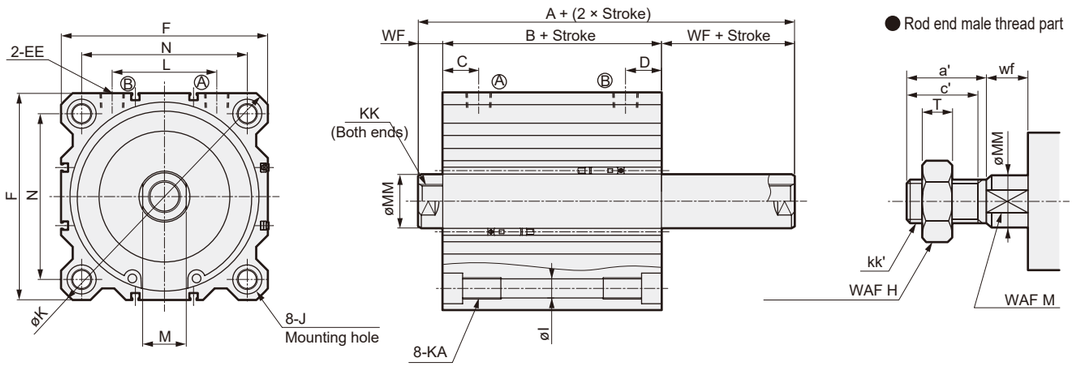
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø125	Push/Pull	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
ø140	Push/Pull	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4
ø160	Push/Pull	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	-	-	-
ø180	Push/Pull	2.39×10^3	3.58×10^3	4.77×10^3	7.16×10^3	9.54×10^3	1.19×10^4	1.43×10^4	1.67×10^4	-	-	-
ø200	Push/Pull	3.02×10^3	4.52×10^3	6.03×10^3	9.05×10^3	1.21×10^4	1.51×10^4	1.81×10^4	2.11×10^4	-	-	-

Outline Dimension Drawing (Bore size: ø125 to ø160)

● SSD2-D(L)-125 to 160 (Double Acting, Single Rod Type)



Code / Bore Size (mm)	A	B	C	D	EE	F	I	J	K	KA
ø125	115	83	29	29	Rc3/8	142	12.5	20 Counterbore Depth 13	190	M14 depth 25
ø140	115	83	27.5	27.5	Rc3/8	158	12.5	20 Counterbore Depth 13	210	M14 depth 25
ø160	125	91	30	30	Rc3/8	178	14.7	23 Counterbore depth 15.2	238	M16 depth 28

Code / Bore Size (mm)	KK *1	L	M	MM	N	WF
ø125	M22×2.5 depth 30 (22.5)	72	30	35	114	16
ø140	M22×2.5 depth 30 (22.5)	80	30	35	128	16
ø160	M24×3 depth 33 (24)	90	36	40	144	17

*1: The value in ( ) for code KK indicates the effective thread length on one side for a 10 stroke.
*2: The positions of the flats for wrenches on the left and right sides are not fixed.

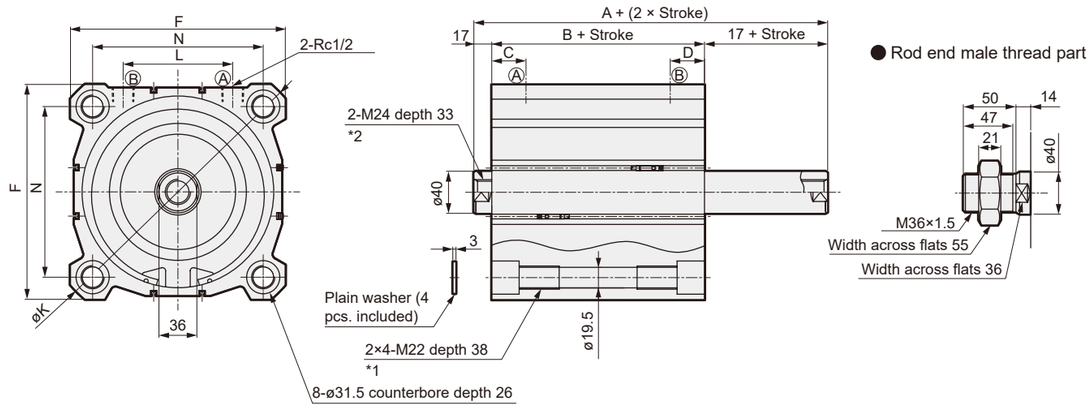
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø125	45	42	46	M30 × 1.5	30	35	18	13
ø140	45	42	46	M30 × 1.5	30	35	18	13
ø160	50	47	55	M36 × 1.5	36	40	21	14

Outline Dimension Drawing (Bore size: ø180 to ø200)

● SSD2-D(L)-180, 200 (Double Acting, Double Rod Type)

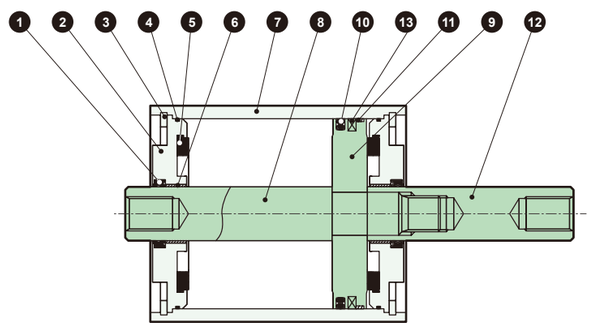


Code / Bore Size (mm)	A	B	C	D	F	K	L	N
ø180	136	102	32.5	32.5	204	270	104	162
ø200	143	109	33.5	33.5	226	300	110	182

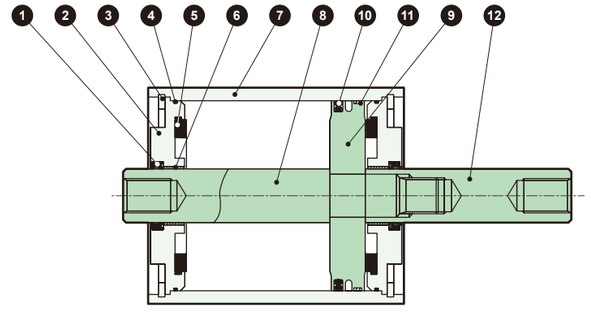
*1: For 20 strokes or less, it will be 2×4-M22 through-hole.
*2: For 10 strokes, it will be 2-M24 depth 27 (ø180), 2-M24 depth 29 (ø200).
*3: The position of the width across flats for spanner engagement on the left and right is not fixed.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

Internal Structure Diagram/Material (Bore size: ø125 to ø160)

● SSD2-DL-125 to 160 (Double Acting, Double Rod Type with Switch)



● SSD2-D-125 to 160 (Double Acting, Double Rod Type without Switch)

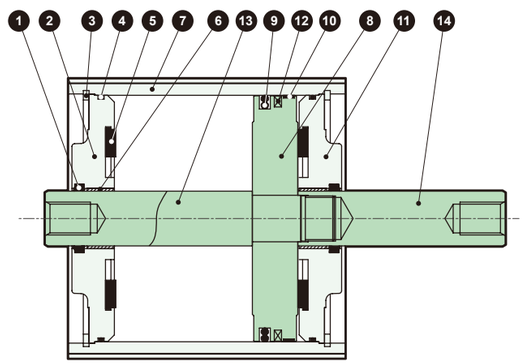


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		8	Piston Rod Ⓐ	Steel	Industrial Hard Chrome Plating
2	Rod Metal	Aluminum Alloy	Chromate	9	Piston	Aluminum Alloy	
3	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
4	Gasket	Nitrile Rubber		11	Wear Ring	Polyacetal	
5	Cushion Rubber	Urethane Rubber		12	Piston Rod Ⓑ	Steel	Industrial Hard Chrome Plating
6	Bushing	Bearing Alloy		13	Magnet	Rubber	With switch only
7	Cylinder Body	Aluminum Alloy	Hard Anodized				

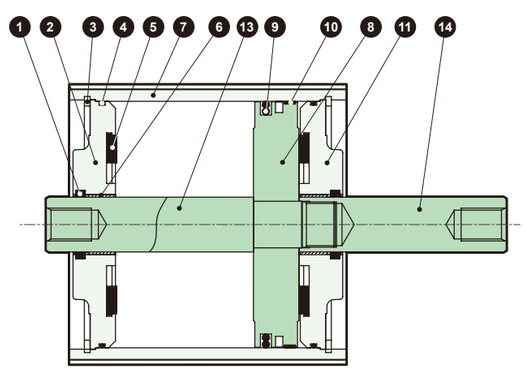
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø180, ø200)

● SSD2-DL-180, 200 (Double Acting, Double Rod Type with Switch)

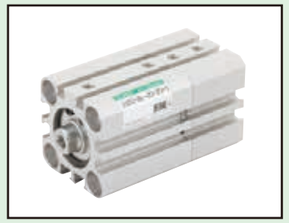


● SSD2-D-180, 200 (Double Acting, Double Rod Type without Switch)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		8	Piston	Aluminum Alloy	
2	Rod Metal	Cast Iron	Painting	9	Piston Packing	Nitrile Rubber	
3	C-type retaining ring	Steel	Zinc phosphate	10	Wear Ring	Polyacetal	
4	Gasket	Nitrile Rubber		11	Cover	Cast Iron	Painting
5	Cushion Rubber	Urethane Rubber		12	Magnet	Rubber	With switch only
6	Bushing	Bearing Alloy		13	Piston Rod A	Steel	Industrial Hard Chrome Plating
7	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Piston Rod B	Steel	Industrial Hard Chrome Plating

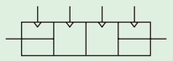
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Back-to-Back Type

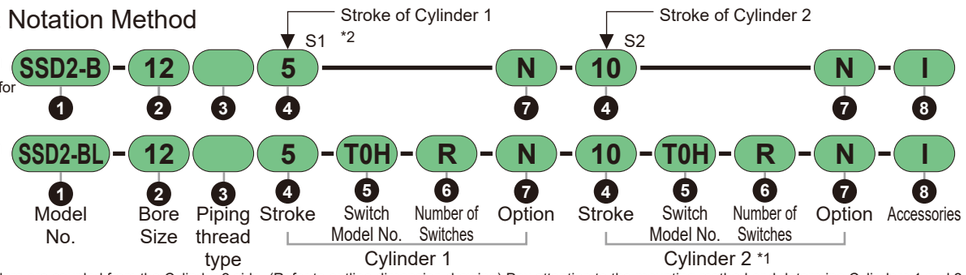
SSD2-B Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method



*1: The two cylinders are coupled from the Cylinder 2 side. (Refer to outline dimension drawing) Pay attention to the mounting method and determine Cylinders 1 and 2.

1 Model No.

Code	Content
SSD2-B	Double Acting, Back-to-Back Type
SSD2-BL	Double Acting, Back-to-Back Type with Switch

2 Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	M5 (ø12 to ø25) Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

*1: For details, refer to Appendix Table 1 on the next page.
*2: If the S1 stroke is less than or equal to the values in the right table, the usable mounting bolt length differs from the standard. Please contact our sales department.

Bore	Without Switch	With switch
	S1 Stroke	
ø20	10 or less	-
ø25	5 or less	-
ø32	5 or less	-
ø50	5 or less	-
ø63	15 or less	5 or less
ø80	20 or less	10 or less
ø100	10 or less	-

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*6
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*6: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*7: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*8: Only T2WLH, T2WLV can be selected.
*9: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
*1 N	Rod end male thread	
*2 M	Piston Rod Material (Stainless Steel)	

*1: The Option code "N" is indicated on both S1 and S2 sides, but other option codes are indicated only on the S2 side.
*2: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

8 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: Optionally, N: Available only when rod end male thread is selected.
*2: When selecting accessories, 2 pcs. will be included. If "IY" is selected, 1 pc. of each will be included.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30		50		100					
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 150.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

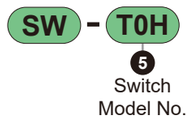
About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-B-..... -XP5

Switch Single Unit Model No. Notation Method



Specifications

Item	SSD2-B SSD2-BL (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Back-to-Back Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
Port Size	M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$S_1 = {}^{+1.0}_{0}$ $S_2 = {}^{+1.0}_{0}$									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

Minimum Stroke with Switch (With 2 Switches)

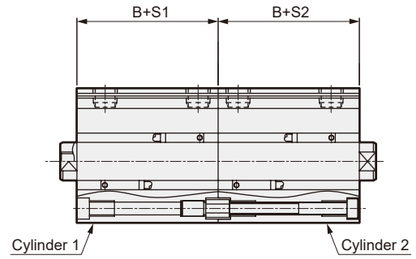
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			
ø32			15
ø40			
ø50			10
ø63			
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-B Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model Number Indication Example	Model No.: SSD2-B-32-38-50 A +2 mm spacer is added to Cylinder 1 of the standard cylinder SSD2-B-32-40-50 to make it 38 mm. B + S1 = 23 + 40 = 63 / B + S2 = 23 + 50 = 73	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

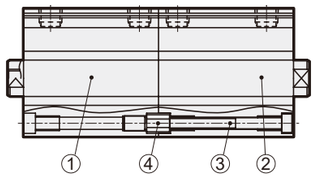
Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-	-	-	-	-	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	160	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777
ø80	-	-	928	1341	1015	1428	1101	1514	1188	1601	1274	1887	1361	1774	1448	1861	1535	1948	1621	2034	2401	2467	2833	2899
ø100	-	-	1433	2,000	1547	2114	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	3406	3478	3973	4045

Hex Socket Bolt Weight

(Unit: g)

Stroke (mm)	Cylinder 2 Stroke												Con-
Bore Size (mm)	5	10	15	20	25	30	35	40	45	50	75	100	nector
ø12	3.2	4	4.8	5.6	6.4	7.2	-	-	-	-	-	-	5.6
ø16	3.2	2.4	2.4	2.4	2.4	2.4	-	-	-	-	-	-	5.6
ø20	8	11	14	16	19	22	25	28	30	33	-	-	14
ø25	8	11	14	16	19	22	25	28	30	33	-	-	14
ø32	8	11	14	16	19	22	25	28	30	33	47	61	14
ø40	8	11	14	16	19	22	25	28	30	33	47	61	14
ø50	-	16.7	20.6	24.5	28.5	32.4	36.3	40.3	44.2	48.1	67.8	87.5	28.8
ø63	-	40.8	47.2	53.6	60	66.4	72.8	79.2	85.6	92	124	156	60
ø80	-	60	72	84	96	108	120	132	144	156	216	276	116
ø100	-	60	72	84	96	108	120	132	144	156	216	276	116

①Cylinder 1
②Cylinder 2
③Hexagon Socket Head Cap Screw
④Connector



Total cylinder weight is
Total weight = Cylinder 1 weight + Cylinder 2 weight + (Hex socket bolt + Connector) weight.

Example Total weight of SSD-B-25-30-N-10-N >
Weight of ø25 with 30 mm stroke: ••• ①
Weight of ø25 with 10 mm stroke: ••• ②
Weight of ø25 cylinder 2 hexagon socket head cap screw for 10 mm stroke + weight of connector:. ③

Total weight =①+②+③= 165 g+102 g+11 g+14 g=292 g

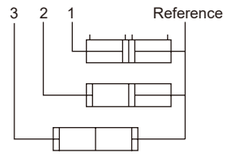
Theoretical Thrust Table

(Unit: N)

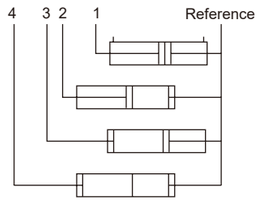
Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

SSD2-B Usage Example

When combining same strokes.
3 positions can be taken.

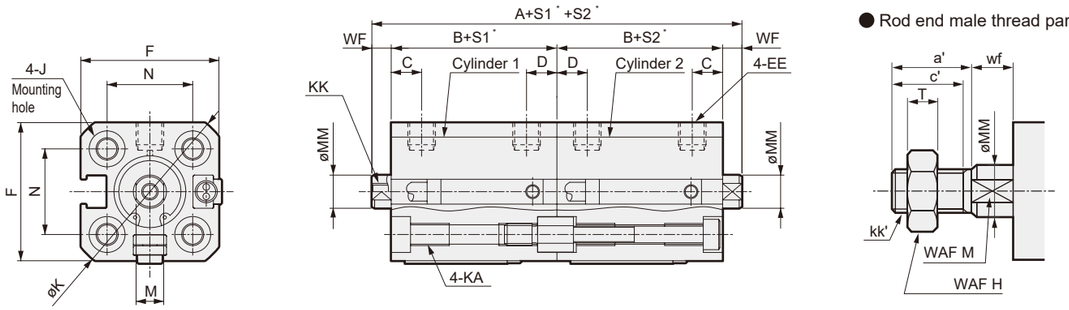


When combining different strokes.
4 positions can be taken.

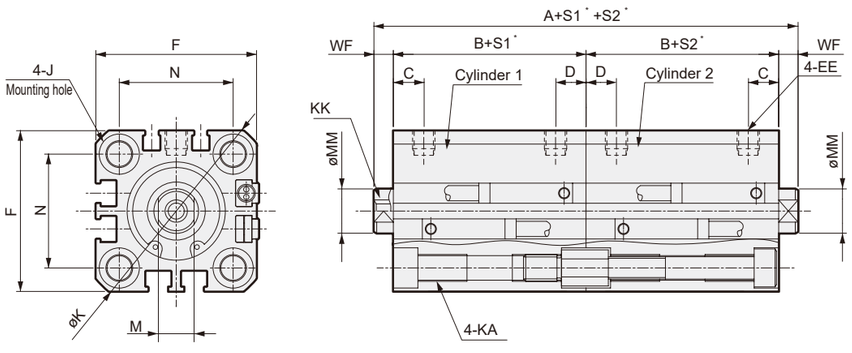


Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD2-B(L)-12·16



● SSD2-B(L)-25



*S1: Cylinder 1 stroke
S2: Cylinder 2 stroke

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø12	51	22	41	17	5.5	5.5	M5	25	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	51	22	41	17	5.5	5.5	M5	29	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	68	29.5	48	19.5	8	5.5	M5	36	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	75	32.5	55	22.5	11	6	M5	40	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

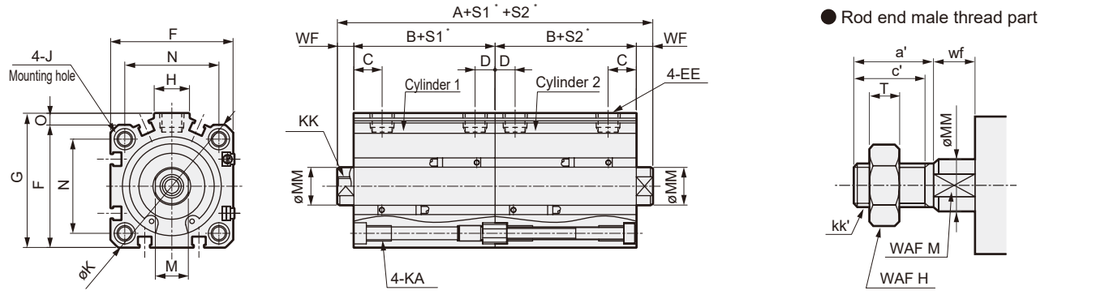
*1: When calculating A + S1 + S2, B + S1, B + S2 dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For bore sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-B(L)-32 to 100



*S1: Cylinder 1 stroke
S2: Cylinder 2 stroke

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1 *2	Dimension without switch B *1 *2	Common dimension C *4	D *4	EE *3	F	G
ø32	80	33	60 (80)	23 (33)	8 (10)	8 (5.5)	Rc1/8	45	49.5
ø40	93	39.5	73 (93)	29.5 (39.5)	12 (11.5)	8.5 (8)	Rc1/8	52	57
ø50	97	40.5	77 (97)	30.5 (40.5)	10.5	10.5	Rc1/4	64	71
ø63	108	46	88 (108)	36 (46)	13	11	Rc1/4	77	84
ø80	127	53.5	107 (127)	43.5 (53.5)	16	13	Rc3/8	98	104
ø100	150	63	130 (150)	53 (63)	23	15	Rc3/8	117	123.5

Code / Bore Size (mm)	Common dimension H	J	K	KA	KK	M	MM	N	O	WF
ø32	12.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	15	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	18	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	23	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	31	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	38	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

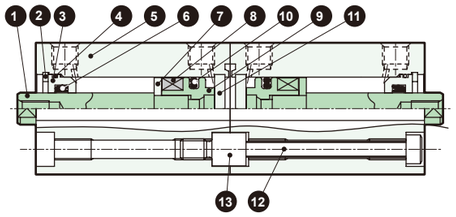
*1: When calculating A + S1 + S2, B + S1, B + S2 dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*3: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*4: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

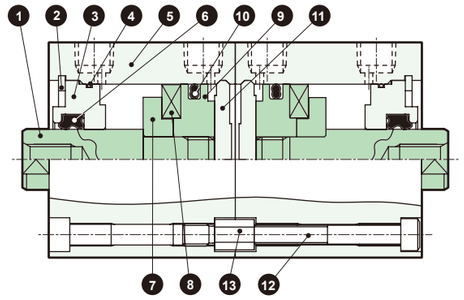
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

Internal Structure Diagram/Material (Bore size: ø12 to ø50)

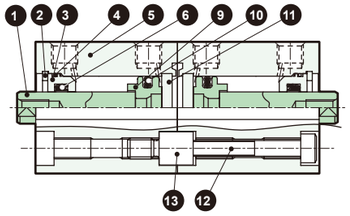
● SSD2-BL-12 to 25 (Double Acting, Back-to-Back Type with Switch)



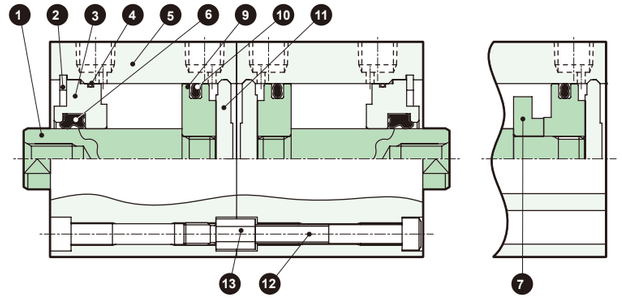
● SSD2-BL-32 to 50 (Double Acting, Back-to-Back Type with Switch)



● SSD2-B-12 to 25 (Double Acting, Back-to-Back Type)



● SSD2-B-32 to 50 (Double Acting, Back-to-Back Type)



Exceeding 50st

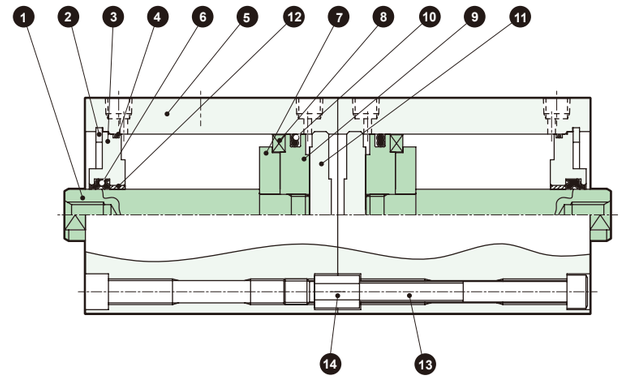
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50 Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to 25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
12	Hexagon Socket Head Cap Screw	Steel	Black Oxide
13	Connector	Steel	Zinc Chromate

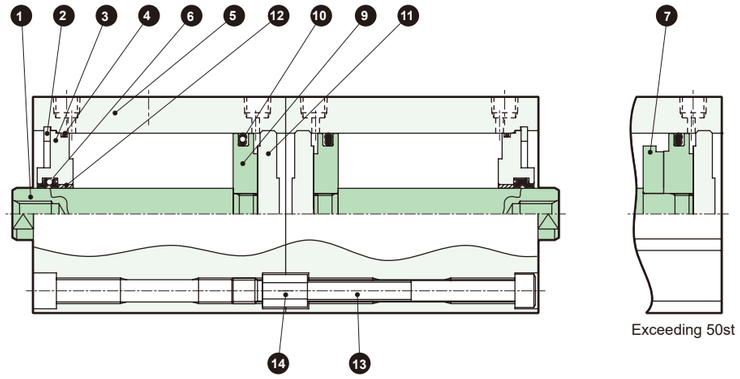
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

● SSD2-BL-63 to 100 (Double Acting, Back-to-Back Type with Switch)



● SSD2-B-63 to 100 (Double Acting, Back-to-Back Type)



Exceeding 50st

Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
13	Hexagon Socket Head Cap Screw	Steel	Black Oxide
14	Connector	Steel	Zinc Chromate

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Tandem Type

SSD2-W Series

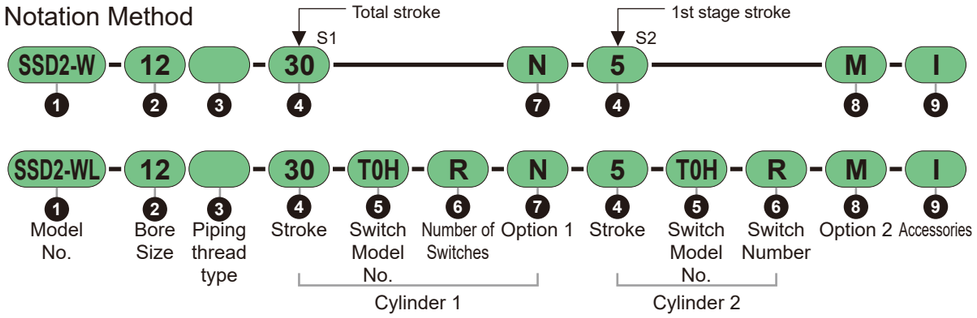
● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

With Switch
(Built-in magnet for switch)



1 Model No.

Code	Content
SSD2-W	Double Acting, Two-Stage Type
SSD2-WL	Double Acting, Tandem Type with Switch

2 Bore Size (mm)

Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

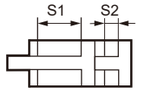
3 Port Thread Type:

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20 to ø100	1 to 50	

Note: Refer to Appendix 1 on the following page for details.



6 Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	●	●	*3
		2-wire	—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*6
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*4

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*8: Only T2WLH, T2WLV can be selected.
*9: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*6: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*7: Switches other than the model Nos. listed above are also available. (Custom products) For details, refer to P. 869.

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option 1

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

8 Option 2

Code	Content
M	Piston Rod Material (Stainless Steel)

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

9 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: With 7 option 1, select N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30	50								
Intermediate Stroke *2		Every 1 mm									

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches attachable and minimum stroke, refer to P. 160.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-W-.....-XP5

Switch Single Unit Model No. Notation Method

SW-T0H
5 Switch Model No.

Specifications

Item	SSD2-W SSD2-WL (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Two-Stage Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0 *1									
Min. Operating Pressure MPa	0.15							0.1		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
Port Size	M5				Rc1/8 *2		Rc1/4		Rc3/8	
Stroke tolerance mm	$S_1 = {}^{+1.0}_{0}$							$S_2 = {}^{0}_{-1.5}$		
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: If S1 and S2 are the same, please use with a maximum operating pressure of 0.5 MPa.
*2: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 2 Switches)

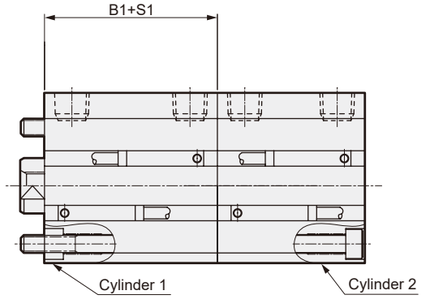
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			
ø32			15
ø40			
ø50			10
ø63			
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-W Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-W-32-38-10 A +2 mm spacer is added to Cylinder 1 of the standard cylinder SSD2-W-32-40-10 to make it 38 mm. B1+S1=30.5+40=70.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	37	87	45	87	54	96	62	104	71	113	73	115	-	-	-	-	-	-	-	-	-	-	-	-
ø16	49	105	60	105	70	115	81	126	92	137	103	148	-	-	-	-	-	-	-	-	-	-	-	-
ø20	65	120	77	152	90	165	103	178	115	190	128	203	141	216	154	229	167	242	205	280	-	-	-	-
ø25	90	181	105	196	121	212	137	228	163	244	168	259	184	275	200	291	216	307	231	322	-	-	-	-
ø32	126	240	148	262	170	284	192	306	213	327	235	349	257	371	279	393	301	415	322	436	494	542	604	652
ø40	189	332	216	359	242	385	269	412	296	439	322	465	348	491	375	518	401	544	478	571	646	695	776	825
ø50	-	-	354	548	396	590	438	632	480	674	523	717	565	759	607	801	649	843	691	885	1038	1095	1248	1305
ø63	-	-	543	822	598	877	653	932	708	987	763	1042	818	1097	874	1153	929	1208	984	1263	1474	1538	1749	1813
ø80	-	-	1002	1415	1089	1502	1175	1588	1262	1675	1348	1961	1435	1848	1522	1935	1609	2022	1695	2108	2475	2541	2907	2973
ø100	-	-	1558	2125	1672	2239	1785	2352	1899	2466	2013	2580	2127	2694	2240	2807	2354	2921	2468	3035	3531	3603	4098	4170

Total cylinder weight is
Total weight = Cylinder 1 weight + Cylinder 2 weight.
[Example Total weight of SSD-W-25-30-N-10-N]
Weight of ø25 with 30 mm stroke length: ••• ①
Weight of ø25 with 10 mm stroke length: ••• ②
Total weight =①+②= 168 g+105 g=273 g

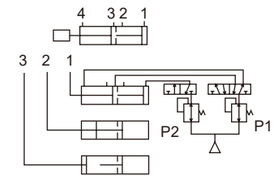
SSD2-W Usage Example

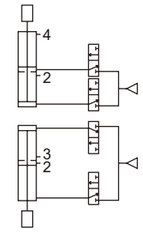
Set the pressure to P2 > P1.

● First stage push
While Port 4 is pressurized, pressurize Port 1.

● Second stage push
While Port 1 is pressurized, pressurize Port 3.

Depending on the direction of the load, P2 may not equal P1. In case of single acting use due to natural drop of load, ports 2 and 4 in the upper diagram, and ports 2 and 3 in the lower diagram become breather ports. Basically, Port 2, which does not require piping, has a plug with a filter.

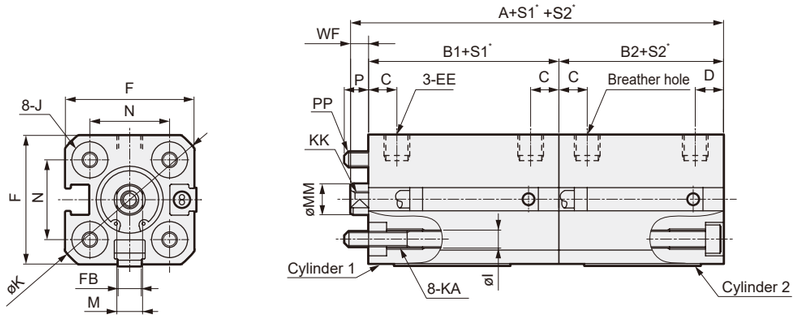




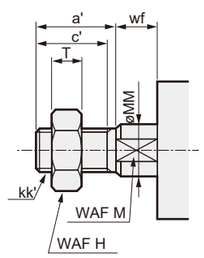
Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD2-W(L)-12 to 25

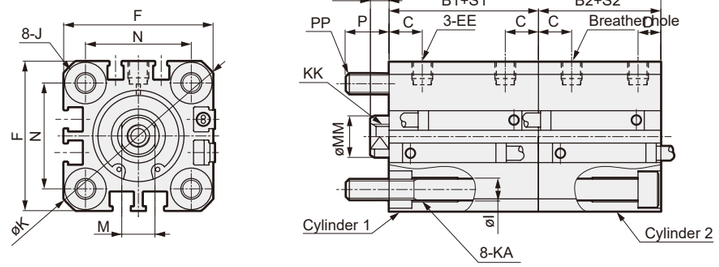
ø12, ø16



● Rod end male thread part



ø20, ø25



*S1: Total stroke S2: 1st stage stroke

Code / Bore Size (mm)	Dimension with switch		Dimension without switch		Common dimension														
	A *1	B1 *1	A *1	B1 *1	B2 *1	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF	P	PP
ø12	52.5	27	42.5	22	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5	4.5	M3
ø16	52.5	27	42.5	22	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5	4.5	M3
ø20	70	36	50	26	29.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5	10	M5
ø25	76.5	39	56.5	29	32.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5	9	M5

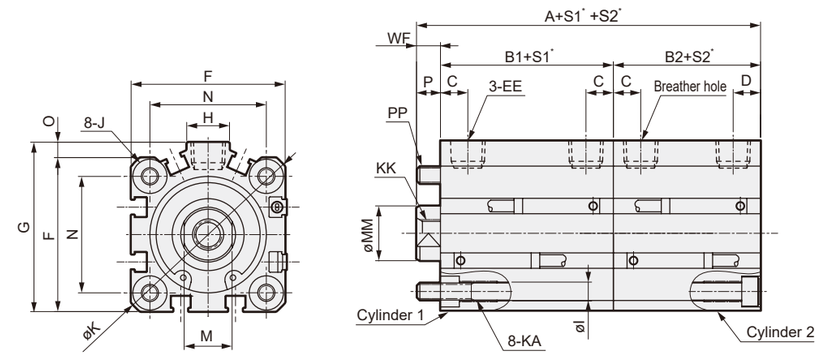
*1: When calculating A + S1 + S2, B1 + S1, B2 + S2 dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

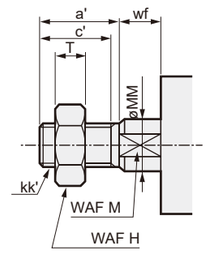
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-W(L)-32 to 100



● Rod end male thread part



*S1: Total stroke S2: 1st stage stroke

Code / Bore Size (mm)	Dimension with switch			Dimension without switch			Common dimension										
	A *1	B1 *1	B2 *1	A *1	B1 *1	B2 *1	C *3	D *3	EE *2	F	G	H	I	J			
ø32	80.5	40.5	33	60.5	30.5	23	8 (11)	8 (5.5)	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5			
ø40	96.5	50	39.5	76.5	40	29.5	12 (11.5)	8.5 (8)	Rc1/8	52	57	15	5.5	9 Counterbore depth 5.5			
ø50	99	50.5	40.5	79	40.5	30.5	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5			
ø63	106	52	46	86	42	36	13	11	Rc1/4	77	84	23	8.7	14 Counterbore depth 9			
ø80	124.5	61	53.5	104.5	51	43.5	16	13	Rc3/8	98	104	31	10.5	17.5 Counterbore depth 11			
ø100	145.5	70.5	63	125.5	60.5	53	23	15	Rc3/8	117	123.5	38	10.5	17.5 Counterbore depth 11			

Code / Bore Size (mm)	Common dimension									
	K	KA	KK	M	MM	N	O	WF	P	PP
ø32	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7	7	M5
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	7	6	M5
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	8	10.5	M6
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	8	11	M8
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	10	11.5	M10
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12	12.5	M10

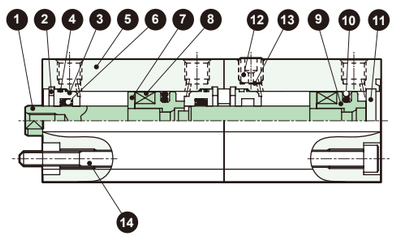
*1: When calculating A + S1 + S2, B1 + S1, B2 + S2 dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*3: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

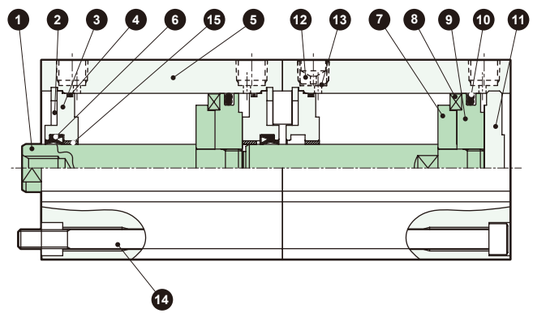
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Internal Structure Diagram/Material

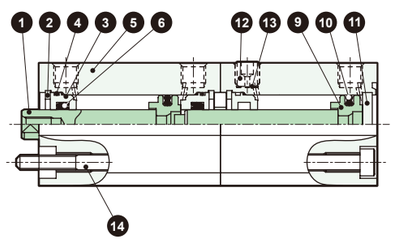
● SSD2-WL-12 to 50 (Double Acting, Tandem Type with Switch)



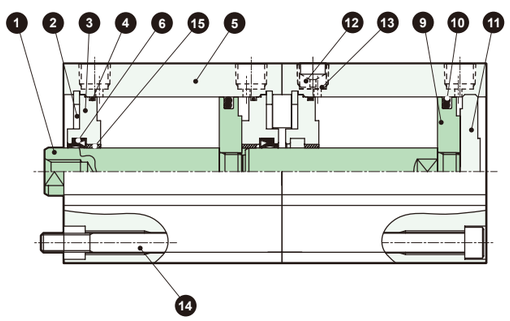
● SSD2-WL-63 to 100 (Double Acting, Tandem Type with Switch)



● SSD2-W-12 to 50 (Double Acting, Tandem Type)



● SSD2-W-63 to 100 (Double Acting, Tandem Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø100: Steel	ø16 to ø100 Industrial Hard Chrome Plating	8	Magnet	Plastic	
				9	Piston	Aluminum Alloy	Chromate
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Aluminum Alloy	ø12 to ø50: Alumite ø63 to ø100: Chromate	11	Cover	ø12 to 25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100 Alumite
4	Rod metal gasket	Nitrile Rubber		12	Plug	Stainless Steel	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Stainless steel wire rope	Stainless Steel	
6	Rod Packing	Nitrile Rubber		14	Hexagon Socket Head Cap Screw	Steel	Black Oxide
7	Spacer	Aluminum Alloy	Chromate	15	Bushing	Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

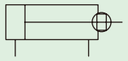
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, Non-rotating Type

SSD2-M Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-M – 12 – ( ) – 5 ——— N – LB – I

With Switch (Built-in magnet for switch)

SSD2-ML – 12 – ( ) – 5 – T0H – R – N – LB – I

❶ Model No.	❷ Bore Size	❸ Piping thread type	❹ Stroke	❺ Switch Model No.	❻ Number of Switches	❼ Option	❽ Mounting type	❾ Accessories

❶Model No.

Code	Content
SSD2-M	Double Acting, Non-Rotating Type
SSD2-ML	Double Acting, Non-rotating Type with Switch

❷Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❸Port Thread Type:

Code	Content
Blank	M5 (ø12 to ø25) Rc thread (ø32 to ø63)
NN	NPT thread (Custom product)(ø32 to ø63)
GN	G thread (Custom product) (ø32 to ø63)

❹Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø63	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

❺Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●					
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●					
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●					
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●					
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	*3
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	*4

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*10 *9

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2YDT□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 10.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

❻Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel) (Custom product for ø32 to ø63 only)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❽Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 171, P. 172, P. 174, P. 175. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❾Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63
Standard Stroke	5	●	●	●	●	●	●		
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●
	40			●	●	●	●	●	●
	45			●	●	●	●	●	●
	50			●	●	●	●	●	●
	75					●	●	●	●
	100					●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		30		50		100			
Intermediate Stroke *2		Every 1 mm							

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 168.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-M – ..... – XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-M – ..... – FP1

Switch Single Unit Model No. Notation Method

SW – T0H

❺ Switch Model No.

Specifications

Item	SSD2-M / SSD2-ML (With Switch)							
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.1							0.05
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5				Rc1/8 *1		Rc1/4	
Stroke tolerance mm	+1.0 0							
Operating Piston Speed mm/s	50 to 500							50 to 300
Cushion	None							
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Non-rotation Accuracy (*2)	±1°		±0.7°		±0.8°			
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12

*1: For ø32 without switch, 5 stroke, the port size will be M5.
*2: Initial value at retracted end.

Minimum Stroke with Switch (With 2 Switches)

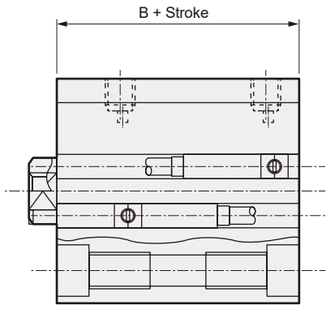
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	25
ø16			
ø20	5		20
ø25			
ø32			
ø40			15
ø50			
ø63			10

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

About Intermediate Stroke

● SSD2-M Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29
	20 to 25	1 to 49
	32 to 63	1 to 99
Model No. Indication Example	Model No.: SSD2-M-32-38 A +2 mm spacer is added to the standard cylinder SSD2-M-32-40 to make it 38 mm. B + Stroke = 32 + 40 = 72	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	44	94	52	94	61	103	69	11	78	120	80	122	-	-	-	-	-	-	-	-	-	-	-	-
ø16	58	114	69	114	79	124	90	135	101	146	112	157	-	-	-	-	-	-	-	-	-	-	-	-
ø20	76	131	88	163	101	176	114	189	126	201	139	214	152	227	165	240	178	253	191	266	-	-	-	-
ø25	102	193	117	208	133	224	149	240	165	256	180	271	196	287	212	303	228	319	243	334	-	-	-	-
ø32	166	280	188	302	210	324	232	346	253	367	275	389	297	411	319	433	341	455	362	476	575	583	682	691
ø40	-	-	210	353	237	380	263	406	290	433	317	460	343	486	370	513	396	539	423	566	683	698	815	831
ø50	-	-	341	535	383	577	425	619	467	661	509	703	552	746	594	788	636	830	678	872	1065	1082	1275	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	837	1116	893	1172	948	1227	1478	1502	1753	1777

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10²	1.13×10²
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10²	1.21×10²	1.41×10²	1.61×10²	1.81×10²	2.01×10²
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10²	1.21×10²	1.36×10³	1.51×10²
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10²	1.57×10²	1.88×10²	2.20×10²	2.51×10²	2.83×10²	3.14×10²
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10²	1.41×10²	1.65×10²	1.88×10²	2.12×10²	2.36×10²
ø25	Push	-	49.1k	73.6	98.2	1.47×10²	1.96×10²	2.45×10²	2.95×10²	3.44×10²	3.93×10²	4.42×10²	4.91×10²
	Pull	-	37.8	56.7	75.6	1.13×10²	1.51×10²	1.89×10²	2.27×10²	2.64×10²	3.02×10²	3.40×10²	3.78×10²
ø32	Push	-	80.4	1.21×10²	1.61×10²	2.41×10²	3.22×10²	4.02×10²	4.83×10²	5.63×10²	6.43×10²	7.24×10²	8.04×10²
	Pull	-	60.3	90.5	1.21×10²	1.81×10²	2.41×10²	3.02×10²	3.62×10²	4.22×10²	4.83×10²	5.43×10²	6.03×10²
ø40	Push	-	1.26×10²	1.88×10²	2.51×10²	3.77×10²	5.03×10²	6.28×10²	7.54×10²	8.80×10²	1.01×10³	1.13×10³	1.26×10³
	Pull	-	1.06×10²	1.58×10²	2.11×10²	3.17×10²	4.22×10²	5.28×10²	6.33×10²	7.39×10²	8.44×10²	9.50×10²	1.06×10³
ø50	Push	-	1.96×10²	2.95×10²	3.93×10²	5.89×10²	7.85×10²	9.82×10²	1.18×10³	1.37×10³	1.57×10³	1.77×10³	1.96×10³
	Pull	-	1.65×10²	2.47×10²	3.30×10²	4.95×10²	6.60×10²	8.25×10²	9.90×10²	1.15×10³	1.32×10³	1.48×10³	1.65×10³
ø63	Push	1.56×10²	3.12×10²	4.68×10²	6.23×10²	9.35×10²	1.25×10³	1.56×10³	1.87×10³	2.18×10³	2.49×10³	2.81×10³	3.12×10³
	Pull	1.40×10²	2.80×10²	4.20×10²	5.61×10²	8.41×10²	1.12×10³	1.40×10³	1.68×10³	1.96×10³	2.24×10³	2.52×10³	2.80×10³

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Double Clevis (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

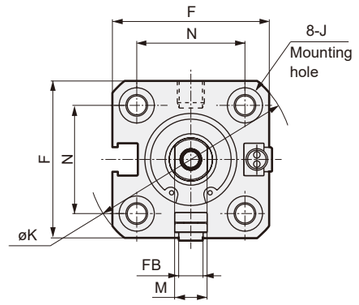
Bore Size (mm) / Mounting bracket	ø63
Foot (LB)	SSD2-LB-63
Flange (FA/FB)	SSD2-FA-63
Double Clevis (CB)	SSD2-CB-63

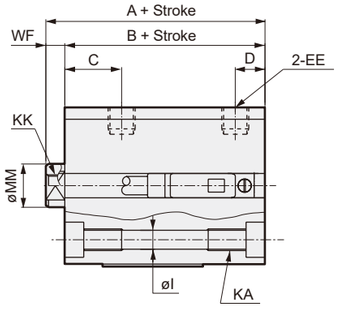
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

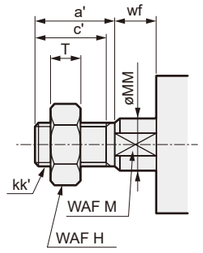
● SSD2-M(L)-12 to 25

ø12, ø16

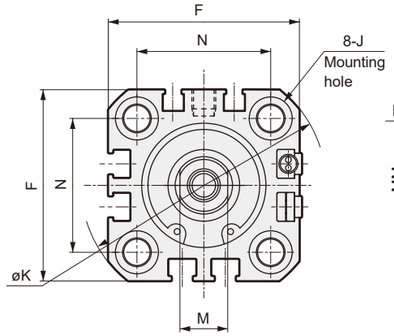


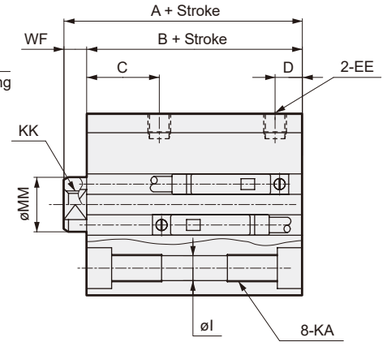


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	30.5	27	25.5	22	10.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	30.5	27	25.5	22	10.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	39	34.5	29	24.5	13	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	42.5	37.5	32.5	27.5	16	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

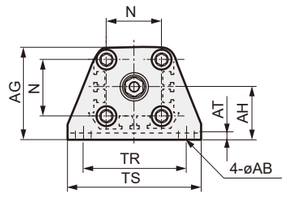
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

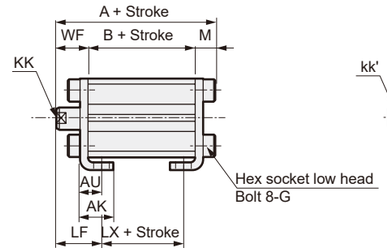
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

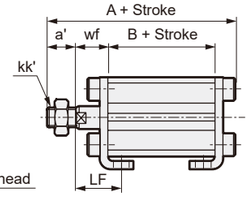
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB)
SSD2-M(L)-12 to 25-LB



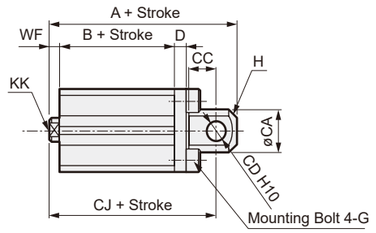


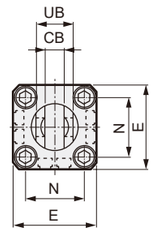
For rod end male thread



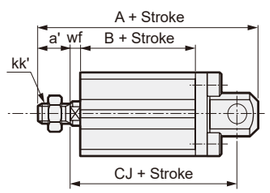
Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8	13.5	19.5	45.3	27	15	40.3	22	10	10.5	M5	13.5	19.5	55.8	27	15	50.8	22	10
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8	13.5	19.5	45.3	27	15	40.3	22	10	12	M6	13.5	19.5	57.3	27	15	52.3	22	10
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2	14.5	20.5	56.2	34.5	22.5	46.2	24.5	12.5	14	M8	14.5	20.5	70.2	34.5	22.5	60.2	24.5	12.5
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2	15	22.5	59.7	37.5	22.5	49.7	27.5	12.5	17.5	M10×1.25	15	22.5	77.2	37.5	22.5	67.2	27.5	12.5

● Double Knuckle Clevis (CB)
SSD2-M(L)-12 to 25-CB





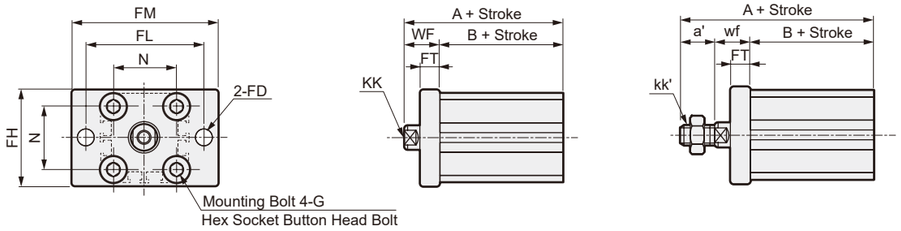
For rod end male thread



Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	G	KK	H	N	UB	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A	B	CJ
ø12	12	$5.2^{+0.2}_{0}$	7	5	4	25	M4×12	M3 depth 6	C1.5	15.5	$10^{-0.1}_{-0.3}$	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	8.5	61	27	44.5	56	22	39.5
ø16	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	M4 depth 8	C2	20	$12^{-0.1}_{-0.4}$	3.5	51.5	27	44.5	46.5	22	40.5	12	M6	8.5	63.5	27	45.5	58.5	22	40.5
ø20	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	M5 depth 7	C4	25.5	$16^{-0.1}_{-0.3}$	4.5	66	34.5	57	56	24.5	47	14	M8	9.5	80	34.5	57	70	24.5	47
ø25	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	M6 Depth 12	C5	28	$20^{-0.1}_{-0.3}$	5	72.5	37.5	62.5	62.5	27.5	52.5	17.5	M10×1.25	10	90	37.5	62.5	80	27.5	52.5

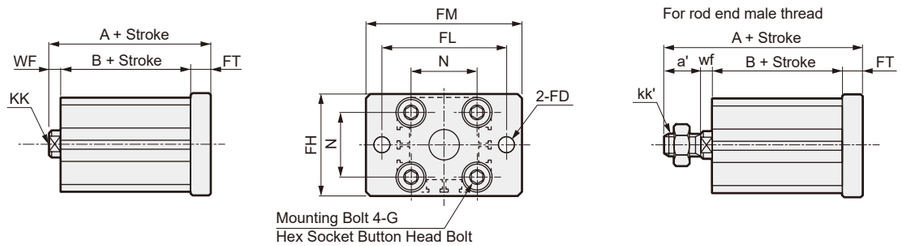
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange (FA)
SSD2-M(L)-12 to 25-FA



Code / Bore Size (mm)	Common dimension								For female thread					For male thread					
	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	13.5	40.5	27	35.5	22	10.5	M5	13.5	51	27	46	22
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	13.5	40.5	27	35.5	22	12	M6	13.5	52.5	27	47.5	22
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	14.5	49	34.5	39	24.5	14	M8	14.5	63	34.5	53	24.5
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28	15	52.5	37.5	42.5	27.5	17.5	M10×1.25	15	70	37.5	60	27.5

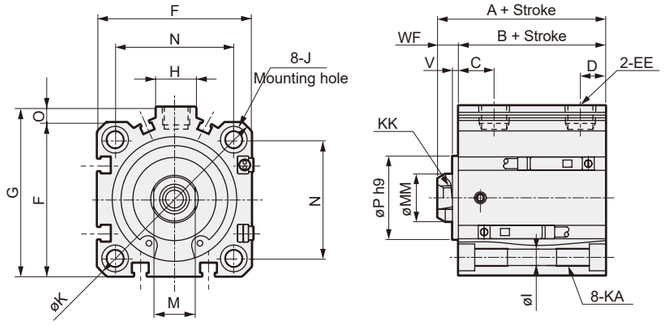
● Head Side Flange (FB)
SSD2-M(L)-12 to 25-FB



Code / Bore Size (mm)	Common dimension								For female thread					For male thread					
	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B
ø12	4.5	25	45	55	5.5	M4×12	M3 depth 6	15.5	3.5	36	27	31	22	10.5	M5	8.5	46.5	27	41.5	22
ø16	4.5	30	45	55	5.5	M4×12	M4 depth 8	20	3.5	36	27	31	22	12	M6	8.5	48	27	43	22
ø20	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	4.5	47	34.5	37	24.5	14	M8	9.5	61	34.5	51	24.5
ø25	6.6	42	52	64	8	M6×16	M6 Depth 12	28	5	50.5	37.5	40.5	27.5	17.5	M10×1.25	10	68	37.5	58	27.5

Outline Dimension Drawing (Bore size: ø32 to ø63)

● SSD2-M(L)-32 to 63



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1, *2	Dimension without switch B *1, *2	Common dimension C *4	D *4	EE *3	F	G	H	I	J	K	KA
ø32	49	42	39 (49)	32 (42)	18 (20)	8 (5.5)	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5	60	M6 depth 11
ø40	46.5	39.5	36.5 (46.5)	29.5 (39.5)	12 (11.5)	8.5 (8)	Rc1/8	52	57	15	5.5	9 Counterbore depth 5.5	69	M6 depth 11
ø50	48.5	40.5	38.5 (48.5)	30.5 (40.5)	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 depth 13
ø63	54	46	44 (54)	36 (46)	13	11	Rc1/4	77	84	23	8.7	14 Counterbore depth 9	103	M10 depth 25

Code / Bore Size (mm)	Common dimension KK	M	MM	N	O	P	V	WF
ø32	M8 depth 13	14	16	34	4.5	21	2	7
ø40	M8 depth 13	14	16	40	5	28	2	7
ø50	M10 depth 15	18	20	50	7	35	2	8
ø63	M10 depth 15	18	20	60	7	35	2	8

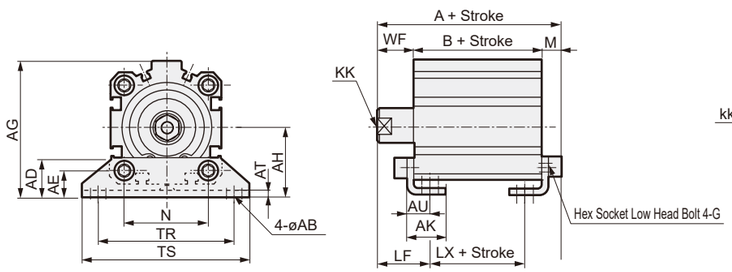
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*3: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*4: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

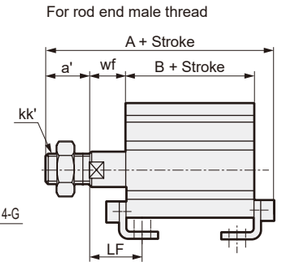
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	18	20	11	5
ø63	28.5	26	27	M18×1.5	18	20	11	5

Outline Dimension Drawing (Bore size: ø32 to ø63)

● Axial Foot (LB)
SSD2-M(L)-32 to 63-LB



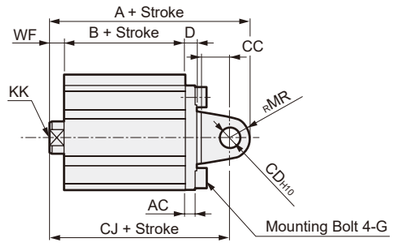


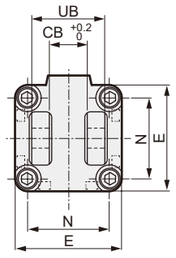
Code / Bore Size (mm)	Common dimension														For female thread				
	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M	WF	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2	17	25	66.2	42	26
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2	17	25	63.7	39.5	23.5
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2	18	29.5	66.7	40.5	17.5
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2	18	31	73.2	46	20

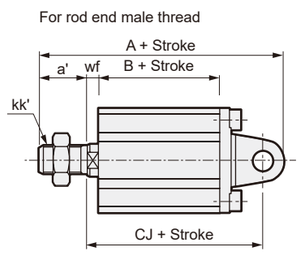
Code / Bore Size (mm)	For female thread			For male thread							
	Dimension without switch A *1	Dimension without switch B *1	Dimension without switch LX *1	a'	kk'	wf	LF	Dimension with switch A	Dimension with switch B	Dimension with switch LX	Dimension without switch A *1	Dimension without switch B *1	Dimension without switch LX
ø32	56.2 (66.2)	32 (42)	16 (26)	23.5	M14×1.5	15	23	87.7	42	26	77.7 (87.7)	32 (42)	16 (26)
ø40	53.7 (63.7)	29.5 (39.5)	13.5 (23.5)	23.5	M14×1.5	15	23	85.2	39.5	23.5	75.2 (85.2)	29.5 (39.5)	13.5 (23.5)
ø50	56.7 (66.7)	30.5 (40.5)	7.5 (17.5)	28.5	M18×1.5	15	26.5	92.2	40.5	17.5	82.2 (92.2)	30.5 (40.5)	7.5 (17.5)
ø63	63.2 (73.2)	36 (46)	10 (20)	28.5	M18×1.5	15	28	98.7	46	20	88.7 (98.7)	36 (46)	10 (20)

*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Double Knuckle Clevis (CB)
SSD2-M(L)-32 to 63-CB



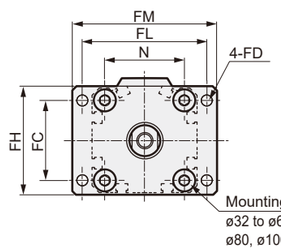


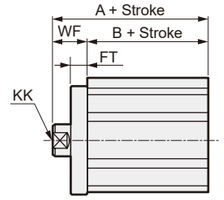


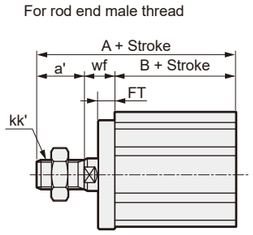
Code / Bore Size (mm)	Common dimension											For female thread								For male thread								
	AC	CB	CC	CD	D	E	G	KK	MR	N	UB	WF	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A	Dimension without switch B	Dimension without switch CJ	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension with switch CJ	Dimension without switch A	Dimension without switch B	Dimension without switch CJ
ø32	4.5	18.2	14	10	5	45	M6×16	M8 depth 13	10	34	36	7	79	42	69	69	32	59	23.5	M14×1.5	14	100.5	42	67	90.5	32	57
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36	7	78.5	39.5	68.5	68.5	29.5	58.5	23.5	M14×1.5	5	100	39.5	66.5	90	29.5	56.5
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44	8	90.5	40.5	76.5	80.5	30.5	66.5	28.5	M18×1.5	5	116	40.5	73.5	106	30.5	63.5
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44	8	98	46	84	88	36	74	28.5	M18×1.5	5	123.5	46	81	113.5	36	71

Outline Dimension Drawing (Bore size: ø32 to ø63)

● Rod Side Flange (FA)
SSD2-M(L)-32 to 63-FA





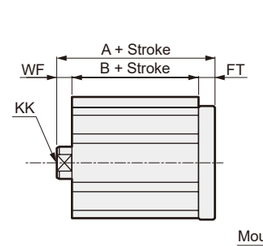


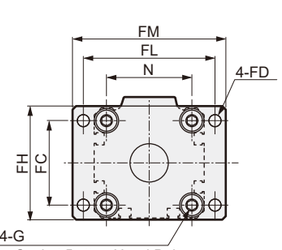
Code / Bore Size (mm)	Common dimension									For female thread				
	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	17	59	42	49 (59)	32 (42)
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	17	56.5	39.5	46.5 (56.5)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	18	58.5	40.5	48.5 (58.5)	30.5 (40.5)
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	18	64	46	54 (64)	36 (46)

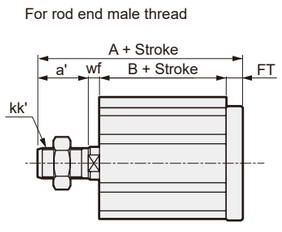
Code / Bore Size (mm)	For male thread						
	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø32	23.5	M14×1.5	15	80.5	42	70.5 (80.5)	32 (42)
ø40	23.5	M14×1.5	15	78	39.5	68 (78)	29.5 (39.5)
ø50	28.5	M18×1.5	15	84	40.5	74 (84)	30.5 (40.5)
ø63	28.5	M18×1.5	15	89.5	46	79.5 (89.5)	36 (46)

*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Head Side Flange (FB)
SSD2-M(L)-32 to 63-FB



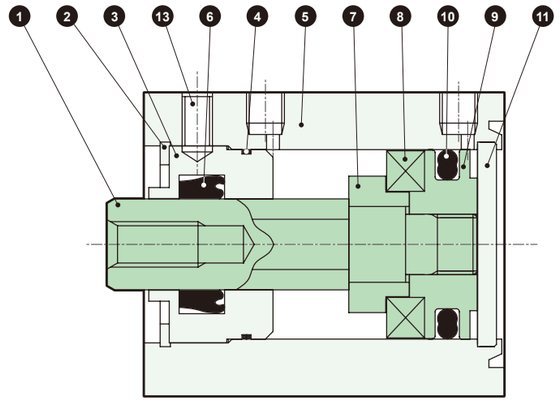




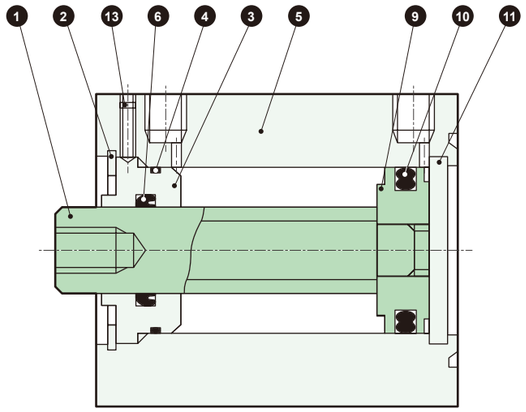
Code / Bore Size (mm)	Common dimension									For female thread					For male thread						
	FC	FD	FH	FL	FM	FT	N	G	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13	7	57	42	47	32	23.5	M14×1.5	14	78.5	42	68.5	32
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	7	54.5	39.5	44.5	29.5	23.5	M14×1.5	5	76	39.5	66	29.5
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	8	57.5	40.5	47.5	30.5	28.5	M18×1.5	5	83	40.5	73	30.5
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	8	63	46	53	36	28.5	M18×1.5	5	88.5	46	78.5	36

Internal Structure Diagram/Material (Bore size: ø12 to ø25)

● SSD2-ML-12 to 25 (Double Acting, Non-rotating Type with Switch)



● SSD2-M-12 to 25 (Double Acting, Non-rotating Type)



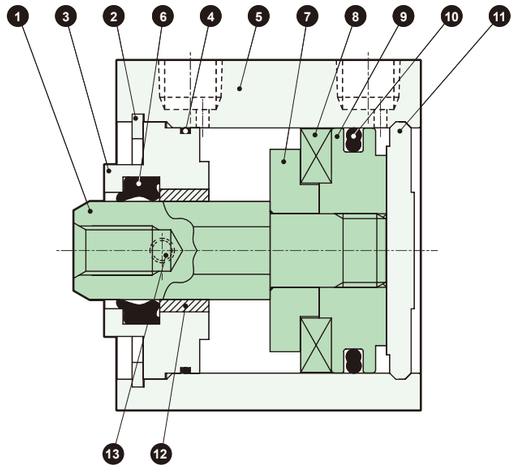
Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Stainless Steel	
13	Hexagon socket head set screw	Steel	

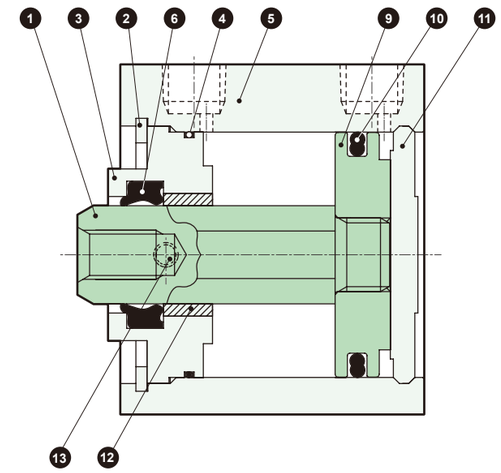
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø32 to ø63)

● SSD2-ML-32 to 63 (Double Acting, Non-rotating Type with Switch)



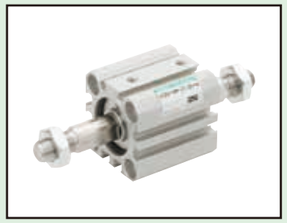
● SSD2-M-32 to 63 (Double Acting, Non-rotating Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Oil-Impregnated Bearing Alloy	
13	Hexagon socket head set screw	Steel	

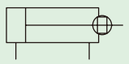
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Double Rod, Non-rotating Type

SSD2-DM Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch): SSD2-DM – 12 – [ ] – 5 ——— N – LB – I

With Switch (Built-in magnet for switch): SSD2-DML – 12 – [ ] – 5 – T0H – R – N – LB – I

① Model No.	② Bore Size	③ Piping thread type	④ Stroke	⑤ Switch Model No.	⑥ Number of Switches	⑦ Option	⑧ Mounting type	⑨ Accessories

① Model No.

Code	Content
SSD2-DM	Double Acting, Double Rod, Non-rotating Type
SSD2-DML	Double Acting, Double Rod, Non-rotating Type with Switch

② Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

③ Port Thread Type:

Code	Content
Blank	M5 (ø12 to ø25)
	Rc thread (ø32 to ø63)
NN	NPT thread (Custom product) (ø32 to ø63)
GN	G thread (Custom product) (ø32 to ø63)

④ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	5 to 30	-
ø20, ø25	5 to 50	
ø32, ø40	5 to 100	Every 5 mm
ø50, ø63	10 to 100	

Note: Refer to Appendix 1 on the following page for details.

⑤ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□			●	●					
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□			●	●					
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□			●	●					
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□			●	●					
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□			●	●					
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□			●	●	●	●	●	●	*3
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*7
	2-Color for AC Magnetic Field		—		—		T2YD□	–			●	●	●	●	●	●	*3
			—		—		T2YDT□	–			●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			●	●	●	●	●	●	*3
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□					●	●	●	●	*4

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*10 *9

*9: Only T2WLH, T2WLV can be selected.
*10: F switch lead wire length 5 m cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T1□, T2YD□, T2J□ switches cannot be mounted on ø12, ø16.
*4: T8□ switches cannot be mounted on ø12 to ø32.
*5: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*6: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 10.
*7: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*8: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

⑥ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑦ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel) Custom product (ø32 to ø63)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

⑧ Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
*1 FA	Rod Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 183, P. 185. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

⑨ Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❼Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 12	16	20	25	32	40	50	63
Standard Stroke	5	●	●	●	●	●	●		
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●
	40			●	●	●	●	●	●
	45			●	●	●	●	●	●
	50			●	●	●	●	●	●
	75					●	●	●	●
	100					●	●	●	●
Minimum Stroke (mm) *1		5						10	
Maximum Stroke (mm)		30		50		100			
Intermediate Stroke *2		-				Every 5 mm			

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 180.
*2: Intermediate stroke is possible only when exceeding 50 strokes.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-DM – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
⑤ Switch Model No.

Specifications

Item	SSD2-DM / SSD2-DML (With Switch)							
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.15							0.1
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5				Rc1/8 *1		Rc1/4	
Stroke tolerance mm	+1.0							
	0							
Operating Piston Speed mm/s	50 to 500							50 to 300
Cushion	None							
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Non-rotation Accuracy (*2)	±1°		±0.7°		±0.8°			
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12

*1: For ø32 without switch, 5 stroke, the port size will be M5.
*2: Initial value at retracted end.

With Switch Minimum Stroke (With 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø12	10 (5)	5	20
ø16			
ø20	5		15
ø25			
ø32			
ø40			10
ø50	10	10	10
ø63			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch.
*2: ( ) indicates when 1 pc. is included to the rod side.

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	52	105	60	105	69	115	77	124	86	134	95	147	-	-	-	-	-	-	-	-	-	-	-	-
ø16	74	133	85	133	95	144	106	156	117	168	128	177	-	-	-	-	-	-	-	-	-	-	-	-
ø20	131	187	143	222	161	238	179	254	196	269	214	285	232	301	249	316	267	332	284	347	-	-	-	-
ø25	147	238	162	253	178	269	194	285	210	301	226	316	242	332	257	348	275	364	288	379	-	-	-	-
ø32	184	299	230	344	275	390	322	436	366	481	413	527	459	573	469	612	485	628	522	665	776	785	1004	1012
ø40	283	426	310	453	336	479	363	506	390	533	416	569	443	601	507	617	553	663	601	707	1317	1333	1475	1490
ø50	-	-	508	702	558	751	608	803	658	851	708	901	758	950	808	1001	835	1033	911	1105	2007	2025	2252	2270
ø63	-	-	902	1266	977	1341	1052	1416	1127	1491	1202	1566	1278	1642	1353	1717	1428	1792	1503	1867	2218	2242	2593	2617

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push/Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push/Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push/Pull	-	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push/Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push/Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push/Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push/Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push/Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50

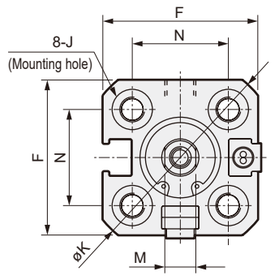
Bore Size (mm) / Mounting bracket	ø63
Foot (LB)	SSD2-LB-63
Flange (FA)	SSD2-FA-63

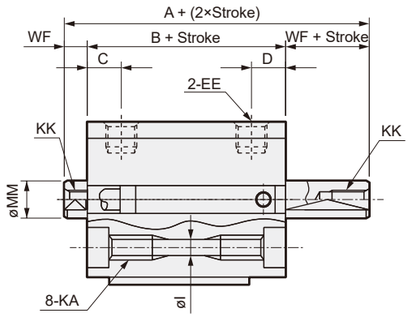
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

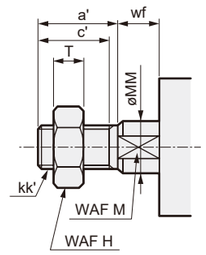
● SSD2-DM(L)-12 to 25

ø12, ø16

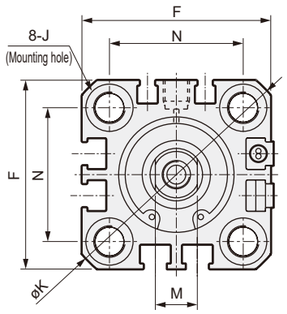


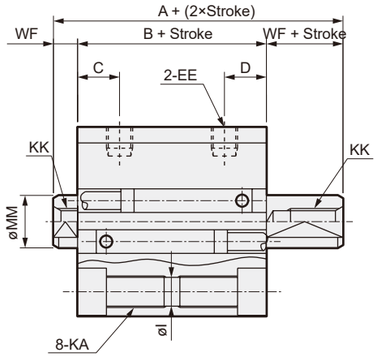


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)	Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	39	32	34	27	5.5	10.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	39	32	34	27	5.5	10.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	50	41	40	31	8	13	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	54	44	44	34	11	16	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

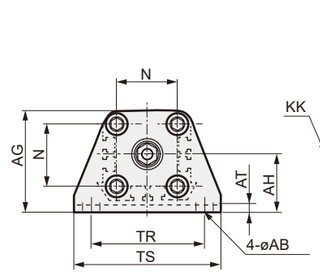
*1: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.
*2: The positions of the flats for wrenches on the left and right sides are not fixed.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

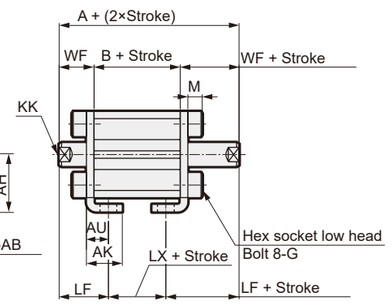
● Rod end male thread part dimension table

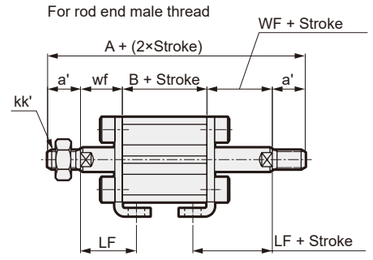
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot (LB)
SSD2-DM(L)-12 to 25-LB



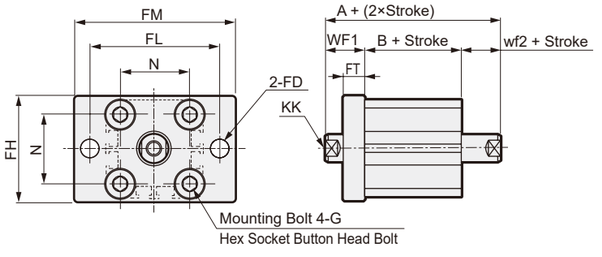


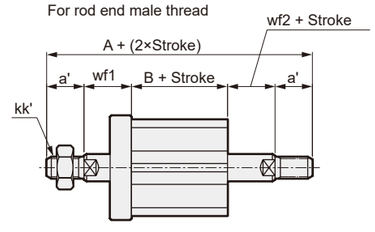


Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø12	5	29.5	17	12.5	2	8	M4×10	M3 depth 6	15.5	34	44	4.8
ø16	5	33.5	19	13	2	8	M4×10	M4 depth 8	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6×16	M5 depth 7	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6×16	M6 Depth 12	28	52	66	7.2

Code / Bore Size (mm)	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A	B	LX
ø12	13.5	19.5	59	32	15	54	27	15	10.5	M5	13.5	19.5	80	32	15	75	27	15
ø16	13.5	19.5	59	32	15	54	27	15	12	M6	13.5	19.5	83	32	15	78	27	15
ø20	14.5	20.5	70	41	19	60	31	19	14	M8	14.5	20.5	98	41	24	88	31	19
ø25	15	22.5	74	44	19	64	34	19	17.5	M10×1.25	15	22.5	109	44	24	99	34	19

● Rod Side Flange (FA)
SSD2-DM(L)-12 to 25-FA

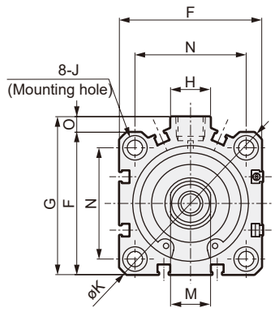


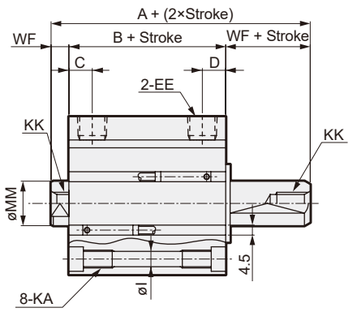


Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	N	G	KK	For female thread WF1	WF2	Dimension with switch A	B	Dimension without switch A	B	For male thread a'	kk'	wf1	wf2	Dimension with switch A	B	Dimension without switch A	B
ø12	4.5	25	45	55	5.5	15.5	M4×12	M3 depth 6	13.5	3.5	49	32	44	27	11	M5	13.5	3.5	70	32	65	27
ø16	4.5	30	45	55	5.5	20	M4×12	M4 depth 8	13.5	3.5	49	32	44	27	12	M6	13.5	3.5	73	32	68	27
ø20	6.6	39	48	60	8	25.5	M6×16	M5 depth 7	14.5	4.5	60	41	50	31	14	M8	14.5	4.5	88	41	78	31
ø25	6.6	42	52	64	8	28	M6×16	M6 Depth 12	15	5	64	44	54	34	18	M10×1.25	15	5	99	44	89	34

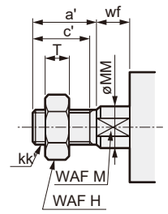
Outline Dimension Drawing (Bore size: ø32 to ø63)

● SSD2-DM(L)-32 to 63





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *2	Dimension with switch B *3	Dimension without switch A *2, *4	Dimension without switch B *2, *4	Common dimension C *6	D *6	EE *5	F	G	H	I	J	K	KA	KK
ø32	63.5	49.5	53.5 (63.5)	39.5 (49.5)	8 (5.5)	18 (20)	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13
ø40	64	50	54 (64)	40 (50)	12	12	Rc1/8	52	57	15	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13
ø50	66.5	50.5	56.5 (66.5)	40.5 (50.5)	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15
ø63	68	52	58 (68)	42 (52)	13	13	Rc1/4	77	84	23	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15

Code / Bore Size (mm)	Common dimension M	MM	N	O	P	WF
ø32	14	16	34	4.5	21	7
ø40	14	16	40	5	28	7
ø50	17	20	50	7	35	8
ø63	17	20	60	7	35	8

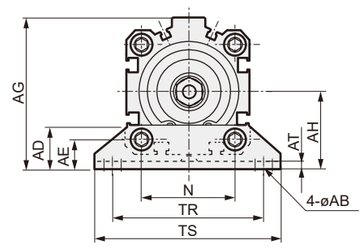
*1: Intermediate stroke is only supported when exceeding 50 strokes.
*2: When calculating A + (2×Stroke) for intermediate strokes, do not enter the intermediate stroke value; calculate using "A + Standard stroke above it + Intermediate stroke." (Example) For an intermediate stroke of 70 mm, "A + Standard stroke 75 mm + Intermediate stroke 70 mm"
*3: When calculating B + Stroke dimension for intermediate strokes, do not enter the intermediate stroke value; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 70 mm, enter the standard stroke of 75 mm for calculation.
*4: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*5: For ø32 without switch, 5 strokes, the port size will be M5.
*6: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
*7: The positions of the flats for wrenches on the left and right sides are not fixed.
***8: For dimensions with each switch, refer to P. 300 to 309.**
***9: For outline dimension drawings of individual accessories, refer to P. 34.**

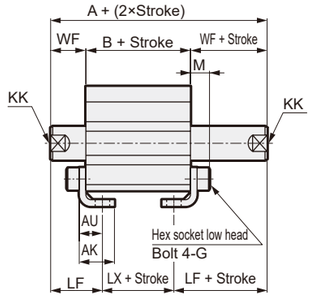
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5

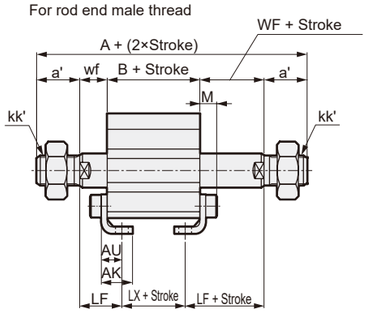
Outline Dimension Drawing (Bore size: ø32 to ø63)

● Axial Foot (LB)
SSD2-DM(L)-32 to 63-LB





For rod end male thread

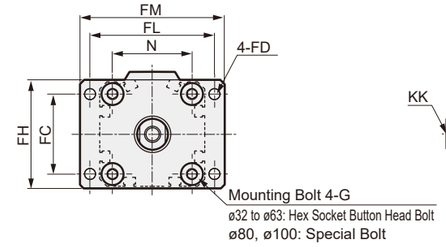


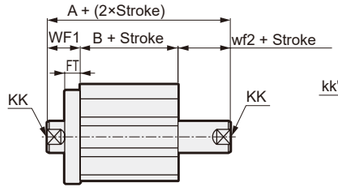
Code / Bore Size (mm)	Common dimension AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2

Code / Bore Size (mm)	For female thread WF	LF	Dimension with switch A	B	LX	Dimension without switch A *1	B *1	LX *1	For male thread a'	kk'	wf	LF	Dimension with switch A	B	LX	Dimension without switch A *1	B *1	LX *1
ø32	17	25	74.5	40.5	24.5	64.5 (74.5)	30.5 (40.5)	14.5 (24.5)	23.5	M14×1.5	15	23	117.5	40.5	24.5	107.5 (117.5)	30.5 (40.5)	14.5 (24.5)
ø40	17	25	84	50	34	74 (84)	40 (50)	24 (34)	23.5	M14×1.5	15	23	127	50	34	117 (127)	40 (50)	24 (34)
ø50	18	29.5	86.5	50.5	27.5	76.5 (86.5)	40.5 (50.5)	17.5 (27.5)	28.5	M18×1.5	15	26.5	137.5	50.5	27.5	127.5 (137.59)	40.5 (50.5)	17.5 (27.5)
ø63	18	31	88	52	26	78 (88)	42 (52)	16 (26)	28.5	M18×1.5	15	28	139	52	26	129 (139)	42 (52)	16 (26)

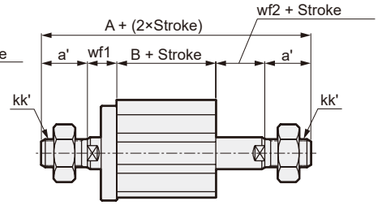
*1: Dimensions in ( ) are values when exceeding 50 strokes.

● Rod Side Flange (FA)
SSD2-DM(L)-32 to 63-FA





For rod end male thread



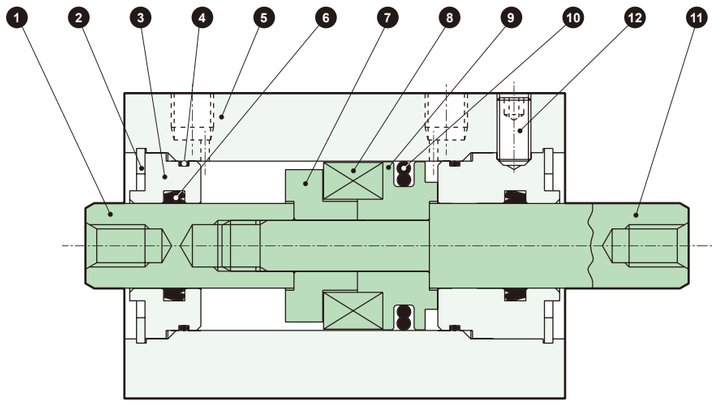
Code / Bore Size (mm)	Common dimension FC	FD	FH	FL	FM	FT	N	G	KK
ø32	34	5.5	48	56	65	8	34	M6×16	M8 depth 13
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15

Code / Bore Size (mm)	For female thread WF1	WF2	Dimension with switch A	B	Dimension without switch A *1	B *1	For male thread a'	kk'	wf1	wf2	Dimension with switch A	B	Dimension without switch A *1	B *1
ø32	17	7	64.5	40.5	54.5 (64.5)	30.5 (40.5)	23.5	M14×1.5	15	5	107.5	40.5	97.5 (107.5)	30.5 (40.5)
ø40	17	7	74	50	64 (74)	40 (50)	23.5	M14×1.5	15	5	117	50	107 (117)	40 (50)
ø50	18	8	76.5	50.5	66.5 (76.5)	40.5 (50.5)	28.5	M18×1.5	15	5	127.5	50.5	117.5 (127.5)	40.5 (50.5)
ø63	18	8	78	52	68 (78)	42 (52)	28.5	M18×1.5	15	5	129	52	119 (129)	42 (52)

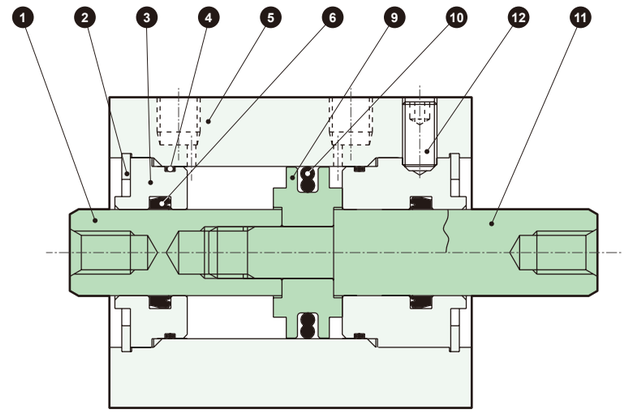
*1: Dimensions in ( ) are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø12 to ø25)

● SSD2-DML-12 to 25 (Double Acting, Double Rod, Non-rotating Type with Switch)



● SSD2-DM-12 to 25 (Double Acting, Double Rod, Non-rotating Type)

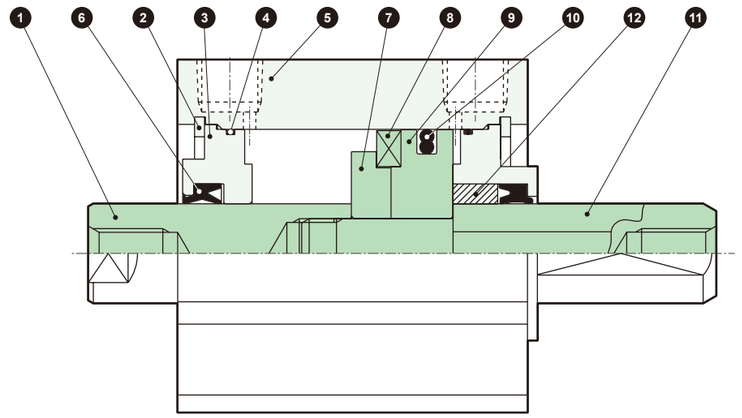


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod A	Stainless Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	Chromate
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Alumite	9	Piston	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Piston Rod B	Stainless Steel	Industrial Hard Chrome Plating
6	Rod Packing	Nitrile Rubber		12	Hexagon socket head set screw	Steel	

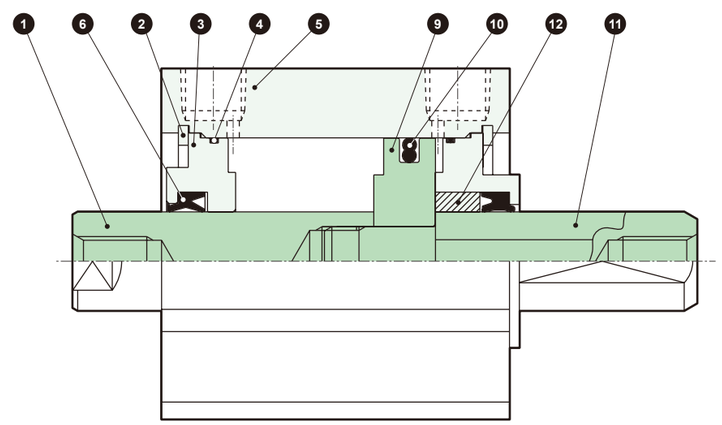
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø32 to ø63)

● SSD2-DML-32 to 63 (Double Acting, Double Rod, Non-rotating Type with Switch)

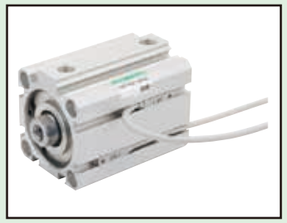


● SSD2-DM-32 to 63 (Double Acting, Double Rod, Non-rotating Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	ø32: Chromate
2	C-type retaining ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Chromate	9	Piston	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Piston Rod B	Steel	Industrial Hard Chrome Plating
6	Rod Packing	Nitrile Rubber		12	Bushing	Oil-Impregnated Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Single Rod, Heavy-duty Scraper Type

SSD2-G Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-G – 32 – 5 ——— N – LB – I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD2-GL – 32 – 10 – T0H – R – N – LB – I
1 2 3 4 5 6 7 8

1 Model No. | 2 Bore Size | 3 Stroke | 4 Switch Model No. | 5 Number of Switches | 6 Option | 7 Mounting type | 8 Accessories

1 Model No.

Code	Content
SSD2-G	Double Acting, Single Rod, Heavy-duty Scraper Type
SSD2-GL	Double Acting, Single Rod, Heavy-duty Scraper Type with Switch

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø20, ø25	1 to 50	Every 1 mm
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

4 Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*6
	2-Color for AC Magnetic Field		—		—		T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□				●	●	●	●	●	*3

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9 *8

*8: Only T2WLH, T2WLV can be selected.
*9: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T8□ switches cannot be mounted on ø20 to ø32.
*4: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*5: F-type switch with L-shaped lead wire for ø20 cannot be selected for strokes less than 15.
*6: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*7: Switches other than the model Nos. listed above are also available. (Custom products) For details, refer to P. 869.

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 *2 LB	Axial foot type (both sides) (Custom product)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 *2 FA	Rod side flange type (Custom product)	
FB	Head Side Flange Type	

*1: For ø20 to ø32, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.
*2: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

8 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: 6 Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		50		100					
Intermediate Stroke *2		Every 1 mm							

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 190.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-G – ..... – XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-G – ..... – FP1

Switch Single Unit Model No. Notation Method

SW – T0H
4 Switch Model No.

Specifications

Item	SSD2-G / SSD2-GL (With Switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.15					0.1		
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5		Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$							
Operating Piston Speed mm/s	50 to 500					50 to 300		
Cushion	None							
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Allowable absorbed energy J	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

Minimum Stroke with Switch (With 2 Switches)

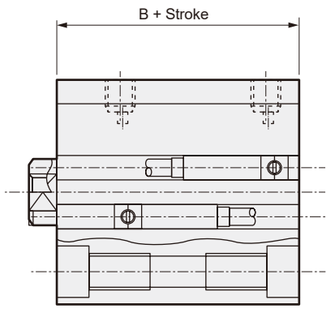
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø20	5	5	20
ø25			
ø32			
ø40			15
ø50			
ø63			10
ø80			
ø100			

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD2 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-G-32-38 A +2 mm spacer is added to the standard cylinder SSD2-G-32-40 to make it 38 mm. B + Stroke = 33 + 40 = 73	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	108	163	120	195	133	208	146	221	158	233	171	246	184	259	197	272	210	285	223	298	-	-	-	-
ø25	151	242	166	257	182	273	198	289	214	305	229	320	245	336	261	352	293	384	292	383	-	-	-	-
ø32	230	344	252	366	274	388	296	410	317	431	339	453	361	475	383	497	427	519	426	540	487	648	707	755
ø40	301	444	328	471	354	497	381	524	408	551	434	577	461	604	487	630	540	657	540	683	625	816	890	948
ø50	-	-	513	707	555	749	597	791	639	833	682	876	734	918	766	960	890	1002	850	1044	787	1254	1307	1464
ø63	-	-	733	1012	788	1067	843	1122	898	1177	953	1232	1009	1288	1064	1343	1175	1398	1174	1453	1384	1728	1939	2003
ø80	-	-	1532	1945	1619	2032	1705	2118	1792	2203	1878	2288	1965	2377	2052	2465	2226	2552	2225	2638	2564	3071	3434	3503
ø100	-	-	2212	2779	2326	2893	2439	3006	2553	3120	2667	3234	2781	3348	2894	3461	3121	3575	3122	3689	3622	4259	4757	4829

Theoretical Thrust Table

(Unit: N)

Bore Size	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{3}
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Foot (LB)				SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80
Flange (FA/FB)				SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

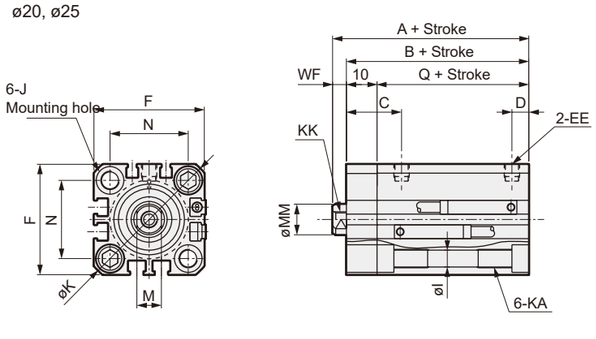
Bore Size (mm) / Mounting bracket	ø100
Foot (LB)	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-100

*1: Foot type mounting brackets are 2 pcs/set.
*2: For ø20 to ø32, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Please contact our sales department.

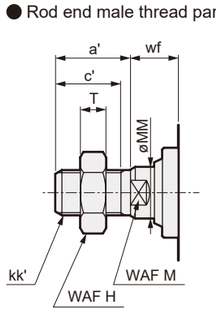
Outline Dimension Drawing

● SSD2-G(L)-20 to 100

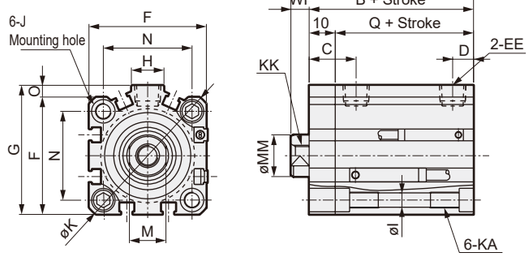
ø20, ø25



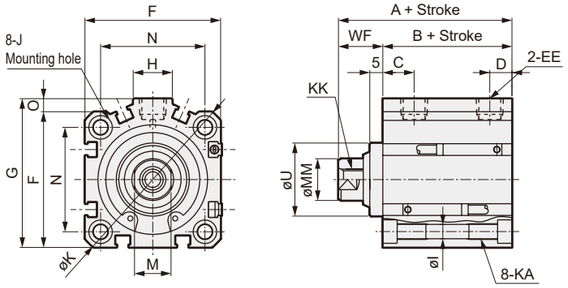
● Rod end male thread part



ø32



ø40 to ø100



Code / Bore Size	Dimension with switch A *1	B *1	Q	Dimension without switch A *1 *2	B *1 *2	Q *2	Common dimension C	D	EE *3	F	G	H	I	J *4
ø20	44	39.5	29.5	34	29.5	19.5	18	5.5	M5	36	-	-	5.5	9 Counterbore depth 5.5 (15.5)
ø25	47.5	42.5	32.5	37.5	32.5	22.5	21	6	M5	40	-	-	5.5	9 Counterbore depth 5.5 (15.5)
ø32	50	43	33	40 (50)	33 (43)	23 (33)	18	8	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5 (15.5)
ø40	56.5	39.5	-	46.5 (56.5)	29.5 (39.5)	-	12	8.5	Rc1/8	52	57	15	5.5	9 Counterbore depth 5.5
ø50	58.5	40.5	-	48.5 (58.5)	30.5 (40.5)	-	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5
ø63	64	46	-	54 (64)	36 (46)	-	13	11	Rc1/4	77	84	23	8.7	14 Counterbore depth 9
ø80	73.5	53.5	-	63.5 (73.5)	43.5 (53.5)	-	16	13	Rc3/8	98	104	31	10.5	17.5 Counterbore depth 11
ø100	85	63	-	75 (85)	53 (63)	-	23	15	Rc3/8	117	123.5	38	10.5	17.5 Counterbore depth 11

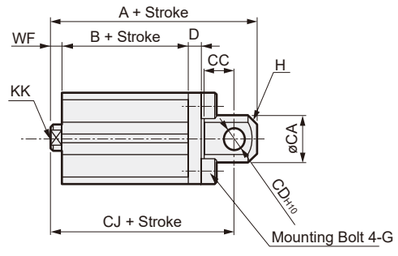
Code / Bore Size (mm)	Common dimension K	KA	KK	M	MM	N	O	U	WF	Rod end male thread part outline dimension a'	c'	H	kk'	M	MM	T	wf
ø20	47	M6 depth 11	M5 depth 7	8	10	25.5	-	-	4.5	14	12	13	M8	8	10	5	4.5
ø25	51	M6 depth 11	M6 Depth 12	10	12	28	-	-	5	17.5	15	17	M10×1.25	10	12	6	5
ø32	60	M6 depth 11	M8 depth 13	14	16	34	4.5	-	7	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	28	17	23.5	20.5	22	M14×1.5	14	16	8	15
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	35	18	28.5	26	27	M18×1.5	17	20	11	15
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	35	18	28.5	26	27	M18×1.5	17	20	1	15
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	43	20	35.5	32.5	32	M22×1.5	22	25	13	18
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	59	22	35.5	32.5	41	M26×1.5	27	30	16	18

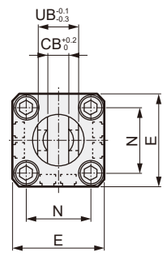
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A, B, Q are values when exceeding 50 strokes.
*3: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*4: Dimension in ( ) for code J is the dimension of the rod side mounting hole.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**
*7: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.

Outline Dimension Drawing

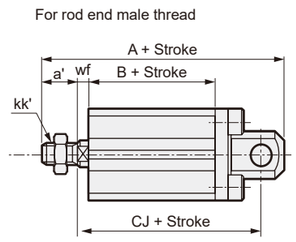
● Double Knuckle Clevis (CB)
SSD2-G(L)-20 to 100-CB

· ø20, ø25

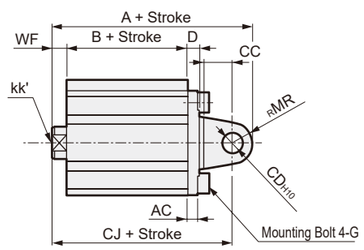


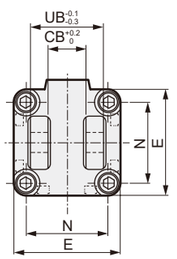


For rod end male thread

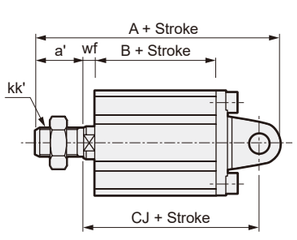


· ø32 to ø100





For rod end male thread



Code / Bore Size (mm)	Common dimension AC	CA	CB	CC	CD	D	E	G	KK	MR	N	UB	H
ø20	-	20	8.2	12	8	5	36	M6×16	M5 depth 7	-	25.5	16	C4
ø25	-	24	10.2	14	10	5	40	M6×16	M6 Depth 12	-	28	20	C5
ø32	4.5	-	18 .2	14	10	5	45	M6×16	M8 depth 13	10	34	36	-
ø40	5	-	18 .2	14	10	6	52	M6×16	M8 depth 13	10	40	36	-
ø50	6	-	22 .2	20	14	7	64	M8×20	M10 depth 15	14	50	44	-
ø63	7	-	22 .2	20	14	8	77	M10×25	M10 depth 15	14	60	44	-
ø80	9	-	28 .2	27	18	10	98	M12×40	M16 depth 21	18	77	56	-
ø100	12	-	32 .2	31	22	13	117	M12×40	M20 depth 27	22	94	64	-

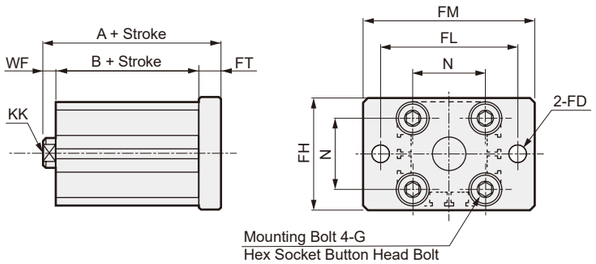
Code / Bore Size (mm)	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1
ø20	4.5	71	39.5	62	61	29.5	52	14	M8	4.5	85	39.5	62	75	29.5	52
ø25	5	77.5	42.5	67.5	67.5	32.5	57.5	17.5	M10×1.25	5	95	42.5	67.5	85	32.5	57.5
ø32	7	80	43	70	70 (80)	33 (43)	60 (70)	23.5	M14×1.5	5	101.5	43	68	91.5 (101.5)	33 (43)	58 (68)
ø40	17	88.5	39.5	78.5	78.5 (88.5)	29.5 (39.5)	68.5 (78.5)	23.5	M14×1.5	15	110	39.5	76.5	100 (110)	29.5 (39.5)	66.5 (76.5)
ø50	18	100.5	40.5	86.5	90.5 (100.5)	30.5 (40.5)	76.5 (86.5)	28.5	M18×1.5	15	126	40.5	83.5	116 (126)	30.5 (40.5)	73.5 (83.5)
ø63	18	108	46	94	98 (108)	36 (46)	84 (94)	28.5	M18×1.5	15	133.5	46	91	123.5 (133.5)	36 (46)	81 (91)
ø80	20	129.5	53.5	111.5	119.5 (129.5)	43.5 (53.5)	101.5 (111.5)	35.5	M22×1.5	18	163	53.5	109.5	153 (163)	43.5 (53.5)	99.5 (109.5)
ø100	22	152	63	130	142 (152)	53 (63)	120 (130)	35.5	M26×1.5	18	183.5	63	126	173.5 (183.5)	53 (63)	116 (126)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

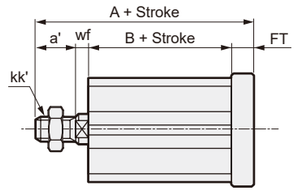
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-G(L)-20 to 100-FB

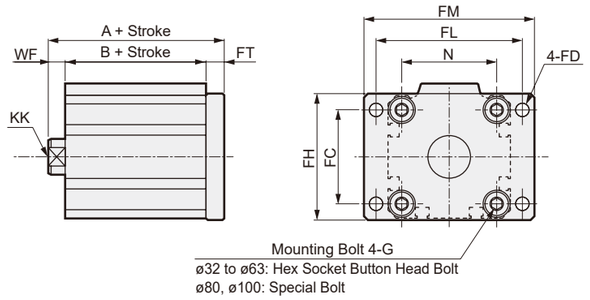
· ø20, ø25



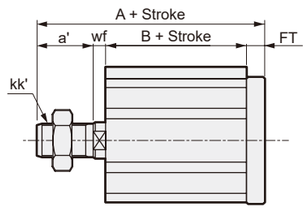
For rod end male thread



· ø32 to ø100



For rod end male thread



Code	Common dimension									For female thread				For male thread						
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø20	-	6.6	39	48	60	8	M6×16	M5 depth 7	25.5	4.5	52	39.5	42	29.5	14	M8	4.5	66	39.5	56	29.5
ø25	-	6.6	42	52	64	8	M6×16	M6 Depth 12	28	5	55.5	42.5	45.5	32.5	17.5	M10×1.25	5	73	42.5	63	32.5
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	7	58	43	48 (58)	33 (43)	23.5	M14×1.5	5	79.5	43	69.5 (79.5)	33 (43)
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	17	64.5	39.5	54.5 (64.5)	29.5 (39.5)	23.5	M14×1.5	15	86	39.5	76 (86)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	18	67.5	40.5	57.5 (67.5)	30.5 (40.5)	28.5	M18×1.5	15	93	40.5	83 (93)	30.5 (40.5)
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	18	73	46	63 (73)	36 (46)	28.5	M18×1.5	15	98.5	46	88.5 (98.5)	36 (46)
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	20	84.5	53.5	74.5 (84.5)	43.5 (53.5)	35.5	M22×1.5	18	118	53.5	108 (118)	43.5 (53.5)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	22	96	63	86 (96)	53 (63)	35.5	M26×1.5	18	127.5	63	117.5 (127.5)	53 (63)

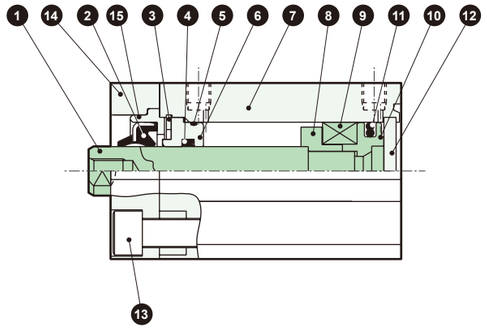
*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

MEMO

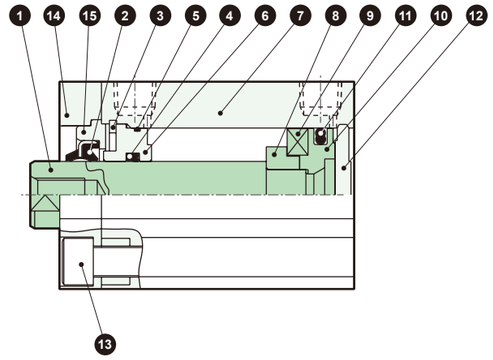
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

Internal Structure Diagram/Material (Bore size: ø20 to ø32)

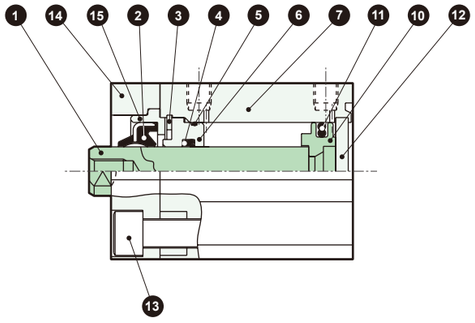
● SSD2-GL-20, 25 (Double Acting, Single Rod, Heavy-duty Scraper Type with Switch)



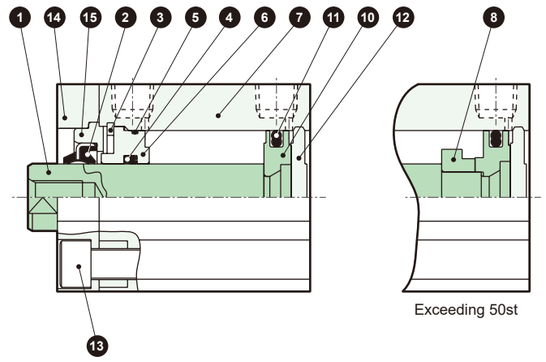
● SSD2-GL-32 (Double Acting, Single Rod, Heavy-duty Scraper Type with Switch)



● SSD2-G-20, 25 (Double Acting, Single Rod, Heavy-duty Scraper Type)



● SSD2-G-32 (Double Acting, Single Rod, Heavy-duty Scraper Type)



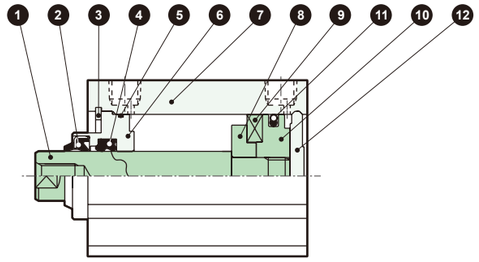
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20, ø25: Stainless Steel ø32: Steel	Industrial Hard Chrome Plating
2	Scraper	Nitrile Rubber, Steel	
3	C-type retaining ring	Stainless Steel	
4	Rod Packing	Nitrile Rubber	
5	Rod metal gasket	Nitrile Rubber	
6	Rod Metal	Aluminum Alloy	Alumite
7	Cylinder Body	Aluminum Alloy	Hard Anodized
8	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
9	Magnet	Plastic	
10	Piston	Aluminum Alloy	Chromate
11	Piston Packing	Nitrile Rubber	
12	Cover	ø20 to ø25: Stainless steel ø32: Aluminum alloy	ø32: Alumite
13	Hexagon Socket Head Cap Screw	Stainless Steel	
14	Adapter (A)	Aluminum Alloy	Alumite
15	Adapter (B)	Aluminum Alloy	Alumite

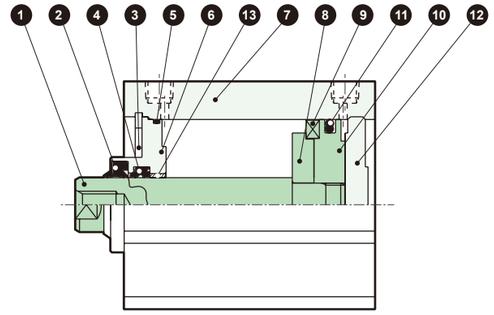
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø40 to ø100)

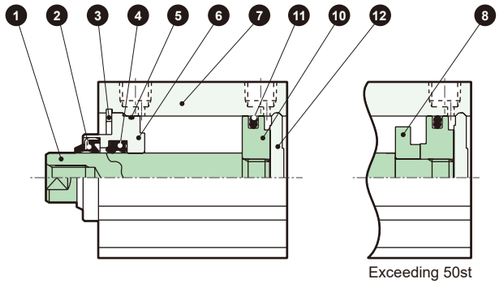
● SSD2-GL-40, 50 (Double Acting, Single Rod, Heavy-duty Scraper Type with Switch)



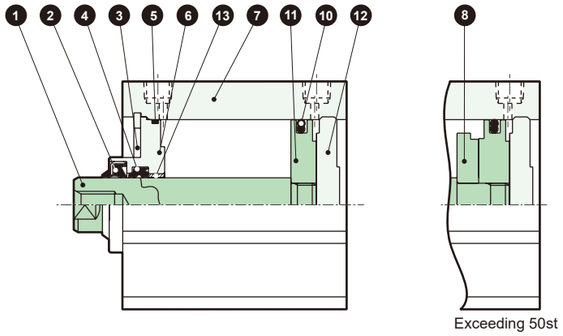
● SSD2-GL-63 to 100 (Double Acting, Single Rod, Heavy-duty Scraper Type with Switch)



● SSD2-G-40, 50 (Double Acting, Single Rod, Heavy-duty Scraper Type)



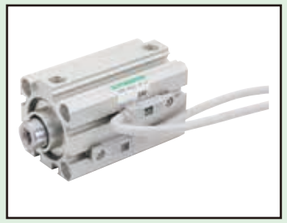
● SSD2-G-63 to 100 (Double Acting, Single Rod, Heavy-duty Scraper Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	Scraper	Nitrile Rubber, Steel	
3	C-type retaining ring	Stainless Steel	
4	Rod Packing	Nitrile Rubber	
5	Rod metal gasket	Nitrile Rubber	
6	Rod Metal	Aluminum Alloy	ø40, ø50: Alumite ø63 to ø100: Chromate

Part No.	Part Name	Material	Remarks
7	Cylinder Body	Aluminum Alloy	Hard Anodized
8	Spacer	Aluminum Alloy	Chromate
9	Magnet	Plastic	
10	Piston	Aluminum Alloy	Chromate
11	Piston Packing	Nitrile Rubber	
12	Cover	Aluminum Alloy	Alumite
13	Bushing	Bearing Alloy	ø63 to ø100 only

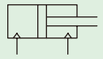
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Cutting Oil Resistant Type

SSD2-G2, G3 Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-G2 – 20 – [ ] – 30 ——— N – LB – I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD2-G2L – 20 – [ ] – 30 – T2YLH – R – N – LB – I
1 2 3 4 5 6 7 8 9

1 Model No. · 2 Bore Size · 3 Piping thread type · 4 Stroke · 5 Switch Model No. · 6 Number of Switches · 7 Option · 8 Mounting type · 9 Accessories

1 Model No.

Code	Content
SSD2-G2	Double Acting, Cutting Oil Resistant Type, Cutting Oil Resistant Scraper + Nitrile Rubber Packing
SSD2-G3	Double Acting, Cutting Oil Resistant Type, Cutting Oil Resistant Scraper + Fluororubber Packing
SSD2-G2L	Double Acting, Cutting Oil Resistant Type, Cutting Oil Resistant Scraper + Nitrile Rubber Packing with Switch
SSD2-G3L	Double Acting, Cutting Oil Resistant Type, Cutting Oil Resistant Scraper + Fluororubber Packing with Switch

2 Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	M5 (ø16 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Solid State	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
	For 2-Color Cutting Oil	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3YLH□	T3YLV□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

*3 *Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*3: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T2WLH
3 m T2WLH 3
5 m T2WLH 5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

8 Mounting Type

Mounting brackets are included to the product for shipment.

	Code	Content	
	Blank	Without mounting bracket	
*1 *2	LB	Axial foot type (both sides) (Custom product)	
	CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 *2	FA	Rod side flange type (Custom product)	
	FB	Head Side Flange Type	

*1: For ø16 to ø32, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.
*2: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: 7 Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●
	35		●	●	●	●	●	●	●	●
	40		●	●	●	●	●	●	●	●
	45		●	●	●	●	●	●	●	●
	50		●	●	●	●	●	●	●	●
	75				●	●	●	●	●	●
	100				●	●	●	●	●	●
Minimum Stroke (mm) *1		1								
Maximum Stroke (mm)		30	50		100					
Intermediate Stroke *2		Every 1 mm								
Minimum Stroke with Switch		10								

*1: Cannot be manufactured for less than 10 mm with switch.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-G2 – ..... – XP5 SSD2-G3 – ..... – XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2 – G2 – ..... – FP1
SSD2 – G3 – ..... – FP1

Switch Single Unit Model No. Notation Method

SW – T2YLH
5 Switch Model No.

Specifications

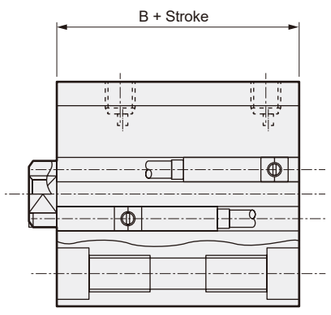
Item	SSD2-G2·G3 / SSD2-G2L·G3L (With Switch)								
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting								
Operating Fluid	Compressed Air								
Max. Operating Pressure MPa	1.0								
Min. Operating Pressure MPa	0.15						0.1		
Proof pressure MPa	1.6								
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)								
Port Size	M5			Rc1/8 *1		Rc1/4		Rc3/8	
Stroke Tolerance mm	$^{+1.0}_{0}$								
Operating Piston Speed mm/s	50 to 500						50 to 300		
Cushion	None								
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								
Allowable absorbed energy J	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

About Intermediate Stroke

● SSD2-G2·G3 Series

Item	Standard Product: Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-G2-32-38 A +2 mm spacer is added to the standard cylinder SSD2-G2-32-40 to make it 38 mm. B + Stroke = 33 + 40 = 73	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø16	62	118	73	118	83	158	94	139	105	150	116	161	-	-	-	-	-	-	-	-	-	-	-	-
ø20	108	163	120	195	133	208	146	221	158	233	171	246	184	259	197	272	210	285	223	298	-	-	-	-
ø25	151	242	166	257	182	273	198	289	214	305	229	320	245	336	261	352	293	384	292	383	-	-	-	-
ø32	230	344	252	366	274	388	296	410	317	431	339	453	361	475	383	497	427	519	426	540	487	648	707	755
ø40	301	444	328	471	354	497	381	524	408	551	434	577	461	604	487	630	540	657	540	683	625	816	890	948
ø50	-	-	513	707	555	749	597	791	639	833	682	876	734	918	766	960	890	1002	850	1044	787	1254	1307	1464
ø63	-	-	733	1012	788	1067	843	1122	898	1177	953	1232	1009	1288	1064	1343	1175	1398	1174	1453	1384	1728	1939	2003
ø80	-	-	1532	1945	1619	2032	1705	2118	1792	2203	1878	2288	1965	2377	2052	2465	2226	2552	2225	2638	2564	3071	3434	3503
ø100	-	-	2212	2779	2326	2893	2439	3006	2553	3120	2667	3234	2781	3348	2894	3461	3121	3575	3122	3689	3622	4259	4757	4829

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	-	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{3}	1.51×10^{2}
ø20	Push	-	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{3}
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Foot (LB)					SSD2-LB-40	SSD2-LB-50	SSD2-LB-63
Flange (FA/FB)					SSD2-FA-40	SSD2-FA-50	SSD2-FA-63
Double Clevis (CB)	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63

Bore Size (mm) / Mounting bracket	ø80	ø100
Foot (LB)	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-80	SSD2-CB-100

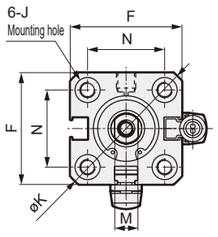
*1: Foot type mounting brackets are 2 pcs/set.
*2: For ø16 to ø32, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Please contact our sales department.

Outline Dimension Drawing

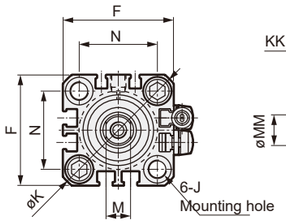
● Degree of protection: NBR Packing
SSD2-G2(L)-16 to 100
● Degree of protection: FKM Packing
SSD2-G3(L)-16 to 100

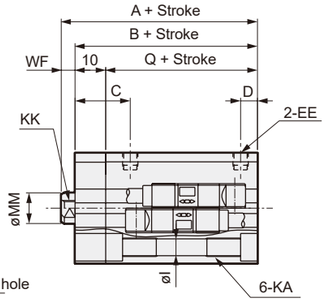
● Rod end male thread part

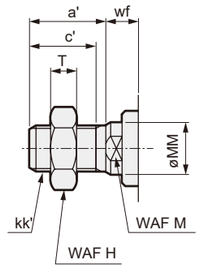
ø16



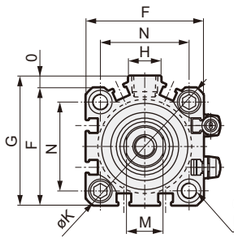
ø20, ø25

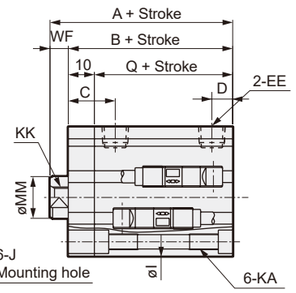




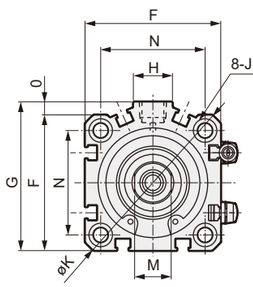


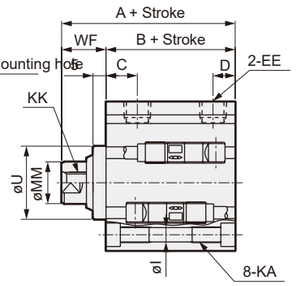
ø32





ø40 to ø100





Code / Bore Size (mm)	Dimension with switch A *1	B *1	Q	Dimension without switch A *1, *2	B *1, *2	Q	Common dimension C	D	EE *3	F	G	H	I	J *4	K	KA	KK
ø16	40.5	32	22	35.5	27	17	15.5	5.5	M5	29	-	-	3.5	6.5 Counterbore depth 3.5 (13.4)	38	M4 depth 7	M4 depth 8
ø20	49	39.5	29.5	39	29.5	19.5	18	5.5	M5	36	-	-	5.5	9 Counterbore depth 5.5 (15.5)	47	M6 depth 11	M5 depth 7
ø25	52.5	42.5	32.5	42.5	32.5	22.5	21	6	M5	40	-	-	5.5	9 Counterbore depth 5.5 (15.5)	51	M6 depth 11	M6 Depth 12
ø32	55	43	33	45 (55)	33 (43)	23 (33)	18	8	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5 (15.5)	60	M6 depth 11	M8 depth 13
ø40	56.5	39.5	-	46.5 (56.5)	29.5 (39.5)	-	12	8.5	Rc1/8	52	57	15	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13
ø50	58.5	40.5	-	48.5 (58.5)	30.5 (40.5)	-	10.5	10.5	Rc1/4	64	71	18	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15
ø63	64	46	-	54 (64)	36 (46)	-	13	11	Rc1/4	77	84	23	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15
ø80	73.5	53.5	-	63.5 (73.5)	43.5 (53.5)	-	16	13	Rc3/8	98	104	31	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21
ø100	85	63	-	75 (85)	53 (63)	-	23	15	Rc3/8	117	123.5	38	10.5	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27

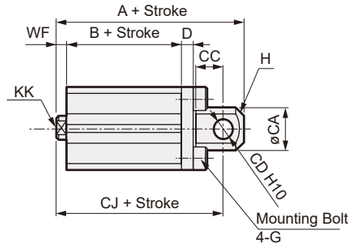
Code / Bore Size (mm)	Common dimension M	MM	N	O	U	WF	Rod end male thread part outline dimension a'	c'	H	kk'	M	MM	T	wf
ø16	6	8	20	-	-	8.5	12	10	10	M6	6	8	3.6	8.5
ø20	8	10	25.5	-	-	9.5	14	12	13	M8	8	10	5	9.5
ø25	10	12	28	-	-	10	17.5	15	17	M10×1.25	10	12	6	10
ø32	14	16	34	4.5	-	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø40	14	16	40	5	28	17	23.5	20.5	22	M14×1.5	14	16	8	15
ø50	17	20	50	7	35	18	28.5	26	27	M18×1.5	17	20	11	15
ø63	17	20	60	7	35	18	28.5	26	27	M18×1.5	17	20	11	15
ø80	22	25	77	6	43	20	35.5	32.5	32	M22×1.5	22	25	13	18
ø100	27	30	94	6.5	59	22	35.5	32.5	41	M26×1.5	27	30	16	18

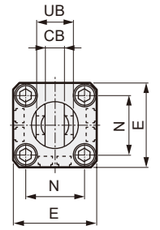
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A, B, Q are values when exceeding 50 strokes.
*3: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*4: Dimension in ( ) for code J is the counterbore dimension of the rod side mounting hole.
*5: Switches cannot be mounted on the piping port surface of Bore Sizes ø20, ø25.
***6: For dimensions with each switch, refer to P. 300 to 309.**
***7: For outline dimension drawings of individual accessories, refer to P. 34.**

Outline Dimension Drawing

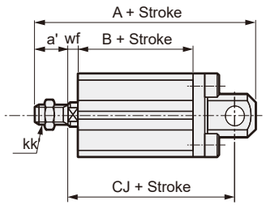
● Double Knuckle Clevis (CB)
SSD2-G2(L)·G3(L)-16 to 100-CB

· ø16 to ø25

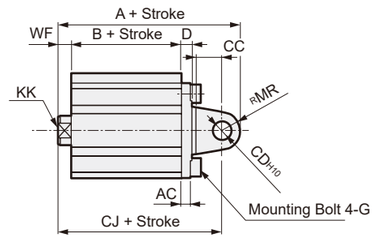


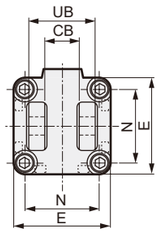


For rod end male thread

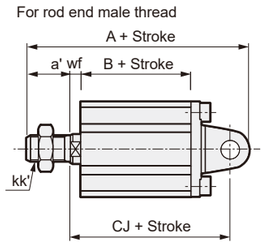


· ø32 to ø100





For rod end male thread



Code / Bore Size (mm)	Common dimension AC	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB
ø16	-	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	M4 depth 8	C2	-	20	12
ø20	-	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	M5 depth 7	C4	-	25.5	16
ø25	-	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	M6 Depth 12	C5	-	28	20
ø32	4.5	-	$18.2^{+0.2}_{0}$	14	10	5	45	M6×16	M8 depth 13	-	10	34	36
ø40	5	-	$18.2^{+0.2}_{0}$	14	10	6	52	M6×16	M8 depth 13	-	10	40	36
ø50	6	-	$22.2^{+0.2}_{0}$	20	14	7	64	M8×20	M10 depth 15	-	14	50	44
ø63	7	-	$22.2^{+0.2}_{0}$	20	14	8	77	M10×25	M10 depth 15	-	14	60	44
ø80	9	-	$28.2^{+0.2}_{0}$	27	18	10	98	M12×40	M16 depth 21	-	18	77	56
ø100	12	-	$32.2^{+0.2}_{0}$	31	22	13	117	M12×40	M20 depth 27	-	22	94	64

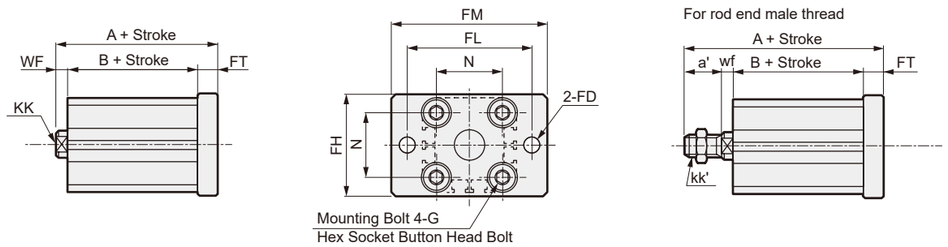
Code / Bore Size (mm)	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1
ø16	8.5	61.5	32	55.5	56.5	27	50.5	12	M6	8.5	73.5	32	55.5	68.5	27	50.5
ø20	9.5	76	39.5	67	66	29.5	57	14	M8	9.5	90	39.5	67	80	29.5	57
ø25	10	82.5	42.5	72.5	72.5	32.5	62.5	17.5	M10×1.25	10	100	42.5	72.5	90	32.5	62.5
ø32	12	85	43	75	75 (85)	33 (43)	65 (75)	23.5	M14×1.5	10	106.5	43	73	96.5 (106.5)	33 (43)	63 (73)
ø40	17	88.5	39.5	78.5	78.5 (88.5)	29.5 (39.5)	68.5 (78.5)	23.5	M14×1.5	15	110	39.5	76.5	100 (110)	29.5 (39.5)	66.5 (76.5)
ø50	18	100.5	40.5	86.5	90.5 (100.5)	30.5 (40.5)	76.5 (86.5)	28.5	M18×1.5	15	126	40.5	83.5	116 (126)	30.5 (40.5)	73.5 (83.5)
ø63	18	108	46	94	98 (108)	36 (46)	84 (94)	28.5	M18×1.5	15	133.5	46	91	123.5 (133.5)	36 (46)	81 (91)
ø80	20	129.5	53.5	111.5	119.5 (129.5)	43.5 (53.5)	101.5 (111.5)	35.5	M22×1.5	18	163	53.5	109.5	153 (163)	43.5 (53.5)	99.5 (109.5)
ø100	22	152	63	130	142 (152)	53 (63)	120 (130)	35.5	M26×1.5	18	183.5	63	126	173.5 (183.5)	53 (63)	116 (126)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

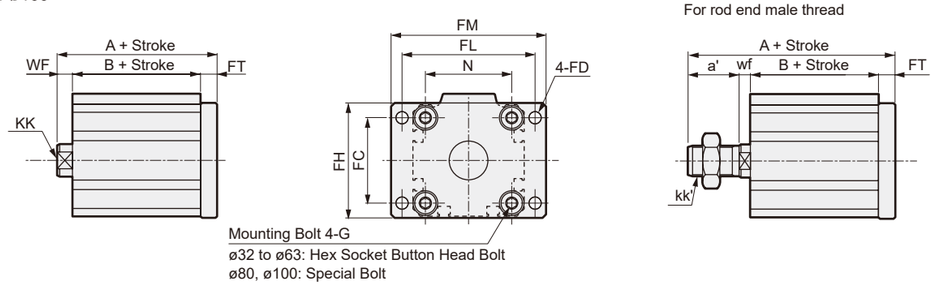
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-G2(L)·G3(L)-16 to 100-FB

· ø16 to ø25



· ø32 to ø100



Code	Common dimension									For female thread					For male thread						
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	N	KK	WF	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	a'	kk'	wf	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1
ø16	-	4.5	30	45	55	5.5	M4×12	20	M4 depth 8	8.5	46	32	41	27	12	M6	8.5	58	32	53	27
ø20	-	6.6	39	48	60	8	M6×16	25.5	M5 depth 7	9.5	57	39.5	47	29.5	14	M8	9.5	71	39.5	61	29.5
ø25	-	6.6	42	52	64	8	M6×16	28	M6 Depth 12	10	60.5	42.5	50.5	32.5	17.5	M10×1.25	10	78	42.5	68	32.5
ø32	34	5.5	48	56	65	8	M6×16	34	M8 depth 13	12	63	43	53 (63)	33 (43)	23.5	M14×1.5	10	84.5	43	74.5 (84.5)	33 (43)
ø40	40	5.5	54	62	72	8	M6×16	40	M8 depth 13	17	64.5	39.5	54.5 (64.5)	29.5 (39.5)	23.5	M14×1.5	15	86	39.5	76 (86)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	M8×20	50	M10 depth 15	18	67.5	40.5	57.5 (67.5)	30.5 (40.5)	28.5	M18×1.5	15	93	40.5	83 (93)	30.5 (40.5)
ø63	60	9	80	92	108	9	M10×25	60	M10 depth 15	18	73	46	63 (73)	36 (46)	28.5	M18×1.5	15	98.5	46	88.5 (98.5)	36 (46)
ø80	77	11	99	116	134	11	M12×40	77	M16 depth 21	20	84.5	53.5	74.5 (84.5)	43.5 (53.5)	35.5	M22×1.5	18	118	53.5	108 (118)	43.5 (53.5)
ø100	94	11	117	136	154	11	M12×40	94	M20 depth 27	22	96	63	86 (96)	53 (63)	35.5	M26×1.5	18	127.5	63	117.5 (127.5)	53 (63)

*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

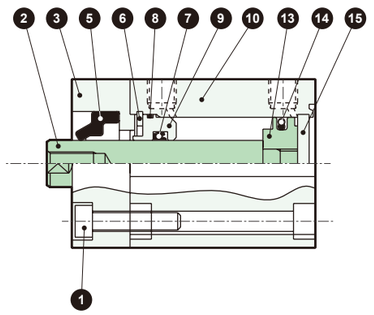
MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

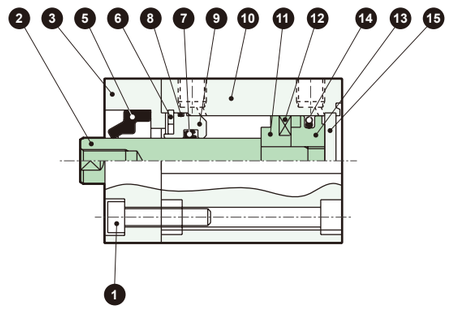
Internal Structure Diagram/Material (Bore size: ø16 to ø50)

● Degree of protection: Packing NBR SSD2-G2/G2L
Packing FKM SSD2-G3·G3L

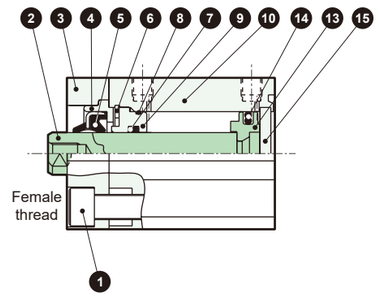
● SSD2-G$^2_3$ -16 (Without Switch)



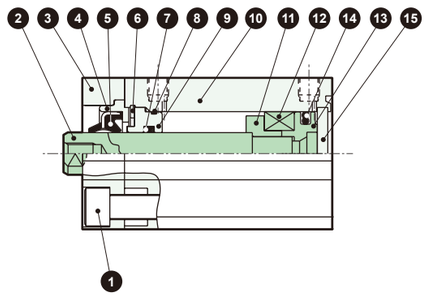
● SSD2-G$^2_3$ L-16 (With Switch)



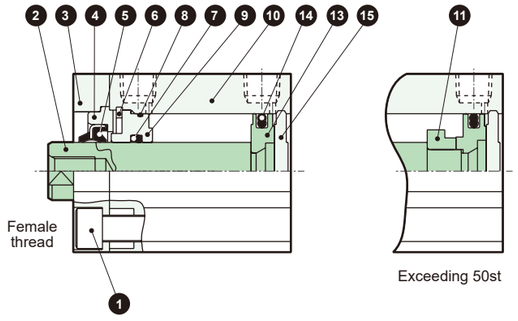
● SSD2-G$^2_3$ -20, 25 (Without Switch)



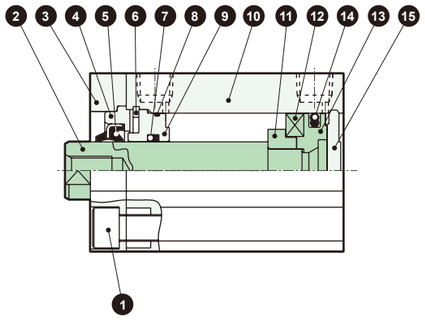
● SSD2-G$^2_3$ L-20, 25 (With Switch)



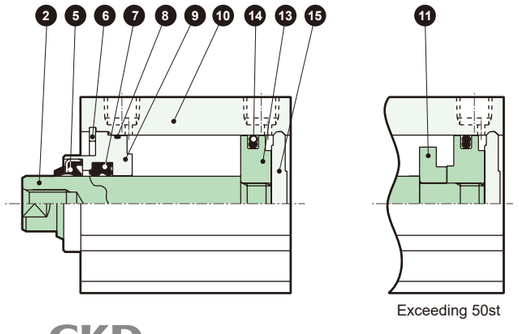
● SSD2-G$^2_3$ -32 (Without Switch)



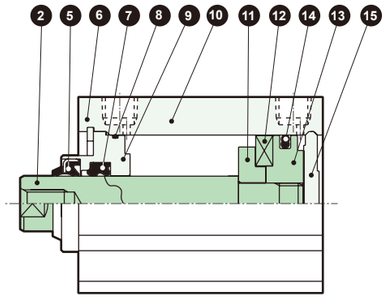
● SSD2-G$^2_3$ L-32 (With Switch)



● SSD2-G$^2_3$ -40, 50 (Without Switch)



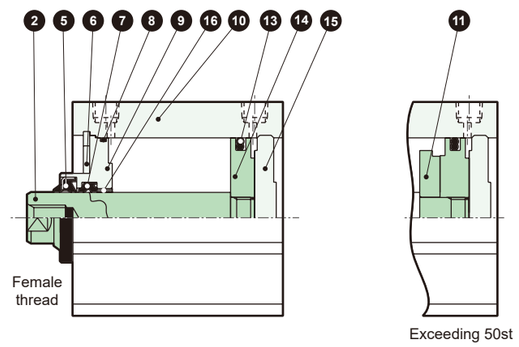
● SSD2-G$^2_3$ L-40, 50 (With Switch)



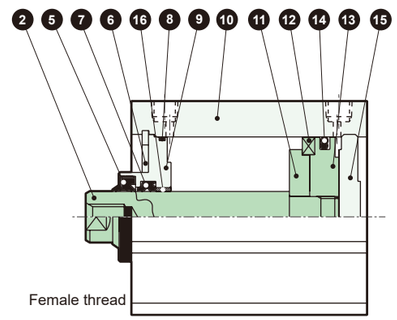
Internal Structure Diagram/Material (Bore size: ø63 to ø100)

● Degree of protection: Packing NBR SSD2-G2/G2L
Packing FKM SSD2-G3·G3L

● SSD2-G$^2_3$ -63 to 100 (Without Switch)



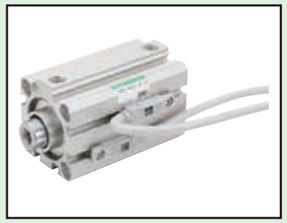
● SSD2-G$^2_3$ L-63, 100 (With Switch)



Part No.	Part Name		Material	Remarks
1	Hexagon Socket Head Cap Screw		Stainless Steel	ø16 to ø32
2	Piston Rod		Stainless Steel	Industrial Hard Chrome Plating
3	Adapter (A)		Aluminum Alloy	ø16 to ø32: Alumite
4	Adapter (B)		Aluminum Alloy	ø16 to ø32: Alumite
5	Scraper	G2	Nitrile Rubber, Steel	
		G3	Fluororubber, Steel	
6	C-type retaining ring		Stainless Steel	
7	Rod Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
8	Rod metal gasket	G2	Nitrile Rubber	
		G3	Fluoro Rubber	

Part No.	Part Name		Material	Remarks
9	Rod Metal		ø16 to ø50: Special aluminum ø63 to ø100: Aluminum alloy	ø16 to ø50: Alumite ø63 to ø100: Chromate
10	Cylinder Body		Aluminum Alloy	Hard Anodized
11	Spacer		Aluminum Alloy	Chromate
12	Magnet		Plastic	
13	Piston		Aluminum Alloy	Chromate
14	Piston Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
15	Cover		ø16 to ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite
16	Bushing		Bearing Alloy	ø63 to ø100

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

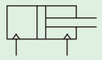


Compact Cylinder
Double Acting, High Load, Cutting Oil Resistant Type

SSD2-KG2/KG3 Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-KG2 – 16 – 30 ——— N – LB – I
❶ ❷ ❸ ❻ ❼ ❽

With Switch
(Built-in magnet for switch)

SSD2-KG2L – 16 – 30 – T2YLH – R – N – LB – I

❶	❷	❸	❹	❺	❻	❼	❽
Model No.	Bore Size	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

❶ Model No.

Code	Content
SSD2-KG2	High Load + Cutting Oil Resistant Scraper + Nitrile Rubber Packing
SSD2-KG3	High Load + Cutting Oil Resistant Scraper + Fluororubber Packing
SSD2-KG2L	High Load + Cutting Oil Resistant Scraper + Nitrile Rubber Packing with Switch
SSD2-KG3L	High Load + Cutting Oil Resistant Scraper + Fluororubber Packing with Switch

❷ Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❸ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø16	1 to 30	Every 1 mm
ø20, ø25	1 to 50	
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

❹ Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Solid State	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
	For 2-Color Cutting Oil	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3YLH□	T3YLV□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*3: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T2WLH
3 m T2WLH 3
5 m T2WLH 5

❺ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❼ Mounting Type

Mounting brackets are included to the product for shipment.

	Code	Content	
	Blank	Without mounting bracket	
*1	LB	Axial foot type (both sides) (Custom product)	
	CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1	FA	Rod side flange type (Custom product)	
	FB	Head Side Flange Type	

*1: For ø16 to ø25, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.
*2: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❽ Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	

*1: ❻Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 16	20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●
	35		●	●	●	●	●	●	●	●
	40		●	●	●	●	●	●	●	●
	45		●	●	●	●	●	●	●	●
	50		●	●	●	●	●	●	●	●
	75				●	●	●	●	●	●
	100				●	●	●	●	●	●
Minimum Stroke (mm) *1		1								
Maximum Stroke (mm)		30	50	100						
Intermediate Stroke *2		Every 1 mm								
Minimum Stroke with Switch		10								

*1: Cannot be manufactured for less than 10 mm with switch.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-KG2 – ..... – XP5
SSD2-KG3 – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T2YLH
❹ Switch Model No.

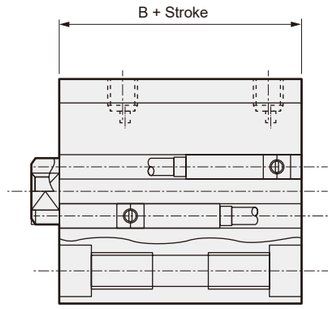
Specifications

Item	SSD2-KG2/KG3 SSD2-KG2L·KG3L (With Switch)								
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type								
Operating Fluid	Compressed Air								
Max. Operating Pressure MPa	1.0								
Min. Operating Pressure MPa	0.15						0.1		
Proof pressure MPa	1.6								
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)								
Port Size	M5			Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$								
Operating Piston Speed mm/s	50 to 500						50 to 300		
Cushion	Rubber Cushion								
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								
Allowable absorbed energy J	0.09	0.16	0.16	0.4	0.63	0.98	1.56	2.51	3.92

About Intermediate Stroke

● SSD2-KG2·KG3 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-KG2-32-41 A +4 mm spacer is added to the standard cylinder SSD2-KG2-32-45 to make it 41 mm. B + Stroke = 43 + 45 = 88	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø16	69	114	79	124	90	135	101	146	112	157	123	168	-	-	-	-	-	-	-	-	-	-	-	-
ø20	68	163	101	176	114	189	126	201	139	214	151	226	164	239	176	251	189	264	201	276	-	-	-	-
ø25	118	209	134	225	150	241	166	257	181	272	198	289	214	305	230	321	246	337	262	353	-	-	-	-
ø32	211	325	232	346	253	367	275	389	297	411	319	433	341	455	362	476	384	498	405	519	513	627	620	734
ø40	289	432	316	459	343	486	369	512	395	538	422	565	449	592	475	618	502	645	528	671	661	804	793	936
ø50	-	-	509	703	551	745	594	788	637	831	678	872	720	914	762	956	804	998	846	1040	1056	1250	1266	1460
ø63	-	-	727	1006	782	1061	837	1116	893	1172	948	1227	1003	1282	1058	1337	1113	1392	1168	1447	1443	1722	1718	1997
ø80	-	-	1274	1687	1361	1774	1447	1860	1534	1947	1621	2034	1708	2121	1794	2207	1881	2294	1967	2380	2400	2813	2832	3245
ø100	-	-	1887	2454	2001	2568	2115	2682	2229	2796	2342	2909	2456	3023	2570	3137	2684	3251	2798	3365	3368	3935	3938	4505

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	-	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	-	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

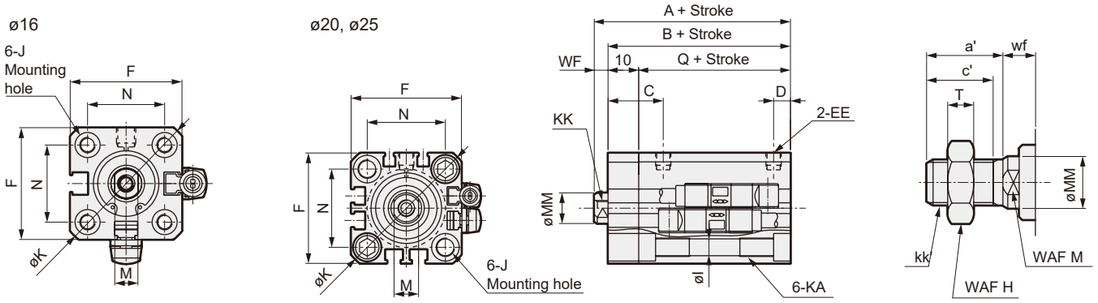
Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)					SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)					SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

*1: Foot type mounting brackets are 2 pcs/set.
*2: For ø16 to ø25, due to structural reasons, foot brackets (LB) and flange brackets (FA) cannot be retrofitted to the rod side. Please contact our sales department.

Outline Dimension Drawing

● Degree of protection: NBR Packing
SSD2-KG2(L)-16 to 100
● Degree of protection: FKM Packing
SSD2-KG3(L)-16 to 100

● Rod tip male thread part



Code / Bore Size (mm)	Dimension with switch A *1	B *1	Q *1	Dimension without switch A *1, *2	B *1, *2	Q *1, *2	Common dimension C	D	EE	F	G	H	I	J *3	K
ø16	45.5	37	27	40.5	32	22	15.5	5.5	M5	29	-	-	3.5	6.5 Counterbore depth 3.5 (13.4)	38
ø20	54	44.5	34.5	44	34.5	24.5	18	5.5	M5	36	-	-	5.5	9 Counterbore depth 5.5 (15.5)	47
ø25	57.5	47.5	37.5	47.5	37.5	27.5	21	6	M5	40	-	-	5.5	9 Counterbore depth 5.5 (15.5)	51
ø32	65	53	43	55 (65)	43 (53)	33 (43)	18	8	Rc1/8	45	49.5	12.5	5.5	9 Counterbore depth 5.5 (15.5)	60
ø40	66.5	49.5	-	56.5 (66.5)	39.5 (49.5)	-	12	8.5	Rc1/8	52	57	15	5.5	ø9 Counterbore depth 5.5	69
ø50	68.5	50.5	-	58.5 (68.5)	40.5 (50.5)	-	10.5	10.5	Rc1/4	64	71	18	6.9	ø11 Counterbore depth 6.5	86
ø63	74	56	-	64 (74)	46 (56)	-	13	11	Rc1/4	77	84	23	8.7	ø14 Counterbore depth 9	103
ø80	83.5	63.5	-	73.5 (83.5)	53.5 (63.5)	-	16	13	Rc3/8	98	104	31	10.5	ø17.5 Counterbore depth 11	132
ø100	95	73	-	85 (95)	63 (73)	-	23	15	Rc3/8	117	123.5	38	10.5	ø17.5 Counterbore depth 11	156

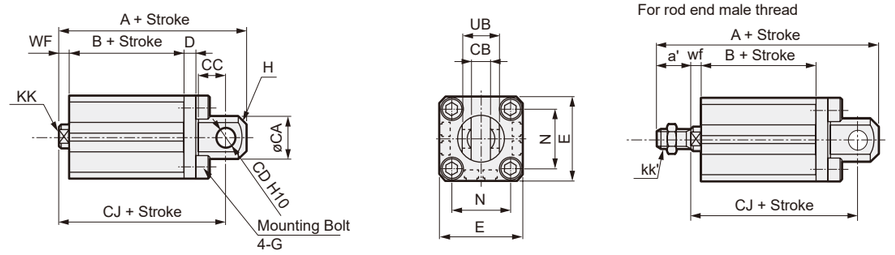
Code / Bore Size (mm)	Common dimension KA	KK	M	MM	N	O	U	WF	Rod end male thread part outline dimension a'	c'	H	kk'	M	MM	T	wf
ø16	M4 depth 7	M4 depth 8	6	8	20	-	-	8.5	12	10	10	M6	6	8	3.6	8.5
ø20	M6 depth 11	M5 depth 7	8	10	25.5	-	-	9.5	14	12	13	M8	8	10	5	9.5
ø25	M6 depth 11	M6 Depth 12	10	12	28	-	-	10	17.5	15	17	M10×1.25	10	12	6	10
ø32	M6 depth 11	M8 depth 13	14	16	34	4.5	-	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø40	M6 depth 11	M8 depth 13	14	16	40	5	28	17	23.5	20.5	22	M14×1.5	14	16	8	15
ø50	M8 depth 13	M10 depth 15	17	20	50	7	35	18	28.5	26	27	M18×1.5	17	20	11	15
ø63	M10 depth 25	M10 depth 15	17	20	60	7	35	18	28.5	26	27	M18×1.5	17	20	11	15
ø80	M12 depth 28	M16 depth 21	22	25	77	6	43	20	35.5	32.5	32	M22×1.5	22	25	13	18
ø100	M12 depth 28	M20 depth 27	27	30	94	6.5	59	22	35.5	32.5	41	M26×1.5	27	30	16	18

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A, B, Q are values when exceeding 50 strokes.
*3: Dimension in ( ) for code J is the counterbore dimension of the rod side mounting hole.
*4: Switches cannot be mounted on the piping port surface of Bore Sizes ø20, ø25.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

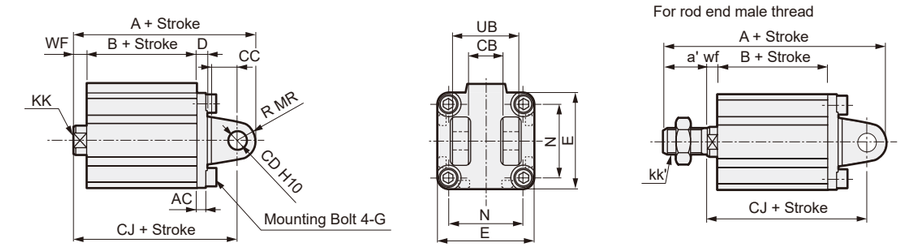
Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-KG2(L)/KG3(L)-16 to 100-CB

· ø16 to ø25



· ø32 to ø100



Code / Bore Size (mm)	Common dimension AC	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB
ø16	-	15	$6.6^{+0.3}_{0}$	8	5	5	29	M4×12	M4 depth 8	C2	-	20	12
ø20	-	20	$8.2^{+0.2}_{0}$	12	8	5	36	M6×16	M5 depth 7	C4	-	25.5	16
ø25	-	24	$10.2^{+0.2}_{0}$	14	10	5	40	M6×16	M6 Depth 12	C5	-	28	20
ø32	4.5	-	$18.2^{+0.2}_{0}$	14	10	5	45	M6×16	M8 depth 13	-	10	34	36
ø40	5	-	$18.2^{+0.2}_{0}$	14	10	6	52	M6×16	M8 depth 13	-	10	40	36
ø50	6	-	$22.2^{+0.2}_{0}$	20	14	7	64	M8×20	M10 depth 15	-	14	50	44
ø63	7	-	$22.2^{+0.2}_{0}$	20	14	8	77	M10×25	M10 depth 15	-	14	60	44
ø80	9	-	$28.2^{+0.2}_{0}$	27	18	10	98	M12×40	M16 depth 21	-	18	77	56
ø100	12	-	$32.2^{+0.2}_{0}$	31	22	13	117	M12×40	M20 depth 27	-	22	94	64

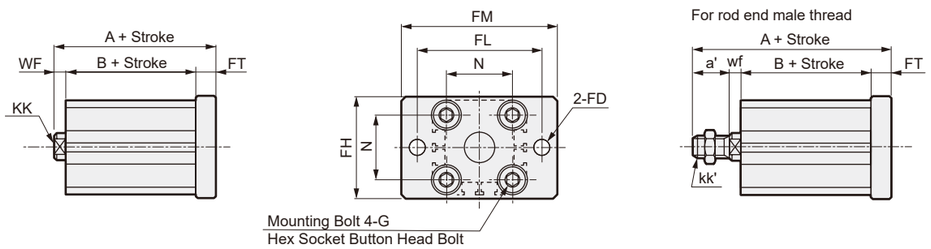
Code / Bore Size (mm)	For female thread WF	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1	For male thread a'	kk'	wf	Dimension with switch A	B	CJ	Dimension without switch A *1	B *1	CJ *1
ø16	8.5	66.5	37	60.5	61.5	32	55.5	12	M6	8.5	78.5	37	60.5	73.5	32	55.5
ø20	9.5	81	44.5	72	71	34.5	62	14	M8	9.5	95	44.5	72	85	34.5	62
ø25	10	87.5	47.5	77.5	77.5	37.5	67.5	17.5	M10×1.25	10	105	47.5	77.5	95	37.5	67.5
ø32	12	95	53	85	85 (95)	43 (53)	75 (85)	23.5	M14×1.5	10	116.5	53	83	106.5 (116.5)	43 (53)	73 (83)
ø40	17	98.5	49.5	88.5	88.5 (98.5)	39.5 (49.5)	78.5 (88.5)	23.5	M14×1.5	15	120	49.5	86.5	110 (120)	39.5 (49.5)	76.5 (86.5)
ø50	18	110.5	50.5	96.5	100.5 (110.5)	40.5 (50.5)	86.5 (96.5)	28.5	M18×1.5	15	136	50.5	93.5	126 (136)	40.5 (50.5)	83.5 (93.5)
ø63	18	118	56	104	108 (118)	46 (56)	94 (104)	28.5	M18×1.5	15	143.5	56	101	133.5 (143.5)	46 (56)	91 (101)
ø80	20	139.5	63.5	121.5	129.5 (139.5)	53.5 (63.5)	111.5 (121.5)	35.5	M22×1.5	18	173	63.5	119.5	163 (173)	53.5 (63.5)	109.5 (119.5)
ø100	22	162	73	140	152 (162)	63 (73)	10 (20)	35.5	M26×1.5	18	193.5	73	136	183.5 (193.5)	63 (73)	126 (136)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

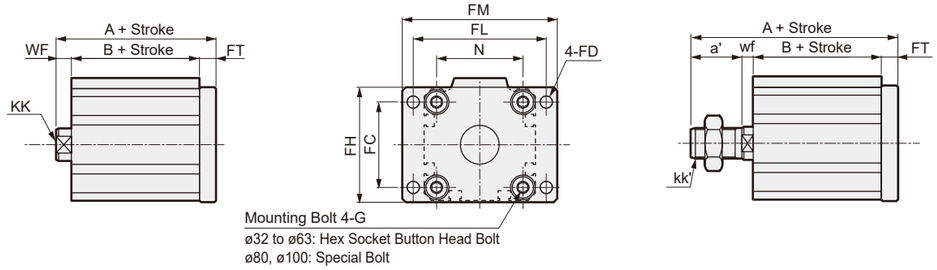
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-KG2(L)/KG3(L)-16 to 100-FB

· ø16 to ø25



· ø32 to ø100



Code	Common dimension									For female thread					For male thread							
											Dimension with switch		Dimension without switch					Dimension with switch		Dimension without switch	
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	N	KK	WF	A	B	A *1	B *1	a'	kk'	wf	A	B	A *1	B *1
ø16	-	4.5	30	45	55	5.5	M4×12	20	M4 depth 8	8.5	51	37	46	32	12	M6	8.5	63	37	58	32
ø20	-	6.6	39	48	60	8	M6×16	25.5	M5 depth 7	9.5	62	44.5	52	34.5	14	M8	9.5	76	44.5	66	34.5
ø25	-	6.6	42	52	64	8	M6×16	28	M6 Depth 12	10	65.5	47.5	55.5	37.5	17.5	M10×1.25	10	83	47.5	73	37.5
ø32	34	5.5	48	56	65	8	M6×16	34	M8 depth 13	12	73	53	63 (73)	43 (53)	23.5	M14×1.5	10	94.5	53	84.5 (94.5)	43 (53)
ø40	40	5.5	54	62	72	8	M6×16	40	M8 depth 13	17	74.5	49.5	64.5 (74.5)	39.5 (49.5)	23.5	M14×1.5	15	96	49.5	86 (96)	39.5 (49.5)
ø50	50	6.6	67	76	89	9	M8×20	50	M10 depth 15	18	77.5	50.5	67.5 (77.5)	40.5 (50.5)	28.5	M18×1.5	15	103	50.5	93 (103)	40.5 (50.5)
ø63	60	9	80	92	108	9	M10×25	60	M10 depth 15	18	83	56	73 (83)	46 (56)	28.5	M18×1.5	15	108.5	56	98.5 (108.5)	46 (56)
ø80	77	11	99	116	134	11	M12×40	77	M16 depth 21	20	94.5	63.5	84.5 (94.5)	53.5 (63.5)	35.5	M22×1.5	18	128	63.5	118 (128)	53.5 (63.5)
ø100	94	11	117	136	154	11	M12×40	94	M20 depth 27	22	106	73	96 (106)	63 (73)	35.5	M26×1.5	18	137.5	73	127.5 (137.5)	63 (73)

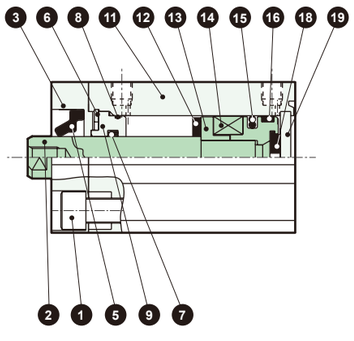
*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

MEMO

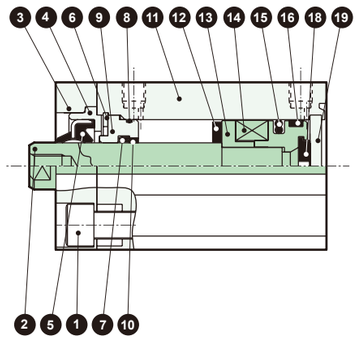
Internal Structure Diagram/Material

- Degree of protection: Packing NBR SSD2-KG2/KG2L
- Degree of protection: Packing FKM SSD2-KG3/KG3L

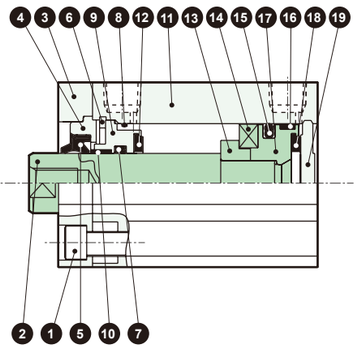
● SSD2-KG$^{2}_{3}$ L-16 (With Switch)



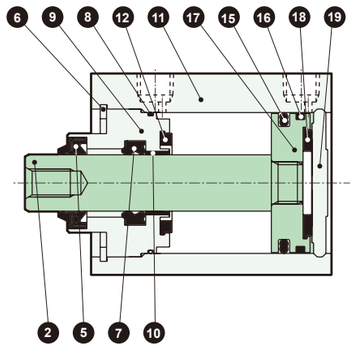
● SSD2-KG$^{2}_{3}$ L-20, 25 (With Switch)



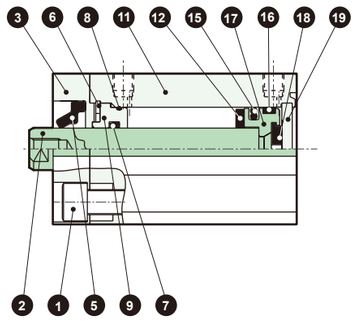
● SSD2-KG$^{2}_{3}$ L-32 to 50 (With Switch)



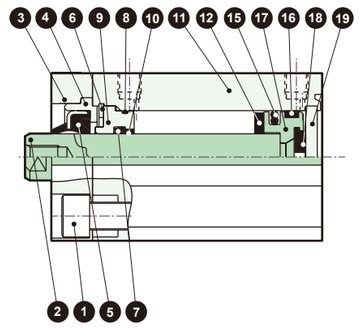
● SSD2-KG$^{2}_{3}$ L-63 to 100 (With Switch)



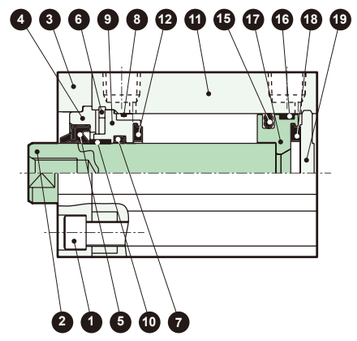
● SSD2-KG$^{2}_{3}$ -16 (Without Switch)



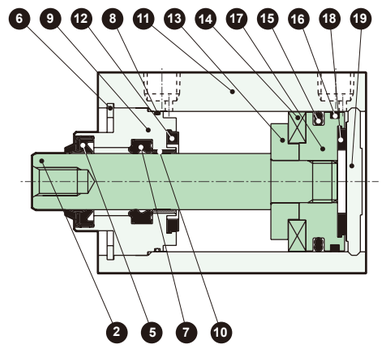
● SSD2-KG$^{2}_{3}$ -20, 25 (Without Switch)



● SSD2-KG$^{2}_{3}$ -32 to 50 (Without Switch)

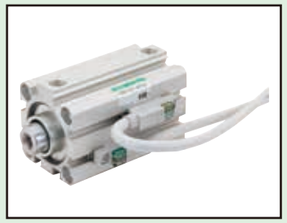


● SSD2-KG$^{2}_{3}$ -63 to 100 (Without Switch)



Part No.	Part Name		Material	Remarks
1	Hexagon Socket Head Cap Screw		Stainless Steel	ø16 to ø32
2	Piston Rod		Stainless Steel	Industrial Hard Chrome Plating
3	Adapter (A)		Aluminum Alloy	ø16 to ø32
4	Adapter (B)		Aluminum Alloy	ø16 to ø32
5	Scraper	G2	Nitrile Rubber, Steel	
		G3	Fluororubber, Steel	
6	C-type retaining ring (for hole)		Stainless Steel	
7	Rod Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
8	Rod metal gasket	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
9	Rod Metal		Aluminum Alloy	Alumite
10	Bushing		Bearing Alloy	ø20 to ø100
11	Cylinder Body		Aluminum Alloy	Hard Anodized
12	Cushion rubber (R)		Urethane Rubber	
13	Spacer		Aluminum Alloy	ø16 to 32: Chromate
14	Magnet		Plastic	
15	Piston Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
16	Wear Ring		Polyacetal	
17	Piston		Aluminum Alloy	Chromate
18	Cushion rubber (H)		Urethane Rubber	
19	Cover		ø16 to ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



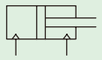
Compact Cylinder
Double acting, Single rod, Coil scraper type

SSD2-G1 Series

Compact Cylinder
Double acting, Single rod, Spatter adhesion prevention

SSD2-G4 Series

● Bore Size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-G4 - 32 - 10 ——— N - LB - I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD2-G4L - 32 - 10 - T2YD - R - N - LB - I
1 2 3 4 5 6 7 8

1 Model No. | 2 Bore Size | 3 Stroke | 4 Switch Model No. | 5 Number of Switches | 6 Option | 7 Mounting type | 8 Accessories

1 Model No.

Code	Content
SSD2-G1	Double acting, Single rod, Coil scraper type
SSD2-G1L	Double acting, Single rod, Coil scraper type with switch
SSD2-G4	Double acting, Single rod, Spatter adhesion prevention type
SSD2-G4L	Double acting, Single rod, Spatter adhesion prevention type with switch

2 Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø25	1 to 50	Every 1 mm
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

4 Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Contact	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
Solid State			—		—		T2YDT□	–	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD 3
5 m T2YD 3

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
LB	Axial foot type (both sides) (Custom product)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
FA	Rod side flange type (Custom product)	
FB	Head Side Flange Type	

8 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 25	32	40	50	63	80	100
Standard Stroke	5	●	●	●				
	10	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
	75		●	●	●	●	●	●
	100		●	●	●	●	●	●
Minimum Stroke (mm) *1		1						
Maximum Stroke (mm)		50	100					
Intermediate Stroke *2		Every 1 mm						
Minimum Stroke with Switch		10						

*1: Cannot be manufactured for less than 10 mm with switch.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluororubber packing type (G1)
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-G1 - ..... - XP5
SSD2-G4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YD□
4
Switch Model No.

Specifications

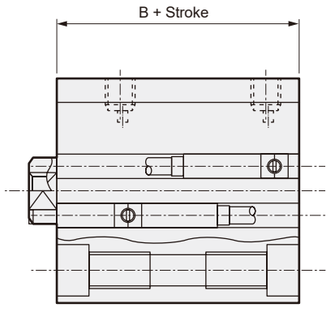
Item	SSD2-G1·G4 SSD2-G1L·G4L (With Switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.15				0.1		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)						
Port Size	M5	Rc1/8 *1		Rc1/4		Rc3/8	
Stroke Tolerance mm	$^{+1.0}_{0}$						
Operating Piston Speed mm/s	50 to 500				50 to 300		
Cushion	None						
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)						
Allowable absorbed energy J	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

About Intermediate Stroke

● SSD2-G1·G4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-G1-32-38 A +2 mm spacer is added to the standard cylinder SSD2-G1-32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63	



Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	131	222	146	237	162	253	178	269	194	285	209	300	225	600	241	332	257	166	272	363	-	-	-	-
ø32	184	298	206	320	228	342	250	364	271	385	293	407	315	429	337	451	359	473	380	494	553	602	661	709
ø40	265	408	292	435	318	461	345	488	372	515	398	541	425	568	451	594	478	621	504	647	722	780	854	912
ø50	-	-	460	654	502	696	544	738	586	780	629	823	671	865	713	907	755	949	797	991	1144	1201	1354	1411
ø63	-	-	658	937	713	992	768	1047	823	1102	878	1157	934	1213	989	1268	1044	1323	1099	1378	1589	1653	1864	1928
ø80	-	-	1180	1593	1267	1680	1353	1765	1440	1853	1526	1939	1613	2026	1700	2113	1787	2200	1873	2286	2650	2719	3082	3151
ø100	-	-	1768	2335	1882	2449	1995	2562	2109	2676	2223	2790	2337	2904	2450	3017	2564	3131	2678	3245	3743	3815	4313	4385

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

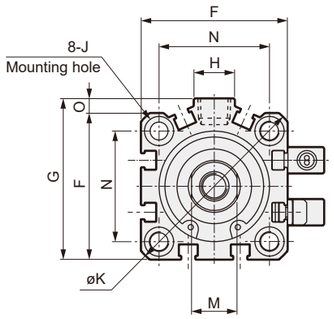
Bore Size (mm) / Mounting bracket	ø25	ø32	ø40	ø50	ø63	ø80
Flange (FB)	SSD2-FA-25	SSD2-G1-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Double Clevis (CB)	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

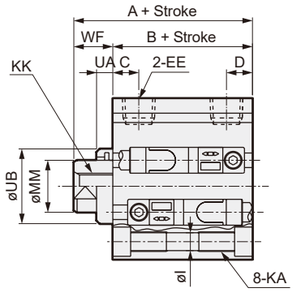
Bore Size (mm) / Mounting bracket	ø100
Flange (FB)	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

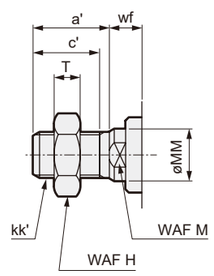
Outline Dimension Drawing

● SSD2-G1(L)/G4(L)-25 to 100





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1 G1	A *1 G4	B *1	Dimension without switch A *1, *3 G1	A *1, *3 G4	B *3, *5	Common dimension C *5	D *5	EE *4	F	G	H	I
ø25	47.5	47.5	42.5	37.5	37.5	32.5	11	6	M5	40	-	-	5.5
ø32	45	50	33	35 (45)	40 (50)	23 (33)	8 (10)	8 (5.5)	Rc1/8	45	49.5	12.5	5.5
ø40	51.5	56.5	39.5	41.5 (51.5)	46.5 (56.5)	29.5 (39.5)	12 (11.5)	8.5 (8)	Rc1/8	52	57	15	5.5
ø50	53.5	58.5	40.5	43.5 (53.5)	48.5 (58.5)	30.5 (40.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	59	64	46	49 (59)	54 (64)	36 (46)	13	11	Rc1/4	77	84	23	8.7
ø80	68.5	73.5	53.5	58.5 (68.5)	63.5 (73.5)	43.5 (53.5)	16	13	Rc3/8	98	104	31	10.5
ø100	80	85	63	70 (80)	75 (85)	53 (63)	23	15	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	Common dimension J	K	KA	KK	M	MM	N	O	UA G1	UA G4	UB	WF G1	WF G4
ø25	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	-	-	-	-	5	5
ø32	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	5	10	23 h9	12	17
ø40	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	5	10	28 h9	12	17
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	5	10	35 h9	13	18
ø63	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	5	10	35 h9	13	18
ø80	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	5	10	43 h9	15	20
ø100	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	5	10	59 h9	17	22

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Switches cannot be mounted on the piping port surface of Bore Sizes ø20, ø25.
*3: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*4: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
*5: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
***6: For dimensions with each switch, refer to P. 300 to 309.**
***7: For outline dimension drawings of individual accessories, refer to P. 34.**

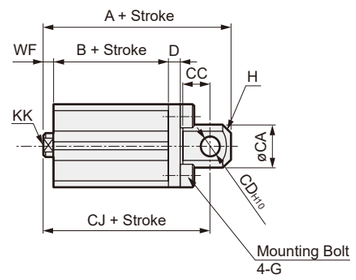
● Rod end male thread part

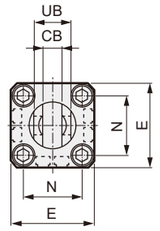
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf G1	wf G4
ø25	17.5	15	17	M10×1.25	10	12	6	5	5
ø32	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø40	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø50	28.5	26	27	M18×1.5	17	20	11	10	15
ø63	28.5	26	27	M18×1.5	17	20	11	10	15
ø80	35.5	32.5	32	M22×1.5	22	25	13	13	18
ø100	35.5	32.5	41	M26×1.5	27	30	16	13	18

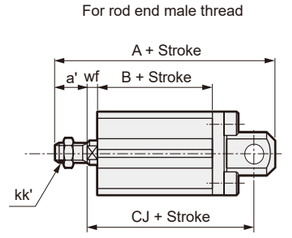
Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-G1(L)/G4(L)-25 to 100-CB

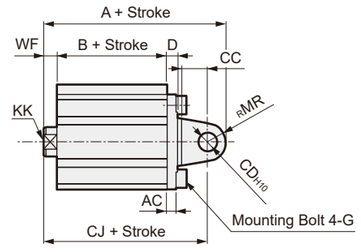
· ø25

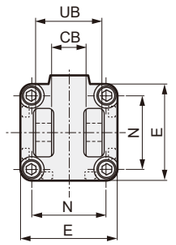


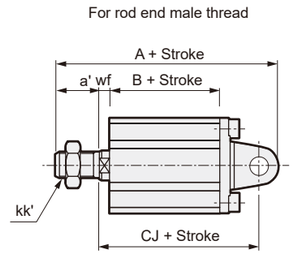




· ø32 to ø100







Code / Bore Size (mm)	Common dimension AC	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB	For female thread WF G1	WF G4	Dimension with switch A G1	A G4	B *1	CJ G1	CJ G4	Dimension without switch A *1 G1	A *1 G4	B *1	CJ *1 G1	CJ *1 G4
ø25	-	24	10.2	14	10	5	40	M6×16	M6 Depth 12	C2	-	28	20	5	5	77.5	77.5	42.5	67.5	67.5	67.5	67.5	32.5	57.5	57.5
ø32	4.5	-	18.2	14	10	5	45	M6×16	M8 depth 13	C4	10	34	36	12	17	75	80	33	65	70	65 (75)	70 (80)	23 (33)	55 (65)	60 (70)
ø40	5	-	18.2	14	10	6	52	M6×16	M8 depth 13	C5	10	40	36	12	17	83.5	88.5	39.5	73.5	78.5	73.5 (83.5)	78.5 (88.5)	29.5 (39.5)	63.5 (73.5)	68.5 (78.5)
ø50	6	-	22.2	20	14	7	64	M8×20	M10 depth 15	-	14	50	44	13	18	95.5	100.5	40.5	81.5	86.5	85.5 (95.5)	90.5 (100.5)	30.5 (40.5)	71.5 (81.5)	76.5 (86.5)
ø63	7	-	22.2	20	14	8	77	M10×25	M10 depth 15	-	14	60	44	13	18	103	108	46	89	94	93 (103)	98 (108)	36 (46)	79 (89)	84 (94)
ø80	9	-	28.2	27	18	10	98	M12×40	M16 depth 21	-	18	77	56	15	20	124.5	129.5	53.5	106.5	111.5	114.5 (124.5)	119.5 (129.5)	43.5 (53.5)	96.5 (106.5)	101.5 (111.5)
ø100	12	-	32.2	31	22	13	117	M12×40	M20 depth 27	-	22	94	64	17	22	147	152	63	125	130	137 (147)	142 (152)	53 (63)	115 (125)	120 (130)

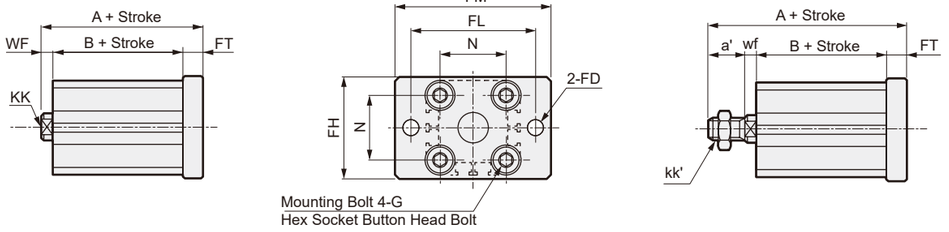
Code / Bore Size (mm)	For male thread a'	kk'	wf G1	wf G4	Dimension with switch Dimension A G1	A G4	B	CJ G1	CJ G4	Dimension without switch Dimension A *1 G1	A *1 G4	B *1	CJ *1 G1	CJ *1 G4
ø25	17.5	M10×1.25	5	5	95	95	42.5	67.5	67.5	85	85	32.5	57.5	57.5
ø32	23.5	M14×1.5	10	15	96.5	101.5	33	63	68	86.5 (96.5)	91.5 (101.5)	23 (33)	53 (63)	58 (68)
ø40	23.5	M14×1.5	10	15	105	110	39.5	71.5	76.5	95 (105)	100 (110)	29.5 (39.5)	61.5 (71.5)	66.5 (76.5)
ø50	28.5	M18×1.5	10	15	121	126	40.5	78.5	83.5	111 (121)	116 (126)	30.5 (40.5)	68.5 (78.5)	73.5 (83.5)
ø63	28.5	M18×1.5	10	15	128.5	133.5	46	86	91	118.5 (128.5)	123.5 (133.5)	36 (46)	76 (86)	81 (91)
ø80	35.5	M22×1.5	13	18	158	163	53.5	104.5	109.5	148 (158)	153 (163)	43.5 (53.5)	94.5 (104.5)	99.5 (109.5)
ø100	35.5	M26×1.5	13	18	178.5	183.5	63	121	126	168.5 (178.5)	173.5 (183.5)	53 (63)	111 (121)	116 (126)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

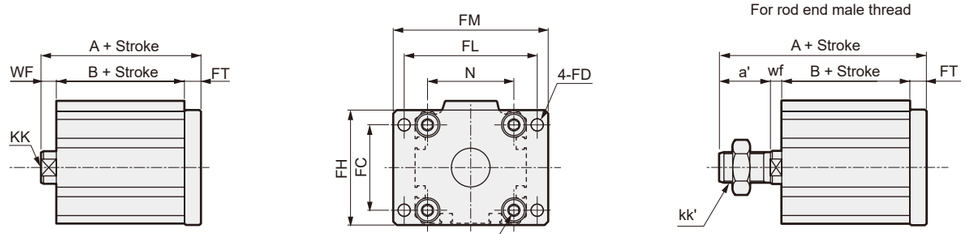
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-G1(L)/G4(L)-25 to 100-FB

· ø25



· ø32 to ø100



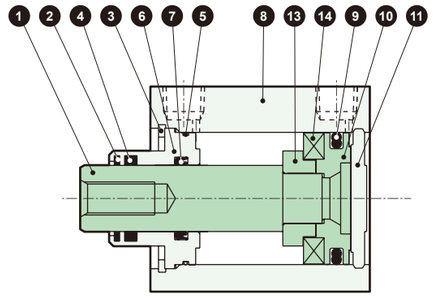
Code	Common dimension									For female thread							
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF		Dimension with switch A		B	Dimension without switch A *1		B *1
										G1	G4	G1	G4		G1	G4	
ø25	-	6.6	42	52	64	8	M6×16	M6 Depth 12	28	5	5	55.5	55.5	42.5	45.5	45.5	32.5
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	12	17	53	58	33	43 (53)	48 (58)	23 (33)
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	12	17	59.5	64.5	39.5	49.5 (59.5)	54.5 (64.5)	29.5 (39.5)
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	13	18	62.5	67.5	40.5	52.5 (62.5)	57.5 (67.5)	30.5 (40.5)
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	13	18	68	73	46	58 (68)	63 (73)	36 (46)
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	15	20	79.5	84.5	53.5	69.5 (79.5)	74.5 (84.5)	43.5 (53.5)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	17	22	91	96	63	81 (91)	86 (96)	53 (63)

Code	For male thread									
Bore Size (mm)	a'	kk'	wf		Dimension with switch A		B	Dimension without switch A *1		B *1
			G1	G4	G1	G4		G1	G4	
ø25	17.5	M10×1.25	5	5	73	73	42.5	63	63	32.5
ø32	23.5	M14×1.5	10	15	74.5	79.5	33	64.5 (74.5)	69.5 (79.5)	23 (33)
ø40	23.5	M14×1.5	10	15	81	86	39.5	71 (81)	76 (86)	29.5 (39.5)
ø50	28.5	M18×1.5	10	15	88	93	40.5	78 (88)	83 (93)	30.5 (40.5)
ø63	28.5	M18×1.5	10	15	93.5	98.5	46	83.5 (93.5)	88.5 (98.5)	36 (46)
ø80	35.5	M22×1.5	13	18	113	118	53.5	103 (113)	108 (118)	43.5 (53.5)
ø100	35.5	M26×1.5	13	18	122.5	127.5	63	112.5 (122.5)	117.5 (127.5)	53 (63)

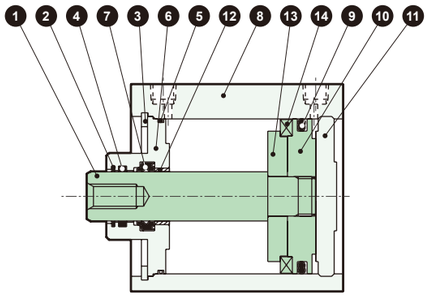
*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

Internal Structure Diagram/Material

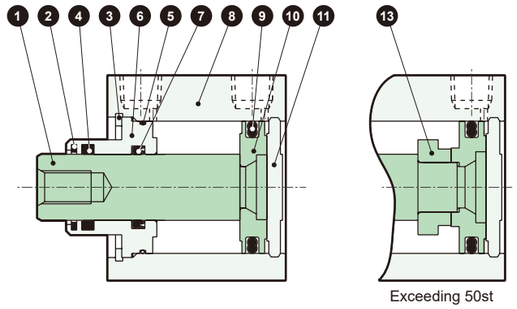
● SSD2-G1L-25 to 50 (double acting/coil scraper/with switch)
● SSD2-G4L-25 to 50 (double acting/anti-spatter adherence/with switch)



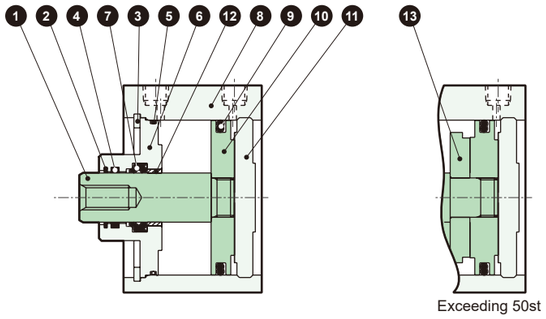
● SSD2-G1L-63 to 100 (double acting/coil scraper/with switch)
● SSD2-G4L-63 to 100 (double acting/anti-spatter adherence/with switch)



● SSD2-G1-25 to 50 (Double Acting, Coil Scraper Type)
● SSD2-G4-25 to 50 (Double Acting, Spatter Adhesion Prevention Type)



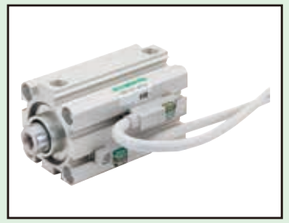
● SSD2-G1-63 to 100 (Double Acting, Coil Scraper Type)
● SSD2-G4-63 to 100 (Double Acting, Spatter Adhesion Prevention Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	ø25: Stainless steel ø32 to ø100: Steel	Industrial Hard Chrome Plating
2	Coil scraper	Copper Alloy	
3	C-type retaining ring	Steel	Zinc phosphate
4	Lube keeper	Special rubber	G4 only
5	Rod metal gasket	Nitrile Rubber	
6	Rod Metal	Aluminum Alloy	ø25 to ø50: Alumite ø63 to ø100: Chromate
7	Rod Packing	Nitrile Rubber	

Part No.	Part Name	Material	Remarks
8	Cylinder Body	Aluminum Alloy	Hard Anodized
9	Piston Packing	Nitrile Rubber	
10	Piston	Aluminum Alloy	Chromate
11	Cover	ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite
12	Bushing	Bearing Alloy	
13	Spacer	Aluminum Alloy	Chromate
14	Magnet	Plastic	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Single Rod, High Load, Coil Scraper Type

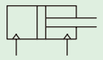
SSD2-KG1 Series

Compact Cylinder
Double Acting, Single Rod, High Load, Spatter Adhesion Prevention

SSD2-KG4 Series

● Bore Size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-KG4 – 32 – 10 – N – LB – I
① ② ③ ⑥ ⑦ ⑧

With Switch
(Built-in magnet for switch)

SSD2-KG4L – 32 – 10 – T2YD – R – N – LB – I

①	②	③	④	⑤	⑥	⑦	⑧
Model No.	Bore Size	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

①Model No.

Code	Content
SSD2-KG1	Double Acting, Single Rod, High Load, Coil Scraper Type
SSD2-KG1L	Double Acting, Single Rod, High Load, Coil Scraper Type with Switch
SSD2-KG4	Double Acting, Single Rod, High Load, Spatter Adhesion Prevention Type
SSD2-KG4L	Double Acting, Single Rod, High Load, Spatter Adhesion Prevention Type with Switch

②Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

③Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø25	1 to 50	Every 1 mm
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

④Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Contact	2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
Solid State			—		—		T2YDT□	–	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD 3
5 m T2YD 3

⑤Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑥Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

⑦Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
LB	Axial foot type (both sides) (Custom product)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
FA	Rod side flange type (Custom product)	
FB	Head Side Flange Type	

⑧Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 25	32	40	50	63	80	100
Standard Stroke	5	●	●	●				
	10	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
	75		●	●	●	●	●	●
	100		●	●	●	●	●	●
Minimum Stroke (mm) *1		1						
Maximum Stroke (mm)		50	100					
Intermediate Stroke *2		Every 1 mm						
Minimum Stroke with Switch		10						

*1: Cannot be manufactured for less than 10 mm with switch.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluororubber packing type (KG1)
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-KG1 – ..... – XP5

SSD2-KG4 – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T2YD
④
Switch Model No.

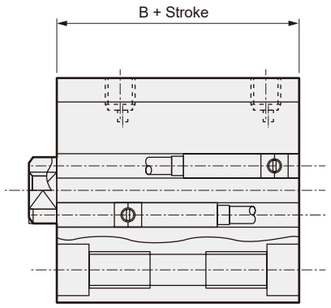
Specifications

Item	SSD2-KG1/KG4 SSD2-KG1L/KG4L (With Switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.15				0.1		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)						
Port Size	M5	Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$						
Operating Piston Speed mm/s	50 to 500				50 to 300		
Cushion	Rubber Cushion						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.16	0.40	0.63	0.98	1.56	2.51	3.92

About Intermediate Stroke

● SSD2-KG1·KG4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-KG1-32-38 A +2 mm spacer is added to the standard cylinder SSD2-KG1-32-40 to make it 38 mm. B + Stroke = 43 + 40 = 83	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	146	237	162	253	178	269	194	285	209	300	226	317	242	333	258	349	274	365	290	381	-	-	-	-
ø32	228	342	249	363	270	384	292	406	314	428	336	450	358	472	379	493	401	515	422	536	530	644	637	751
ø40	318	461	345	488	372	515	398	541	424	567	451	594	478	621	504	647	531	674	557	700	690	833	822	965
ø50	-	-	549	743	591	785	634	828	677	871	718	912	760	954	802	996	844	1038	886	1080	1096	1290	1306	1500
ø63	-	-	782	1061	837	1116	892	1171	948	1227	1003	1282	1058	1337	1113	1392	1168	1447	1223	1502	1498	1777	1773	2052
ø80	-	-	1382	1795	1469	1882	1555	1968	1642	2055	1729	2142	1816	2229	1902	2315	1989	2402	2075	2488	2508	2921	2940	3353
ø100	-	-	2029	2596	2143	2710	2257	2824	2371	2938	2484	3051	2598	3165	2712	3279	2826	3393	2940	3507	3510	4077	4080	4647

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

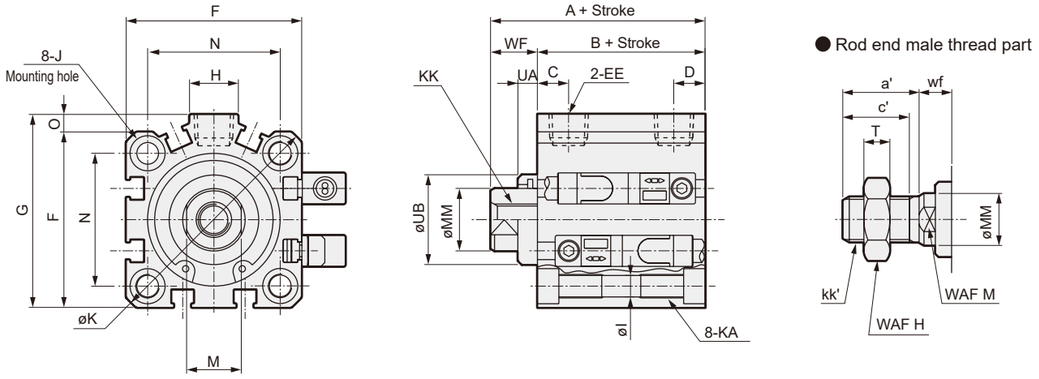
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Flange (FB)	SSD2-FA-25	SSD2-G1-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

● SSD2-KG1(L)·KG4(L)-25 to 100



● Rod end male thread part

Code / Bore Size (mm)	Dimension with switch A *1 G1	A *1 G4	B *1	Dimension without switch A *1, *3 G1	A *1, *3 G4	B *1, *3	Common dimension C	D	EE *4	F	G	H	I
ø25	52.5	52.5	47.5	42.5	42.5	37.5	11	6	M5	40	-	-	5.5
ø32	55	60	43	45 (55)	50 (60)	33 (43)	8	8	Rc1/8	45	49.5	12.5	5.5
ø40	61.5	66.5	49.5	51.5 (61.5)	56.5 (66.5)	39.5 (49.5)	12	8.5	Rc1/8	52	57	15	5.5
ø50	63.5	68.5	50.5	53.5 (63.5)	58.5 (68.5)	40.5 (50.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	69	74	56	59 (69)	64 (74)	46 (56)	13	11	Rc1/4	77	84	23	8.7
ø80	78.5	83.5	63.5	68.5 (78.5)	73.5 (83.5)	53.5 (63.5)	16	13	Rc3/8	98	104	31	10.5
ø100	90	95	73	80 (90)	85 (95)	63 (73)	23	15	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	Common dimension J	K	KA	KK	M	MM	N	O	UA G1	UA G4	UB	WF G1	WF G4
ø25	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	-	-	-	-	5	5
ø32	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	5	10	23 h9	12	17
ø40	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	5	10	28 h9	12	17
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	5	10	35 h9	13	18
ø63	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	5	10	35 h9	13	18
ø80	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	5	10	43 h9	15	20
ø100	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	5	10	59 h9	17	22

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Switches cannot be mounted on the piping port surface of Bore Sizes ø20, ø25.
*3: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*4: For ø32 without switch, 5 strokes, the port size will be M5.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

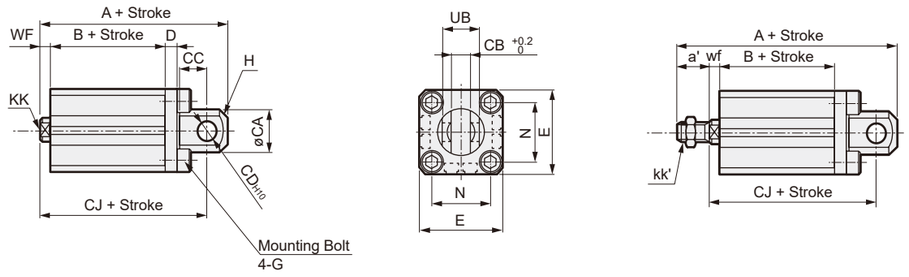
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf G1	wf G4
ø25	17.5	15	17	M10×1.25	10	12	6	5	5
ø32	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø40	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø50	28.5	26	27	M18×1.5	17	20	11	10	15
ø63	28.5	26	27	M18×1.5	17	20	11	10	15
ø80	35.5	32.5	32	M22×1.5	22	25	13	13	18
ø100	35.5	32.5	41	M26×1.5	27	30	16	13	18

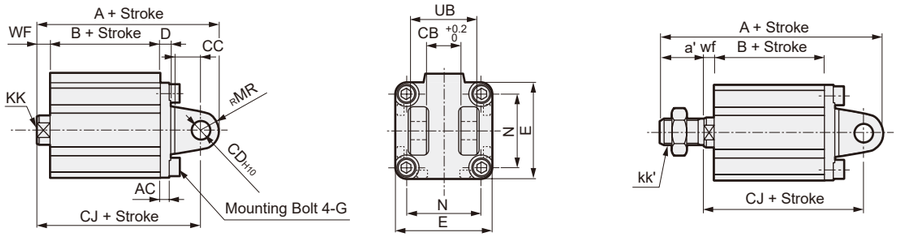
Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-KG1(L)·KG4(L)-25 to 100-CB

· ø25



· ø32 to ø100



Code / Bore Size (mm)	Common dimension □	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB	For female thread WF G1	WF G4	Dimension with switch A G1	A G4	B	CJ G1	CJ G4	Dimension without switch A *1 G1	A *1 G4	B *1	CJ *1 G1	CJ *1 G4
ø25	-	24	10.2	14	10	5	40	M6×16	M6 Depth 12	C5	-	28	20	5	5	82.5	82.5	47.5	72.5	72.5	72.5	72.5	37.5	62.5	62.5
ø32	4.5	-	18.2	14	10	5	45	M6×16	M8 depth 13	-	10	34	36	12	17	85	90	43	75	80	75 (85)	80 (90)	33 (43)	65 (75)	70 (80)
ø40	5	-	18.2	14	10	6	52	M6×16	M8 depth 13	-	10	40	36	12	17	93.5	98.5	49.5	83.5	88.5	83.5 (93.5)	88.5 (98.5)	39.5 (49.5)	73.5 (83.5)	78.5 (88.5)
ø50	6	-	22.2	20	14	7	64	M8×20	M10 depth 15	-	14	50	44	13	18	105.5	110.5	50.5	91.5	96.5	95.5 (105.5)	100.5 (110.5)	40.5 (50.5)	81.5 (91.5)	86.5 (96.5)
ø63	7	-	22.2	20	14	8	77	M10×25	M10 depth 15	-	14	60	44	13	18	113	118	56	99	104	103 (113)	108 (118)	46 (56)	89 (99)	94 (104)
ø80	9	-	28.2	27	18	10	98	M12×40	M16 depth 21	-	18	77	56	15	20	134.5	139.5	63.5	116.5	121.5	124.5 (134.5)	129.5 (139.5)	53.5 (63.5)	106.5 (116.5)	111.5 (121.5)
ø100	12	-	32.2	31	22	13	117	M12×40	M20 depth 27	-	22	94	64	17	22	157	162	73	135	140	147 (157)	152 (162)	63 (73)	125 (135)	130 (140)

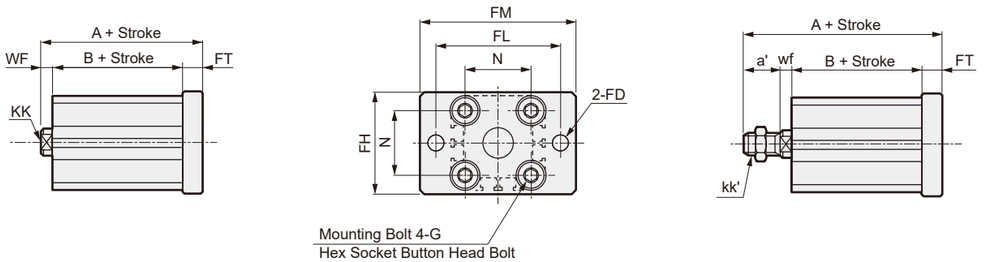
Code / Bore Size (mm)	For male thread a'	kk'	wf G1	wf G4	Dimension with switch A G1	A G4	B	CJ G1	CJ G4	Dimension without switch A *1 G1	A *1 G4	B *1	CJ *1 G1	CJ *1 G4
ø25	17.5	M10×1.25	5	5	100	100	47.5	72.5	72.5	90	90	37.5	62.5	62.5
ø32	23.5	M14×1.5	10	15	106.5	111.5	43	73	78	96.5 (106.5)	101.5 (111.5)	33 (43)	63 (73)	68 (78)
ø40	23.5	M14×1.5	10	15	115	120	49.5	81.5	86.5	105 (115)	110 (120)	39.5 (49.5)	71.5 (81.5)	76.5 (86.5)
ø50	28.5	M18×1.5	10	15	131	136	50.5	88.5	93.5	121 (131)	126 (136)	40.5 (50.5)	78.5 (88.5)	83.5 (93.5)
ø63	28.5	M18×1.5	10	15	138.5	143.5	56	96	101	128.5 (138.5)	133.5 (143.5)	46 (56)	86 (96)	91 (101)
ø80	35.5	M22×1.5	13	18	168	173	63.5	114.5	119.5	158 (168)	163 (173)	53.5 (63.5)	104.5 (114.5)	109.5 (119.5)
ø100	35.5	M26×1.5	13	18	188.5	193.5	73	131	136	178.5 (188.5)	183.5 (193.5)	63 (73)	121 (131)	126 (136)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

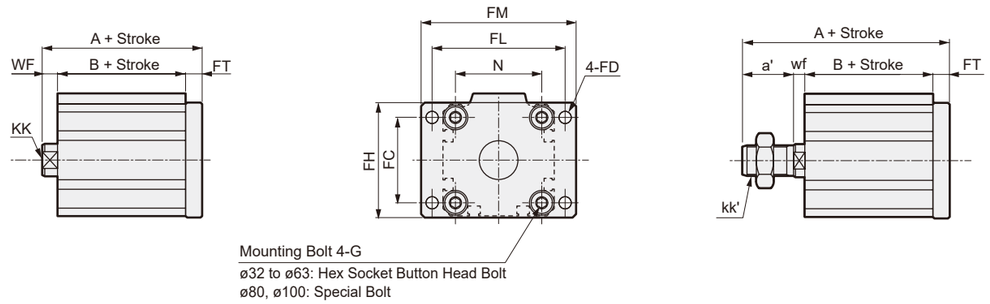
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-KG1(L)·KG4(L)-20 to 100-FB

· ø25



· ø32 to ø100



Code	Common dimension									For female thread							
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF		Dimension with switch A		B	Dimension without switch A *1		B *1
										G1	G4	G1	G4		G1	G4	
ø25	-	6.6	42	52	64	8	M6×16	M6 Depth 12	28	5	5	60.5	60.5	47.5	50.5	50.5	37.5
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34	12	17	63	68	43	53 (63)	58 (68)	33 (43)
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	12	17	69.5	74.5	49.5	59.5 (69.5)	64.5 (74.5)	39.5 (49.5)
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	13	18	72.5	77.5	50.5	62.5 (72.5)	67.5 (77.5)	40.5 (50.5)
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	13	18	78	83	56	68 (78)	73 (83)	46 (56)
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	15	20	89.5	94.5	63.5	79.5 (89.5)	84.5 (94.5)	53.5 (63.5)
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	17	22	101	106	73	91 (101)	96 (106)	63 (73)

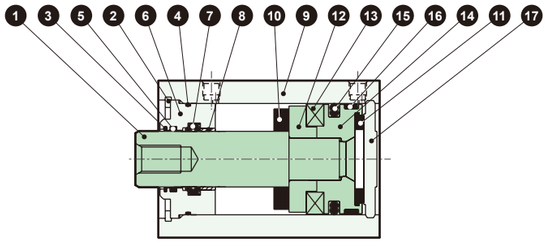
Code	For male thread									
Bore Size (mm)	a'	kk'	wf		Dimension with switch A		B	Dimension without switch A *1		B *1
			G1	G4	G1	G4		G1	G4	
ø25	17.5	M10×1.25	5	5	78	78	47.5	68	68	37.5
ø32	23.5	M14×1.5	10	15	84.5	89.5	43	74.5 (84.5)	79.5 (89.5)	33 (43)
ø40	23.5	M14×1.5	10	15	91	96	49.5	81 (91)	86 (96)	39.5 (49.5)
ø50	28.5	M18×1.5	10	15	98	103	50.5	88 (98)	93 (103)	40.5 (50.5)
ø63	28.5	M18×1.5	10	15	103.5	108.5	56	93.5 (103.5)	98.5 (108.5)	46 (56)
ø80	35.5	M22×1.5	13	18	123	128	63.5	113 (123)	118 (128)	53.5 (63.5)
ø100	35.5	M26×1.5	13	18	132.5	137.5	73	122.5 (132.5)	128.5 (138.5)	63 (73)

*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

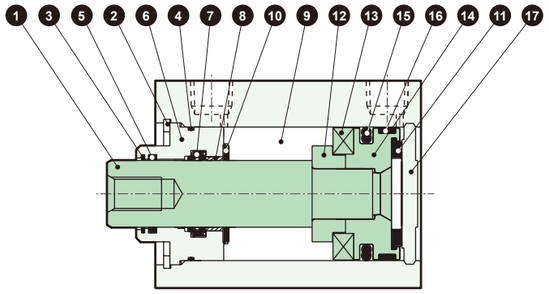
MEMO

Internal Structure Diagram/Material

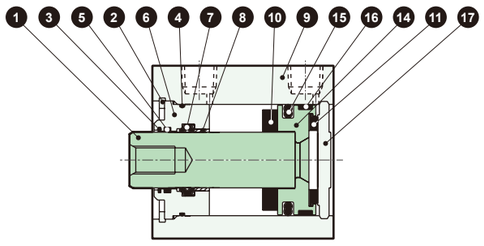
- SSD2-KG1L-25 (double acting/high load/coil scraper/with switch)
- SSD2-KG4L-25 (double acting/high load/anti-spatter adherence/ with switch)



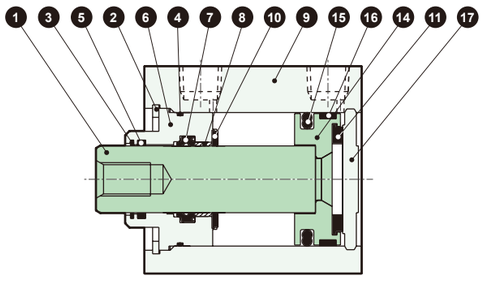
- SSD2-KG1L-32 to 50 (double acting/high load/coil scraper/with switch)
- SSD2-KG4L-32 to 50 (double acting/high load/anti-spatter adherence/with switch)



- SSD2-KG1-25 (Double Acting, High Load Type, Coil Scraper Type)
- SSD2-KG4-25 (Double Acting, High Load Type, Spatter Adhesion Prevention Type)



- SSD2-KG1-32 to 50 (Double Acting, High Load Type, Coil Scraper Type)
- SSD2-KG4-32 to 50 (Double Acting, High Load Type, Spatter Adhesion Prevention Type)



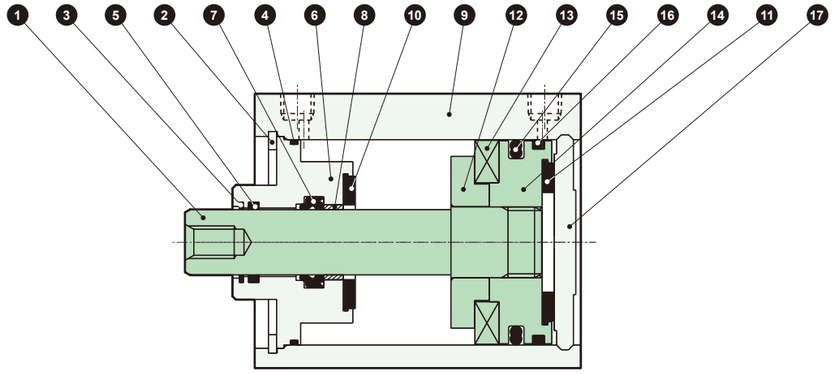
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø25: Stainless steel ø32 to 50: Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Coil scraper	Copper Alloy	
4	Rod metal gasket	Nitrile Rubber	
5	Lube keeper	Special rubber	G4 only
6	Rod Metal	Aluminum Alloy	Alumite
7	Rod Packing	Nitrile Rubber	
8	Bushing	Bearing Alloy	
9	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
10	Cushion rubber R	Urethane Rubber	
11	Cushion rubber H	Urethane Rubber	
12	Spacer	Aluminum Alloy	ø25, ø32: Chromate
13	Magnet	Plastic	
14	Piston	Aluminum Alloy	Chromate
15	Piston Packing	Nitrile Rubber	
16	Wear Ring	Polyacetal	
17	Cover	ø25: Stainless steel ø32 to 50: Aluminum alloy	ø32 to ø50: Alumite

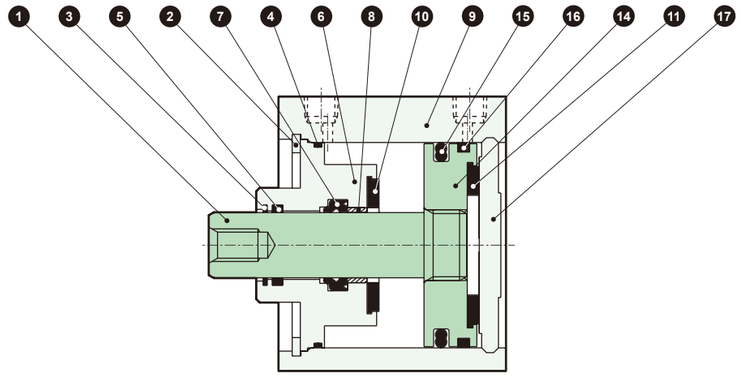
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

- SSD2-KG1L-63 to 100 (Double Acting, High Load Type, Coil Scraper Type with Switch)
- SSD2-KG4L-63 to 100 (Double Acting, High Load Type, Spatter Adhesion Prevention Type with Switch)



- SSD2-KG1-63 to 100 (Double Acting, High Load Type, Coil Scraper Type)
- SSD2-KG4-63 to 100 (Double Acting, High Load Type, Spatter Adhesion Prevention Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Coil scraper	Copper Alloy	
4	Rod metal gasket	Nitrile Rubber	
5	Lube keeper	Special rubber	G4 only
6	Rod Metal	Aluminum Alloy	Chromate
7	Rod Packing	Nitrile Rubber	
8	Bushing	Bearing Alloy	
9	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
10	Cushion rubber R	Urethane Rubber	
11	Cushion rubber H	Urethane Rubber	
12	Spacer	Aluminum Alloy	Chromate
13	Magnet	Plastic	
14	Piston	Aluminum Alloy	Chromate
15	Piston Packing	Nitrile Rubber	
16	Wear Ring	Polyacetal	
17	Cover	Aluminum Alloy	Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Double Rod, Coil Scraper Type

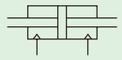
SSD2-DG1 Series

Compact Cylinder
Double Acting, Double Rod, Spatter Adhesion Prevention Type

SSD2-DG4 Series

● Bore Size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD2-DG4 – 32 – 10 ——— N – LB – I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD2-DG4L – 32 – 10 – T2YD – R – N – LB – I

1	2	3	4	5	6	7	8
Model No.	Bore Size	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

1 Model No.

Code	Content
SSD2-DG1	Double Acting, Double Rod, Coil Scraper Type
SSD2-DG1L	Double Acting, Double Rod, Coil Scraper Type with Switch
SSD2-DG4	Double Acting, Double Rod, Spatter Adhesion Prevention Type
SSD2-DG4L	Double Acting, Double Rod, Spatter Adhesion Prevention Type with Switch

2 Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø25	5 to 50	Every 5 mm
ø32 to ø40	5 to 100	
ø50 to ø100	10 to 100	

Note: Refer to Appendix 1 on the following page for details.

4 Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State Contact	2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
			—		—		T2YDT□	–	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD 3
5 m T2YD 3

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
LB	Axial foot type (both sides) (Custom product)	
FA	Rod side flange type (Custom product)	

8 Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: 6 Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore						
		25	32	40	50	63	80	100
Standard Stroke	5	●	●	●				
	10	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
	75		●	●	●	●	●	●
	100		●	●	●	●	●	●
Minimum Stroke (mm) *1		1						
Maximum Stroke (mm)		50	100					
Intermediate Stroke *2 *3		–	Every 5 mm					
Minimum Stroke with Switch		10						

*1: Cannot be manufactured for less than 10 mm with switch.
*2: Intermediate stroke is possible only when exceeding 50 strokes.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluororubber packing type (DG1)
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-DG1 – ..... – XP5

SSD2-DG4 – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T2YD
4
Switch Model No.

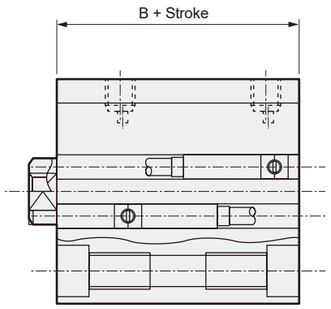
Specifications

Item	SSD2-DG1·DG4 SSD2-DG1L·DG4L (With Switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.2				0.15		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)						
Port Size	Rc1/8			Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$						
Operating Piston Speed mm/s	50 to 500					50 to 300	
Cushion	None						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.021	0.025	0.092	0.1	0.12	0.27	0.56

About Intermediate Stroke

● SSD2-DG1·DG4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-DG1-32-38 A +2 mm spacer is added to the standard cylinder SSD2-DG1-32-40 to make it 38 mm. B + Stroke = 30.5 + 40 = 70.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	234	325	249	340	265	356	281	372	297	388	313	403	329	419	344	435	360	461	375	486	-	-	-	-
ø32	308	423	354	468	399	514	446	560	490	605	537	651	584	696	631	741	678	786	725	831	960	1056	1195	1281
ø40	446	589	473	616	499	642	526	669	553	696	579	732	606	754	632	775	659	802	685	828	818	961	950	1093
ø50	-	-	746	940	796	989	846	1041	896	1089	946	1139	996	1189	1046	1239	1098	1291	1149	1343	1407	1603	1664	1863
ø63	-	-	1203	1567	1278	1642	1353	1717	1428	1792	1503	1867	1579	1943	1654	2018	1729	2093	1804	2168	2179	2543	2554	2918
ø80	-	-	2112	2042	2229	2420	2345	2798	2462	2915	2578	3031	2695	3153	2812	3275	2929	3392	3045	3508	3628	4091	4210	4673
ø100	-	-	3153	3775	3322	3924	3490	4072	3659	4256	3828	4440	3997	4604	4165	4767	4334	4931	4503	5095	5348	5915	6193	6735

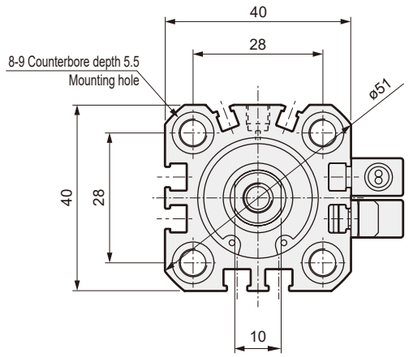
Theoretical Thrust Table

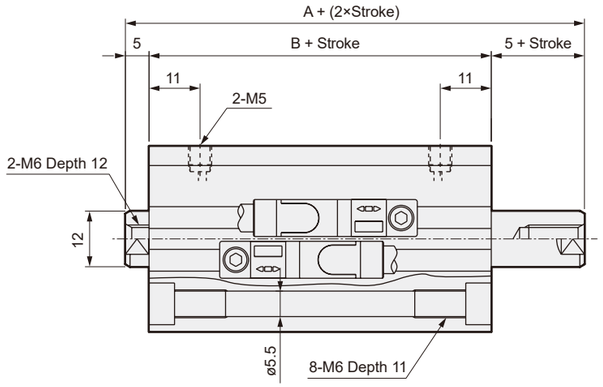
(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push/Pull	-	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push/Pull	-	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push/Pull	-	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push/Pull	-	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push/Pull	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push/Pull	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push/Pull	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

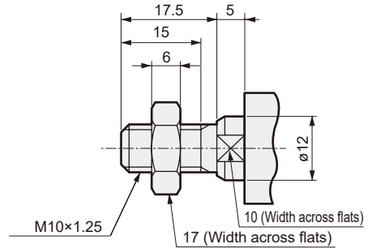
Outline Dimension Drawing (Bore size: ø25)

● SSD2-DG1(L)/DG4(L)-25





● Rod end male thread part

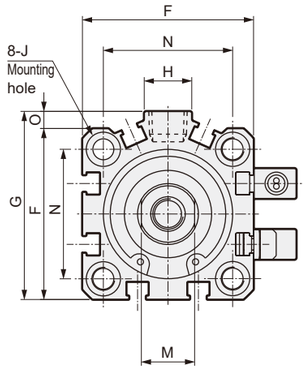


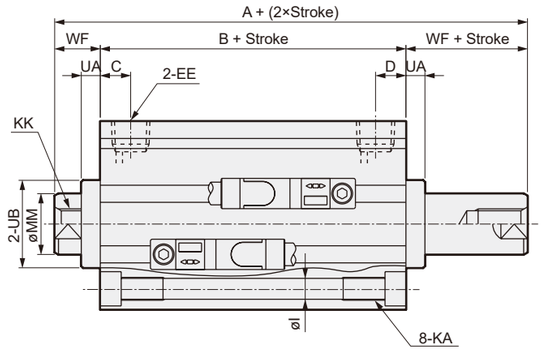
Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1
ø25	69	59	59	49

*1: When calculating A + (2×Stroke), B + Stroke, 5 + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right.
(Example) For an intermediate stroke of 17 mm, enter the standard stroke of 20 mm for calculation.
*2: Switches cannot be mounted on the piping port surface.
*3: The position of the width across flats for spanner engagement on the left and right is not fixed.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

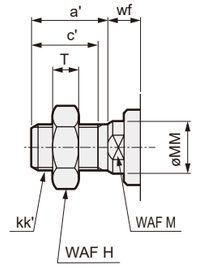
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-DG1(L)/DG4(L)-32 to 100





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1 G1	Dimension with switch A *1 G4	Dimension with switch B *1	Dimension without switch A *1, *2 G1	Dimension without switch A *1, *2 G4	Dimension without switch B *1, *2	Common dimension C	D	EE	F	G	H	I
ø32	64.5	74.5	40.5	54.5 (64.5)	64.5 (74.5)	30.5 (40.5)	8	8	Rc1/8	45	49.5	12.5	5.5
ø40	74	84	50	64 (74)	74 (84)	40 (50)	12	12	Rc1/8	52	57	15	5.5
ø50	76.5	86.5	50.5	66.5 (76.5)	76.5 (86.5)	40.5 (50.5)	10.5	10.5	Rc1/4	64	71	18	6.9
ø63	78	88	52	68 (78)	78 (88)	42 (52)	13	13	Rc1/4	77	84	23	8.7
ø80	91	101	61	81 (91)	91 (101)	51 (61)	16	16	Rc3/8	98	104	31	10.5
ø100	104.5	114.5	70.5	94.5 (104.5)	104.5 (114.5)	60.5 (70.5)	23	23	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	J	KA	KK	M	MM	N	O	UA G1	UA G4	UB	WF G1	WF G4
ø32	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	14	16	34	4.5	5	10	23 h9	12	17
ø40	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	14	16	40	5	5	10	28 h9	12	17
ø50	11 Counterbore Depth 6.5	M8 depth 13	M10 depth 15	17	20	50	7	5	10	35 h9	13	18
ø63	14 Counterbore depth 9	M10 depth 25	M10 depth 15	17	20	60	7	5	10	35 h9	13	18
ø80	17 Counterbore depth 11	M12 depth 28	M16 depth 21	22	25	77	6	5	10	43 h9	15	20
ø100	17.5 Counterbore depth 11	M12 depth 28	M20 depth 27	27	30	94	6.5	5	10	59 h9	17	22

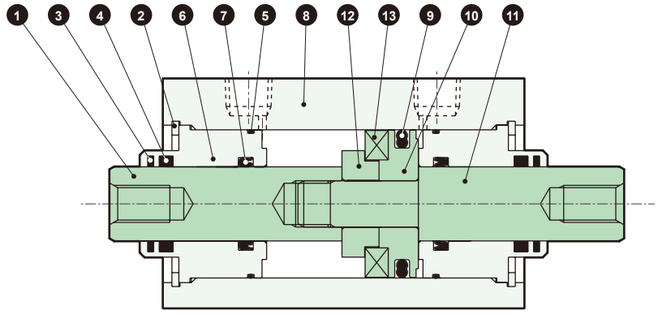
*1: When calculating A + (2×Stroke), B + Stroke, WF + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right.
(Example) For an intermediate stroke of 17 mm, enter the standard stroke of 20 mm for calculation.
*2: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*3: The position of the width across flats for spanner engagement on the left and right is not fixed.
***4: For dimensions with each switch, refer to P. 300 to 309.**
***5: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part dimension table

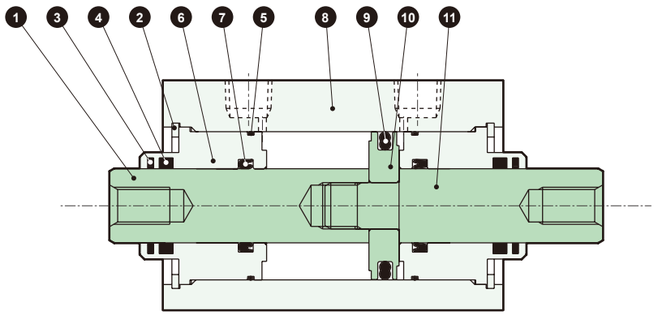
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf G1	wf G4
ø32	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø40	23.5	20.5	22	M14×1.5	14	16	8	10	15
ø50	28.5	26	27	M18×1.5	17	20	11	10	15
ø63	28.5	26	27	M18×1.5	17	20	11	10	15
ø80	35.5	32.5	32	M22×1.5	22	25	13	13	18
ø100	35.5	32.5	41	M26×1.5	27	30	16	13	18

Internal Structure Diagram/Material

- SSD2-DG1L-25 to 50 (Double Acting, Double Rod Type, Coil Scraper Type with Switch)
- SSD2-DG4L-25 to 50 (Double Acting, Double Rod Type, Spatter Adhesion Prevention Type with Switch)



- SSD2-DG1-25 to 50 (Double Acting, Double Rod Type, Coil Scraper Type)
- SSD2-DG4-25 to 50 (Double Acting, Double Rod Type, Spatter Adhesion Prevention Type)



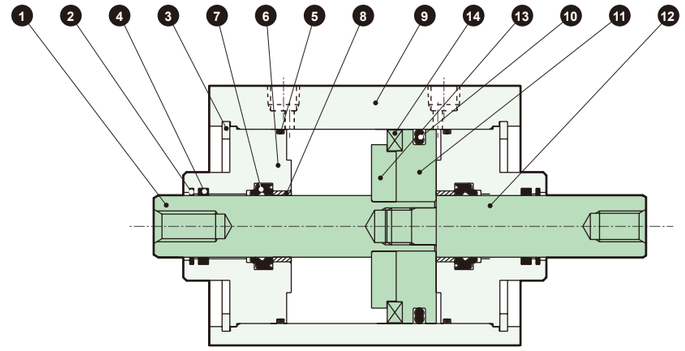
Part No.	Part Name	Material	Remarks
1	Piston Rod A	ø25: Stainless steel ø32 to 50: Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Coil scraper	Copper Alloy	
4	Lube keeper	Special rubber	G4 only
5	Rod metal gasket	Nitrile Rubber	
6	Rod Metal	Aluminum Alloy	Alumite
7	Rod Packing	Nitrile Rubber	

Part No.	Part Name	Material	Remarks
8	Cylinder Body	Aluminum Alloy	Hard Anodized
9	Piston Packing	Nitrile Rubber	
10	Piston	Aluminum Alloy	Chromate
11	Piston Rod B	ø25: Stainless steel ø32 to 50: Steel	Industrial Hard Chrome Plating
12	Spacer	Aluminum Alloy	ø25, ø32: Chromate
13	Magnet	Plastic	

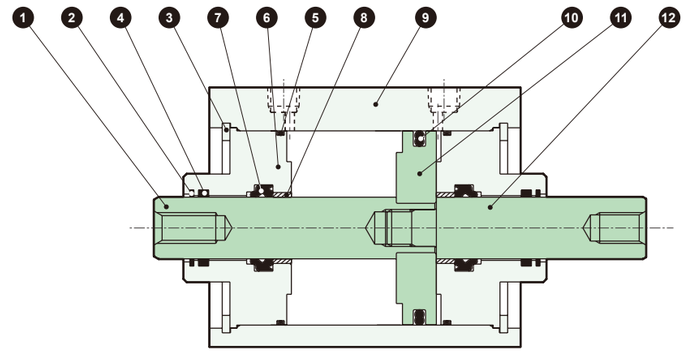
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

- SSD2-DG1L-63 to 100 (Double Acting, Double Rod Type, Coil Scraper Type with Switch)
- SSD2-DG4L-63 to 100 (Double Acting, Double Rod Type, Spatter Adhesion Prevention Type with Switch)



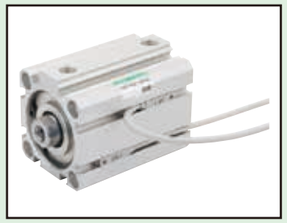
- SSD2-DG1-63 to 100 (Double Acting, Double Rod Type, Coil Scraper Type)
- SSD2-DG4-63 to 100 (Double Acting, Double Rod Type, Spatter Adhesion Prevention Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod A	Steel	Industrial Hard Chrome Plating
2	Coil scraper	Copper Alloy	
3	C-type retaining ring	Steel	Zinc phosphate
4	Lube keeper	Special rubber	G4 only
5	Rod metal gasket	Nitrile Rubber	
6	Rod Metal	Aluminum Alloy	Chromate
7	Rod Packing	Nitrile Rubber	

Part No.	Part Name	Material	Remarks
8	Bushing	Bearing Alloy	
9	Cylinder Body	Aluminum Alloy	Hard Anodized
10	Piston Packing	Nitrile Rubber	Chromate
11	Piston	Aluminum Alloy	Chromate
12	Piston Rod B	Steel	Industrial Hard Chrome Plating
13	Spacer	Aluminum Alloy	Chromate
14	Magnet	Plastic	

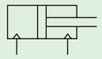
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Single Rod, Environmentally Resistant Scraper Type

SSD2-G5 Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

Custom Products RoHS

Model No. Notation Method

Without Switch (Without magnet for switch): SSD2-G5 – 20 – ( ) – 5 ——— N – LB – I

With Switch (Built-in magnet for switch): SSD2-G5L – 20 – ( ) – 5 – T0H – R – N – LB – I

①	②	③	④	⑤	⑥	⑦	⑧	⑨
Model No.	Bore Size	Piping thread type	Stroke	Switch Model No.	Number of Switches	Option	Mounting type	Accessories

①Model No.

Code	Content
SSD2-G5	Double Acting, Single Rod, Environmentally Resistant Scraper Type (Custom product)
SSD2-G5L	Double Acting, Single Rod, Environmentally Resistant Scraper Type with Switch (Custom order)

②Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

③Port Thread Type:

Code	Content
Blank	M5 (ø20 to ø25) Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

④Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø20, ø25	1 to 50	Every 1 mm
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

⑤Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*5
	2-Color AC For Magnetic Field		—		—		T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□				●	●	●	●	●	*3

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*8 *7

*7: Only T2WLH, T2WLV can be selected.
*8: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T8□ switches cannot be mounted on ø20 to ø32.
*4: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*5: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*6: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

⑥Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑦Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

⑧Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 250, P. 252. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

⑨Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ⑦Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		50		100					
Intermediate Stroke *2		Every 1 mm							

*1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For minimum stroke with switch, refer to P. 246.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-G5-..... -XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Food grade lubricant usable in food manufacturing processes

SSD2-G5-..... -FP1

Switch Single Unit Model No. Notation Method

SW – T0H

⑤ Switch Model No.

Specifications

Item		SSD2-G5 SSD2-G5L (With Switch)							
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Maximum Operating Pressure	MPa	1.0							
Min. operating pressure	MPa	0.2					0.15		
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (However, no freezing)							
Port Size		M5		Rc1/8 □1		Rc1/4		Rc3/8	
Stroke tolerance	mm	+1.0 0							
Operating piston speed	mm/s	50 to 500					50 to 300		
Cushion		None							
Lubrication		Not required (When lubricating, use turbine oil class 1 ISO VG32)							
Allowable Absorbed Energy J		0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: For ø32 without switch, 5 stroke, the port size will be M5.

With Switch Minimum Stroke (With 2 Switches)

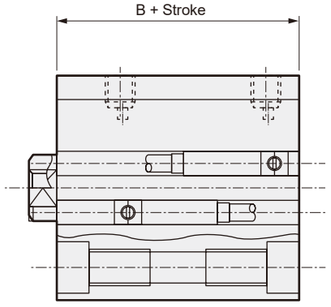
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V
ø20	5	5
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD2-G5 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-G5-32-38 A +2 mm spacer is added to the standard cylinder SSD2-G5-32-40 to make it 38 mm. B + Stroke = 33 + 40 = 73	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	95	150	107	182	120	195	133	208	145	220	158	233	171	246	184	259	197	272	210	285	-	-	-	-
ø25	131	222	146	237	162	253	178	269	194	285	209	300	225	316	241	332	257	348	272	363	-	-	-	-
ø32	185	299	207	321	229	343	251	365	272	386	294	408	316	430	338	452	360	474	381	495	552	600	662	710
ø40	269	412	296	439	322	465	349	492	376	519	402	545	429	572	455	598	482	625	508	651	726	784	858	916
ø50	-	-	476	670	518	712	560	754	602	796	645	839	687	881	729	923	771	965	813	1007	1160	1217	1370	1427
ø63	-	-	703	982	758	1037	813	1092	868	1147	923	1202	999	1258	1074	1313	1150	1369	1144	1423	1332	1696	1709	1973
ø80	-	-	1240	1653	1327	1740	1413	1826	1500	1908	1586	1990	1673	2082	1760	2173	1847	2265	1933	2346	2701	2754	3136	3211
ø100	-	-	1879	2446	1993	2560	2106	2673	2220	2787	2334	2901	2448	3015	2561	3128	2675	3242	2789	3356	3857	3929	4424	4496

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26×10²	1.57×10²	1.88×10²	2.20×10²	2.51×10²	2.83×10²	3.14×10²
	Pull	-	47.1	70.7	94.2	1.18×10²	1.41×10²	1.65×10²	1.88×10²	2.12×10²	2.36×10²
ø25	Push	-	98.2	1.47×10²	1.96×10²	2.45×10²	2.95×10²	3.44×10²	3.93×10²	4.42×10²	4.91×10²
	Pull	-	75.6	1.13×10²	1.51×10²	1.89×10²	2.27×10²	2.64×10²	3.02×10²	3.40×10²	3.78×10²
ø32	Push	-	1.61×10²	2.41×10²	3.22×10²	4.02×10²	4.83×10²	5.63×10²	6.43×10²	7.24×10²	8.04×10²
	Pull	-	1.21×10²	1.81×10²	2.41×10²	3.02×10²	3.62×10²	4.22×10²	4.83×10²	5.43×10²	6.03×10²
ø40	Push	-	2.51×10²	3.77×10²	5.03×10²	6.28×10²	7.54×10²	8.80×10²	1.01×10³	1.13×10³	1.26×10³
	Pull	-	2.11×10²	3.17×10²	4.22×10²	5.28×10²	6.33×10²	7.39×10²	8.44×10²	9.50×10²	1.06×10³
ø50	Push	-	3.93×10²	5.89×10²	7.85×10²	9.82×10²	1.18×10³	1.37×10³	1.57×10³	1.77×10³	1.96×10³
	Pull	-	3.30×10²	4.95×10²	6.60×10²	8.25×10²	9.90×10²	1.15×10³	1.32×10³	1.48×10³	1.65×10³
ø63	Push	4.68×10²	6.23×10²	9.35×10²	1.25×10³	1.56×10³	1.87×10³	2.18×10³	2.49×10³	2.81×10³	3.12×10³
	Pull	4.20×10²	5.61×10²	8.41×10²	1.12×10³	1.40×10³	1.68×10³	1.96×10³	2.24×10³	2.52×10³	2.80×10³
ø80	Push	7.54×10²	1.01×10³	1.51×10³	2.01×10³	2.51×10³	3.02×10³	3.52×10³	4.02×10³	4.52×10³	5.03×10³
	Pull	6.80×10²	9.07×10²	1.36×10³	1.81×10³	2.27×10³	2.72×10³	3.17×10³	3.63×10³	4.08×10³	4.54×10³
ø100	Push	1.18×10³	1.57×10³	2.36×10³	3.14×10³	3.93×10³	4.71×10³	5.50×10³	6.28×10³	7.07×10³	7.85×10³
	Pull	1.07×10³	1.43×10³	2.14×10³	2.86×10³	3.57×10³	4.29×10³	5.00×10³	5.72×10³	6.43×10³	7.15×10³

Mounting Bracket Model No. Notation Method

Bore Size (mm) Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

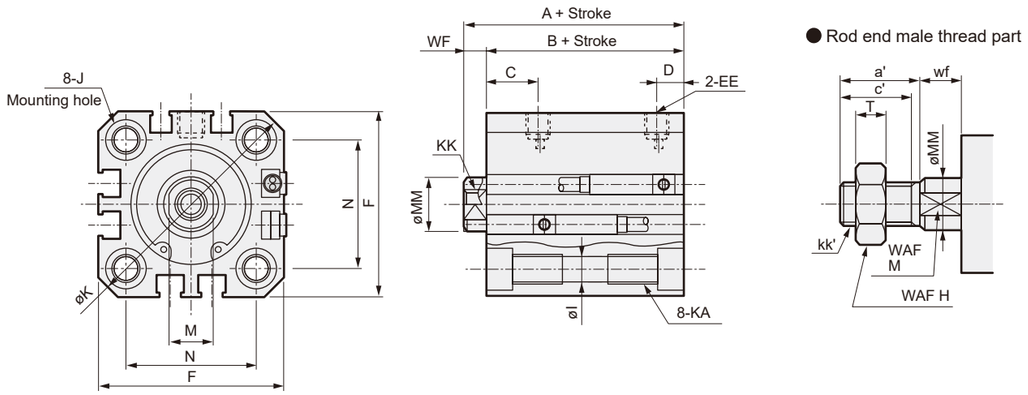
Bore Size (mm) Mounting bracket	ø100
Foot (LB)	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø20, ø25)

● SSD2-G5(L)-20, 25

ø20, ø25



● Rod end male thread part

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F
ø20	44	39.5	34	29.5	18	5.5	M5	36
ø25	47.5	42.5	37.5	32.5	21	6	M5	40

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	WF
ø20	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

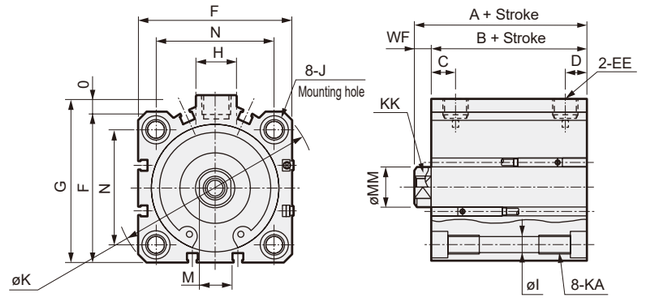
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings with accessories and outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

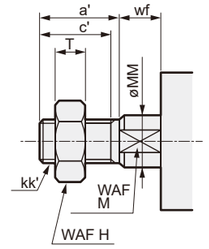
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-G5(L)-32 to 100



● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1, *2	Dimension without switch B *1, *2	Common dimension C *3	D *3	EE *4	F	G	H
ø32	50	43	40 (50)	33 (43)	18 (20)	8 (5.5)	Rc1/8	45	49.5	12.5
ø40	56.5	49.5	46.5 (56.5)	39.5 (49.5)	22 (21.5)	8.5 (8)	Rc1/8	52	57	15
ø50	58.5	50.5	48.5 (58.5)	40.5 (50.5)	20.5	10.5	Rc1/4	64	71	18
ø63	64	56	54 (64)	46 (56)	23	11	Rc1/4	77	84	23
ø80	73.5	63.5	63.5 (73.5)	53.5 (63.5)	26	13	Rc3/8	98	104	31
ø100	85	73	75 (85)	63 (73)	33	15	Rc3/8	117	123.5	38

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	O	WF
ø32	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	10.5	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
*3: Dimensions in ( ) for columns C and D are values for 5 strokes without switch.
*4: For code EE, ø32 without switch, 5 strokes, the port size will be M5.
***5: For dimensions with each switch, refer to P. 300 to 309.**
***6: For outline dimension drawings of individual accessories, refer to P. 34.**

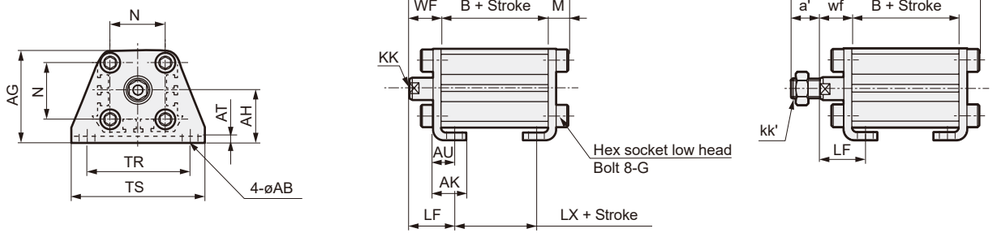
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

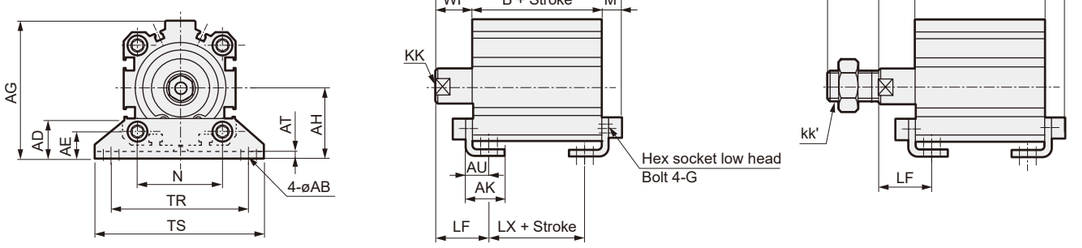
Outline Dimension Drawing

● Axial Foot (LB)
SSD2-G5(L)-20 to 100-LB

· ø20, ø25



· ø32 to ø100



Code	Common dimension													
Bore Size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø20	7	-	-	42	24	15	3.2	9.2	M6×16	-	25.5	48	62	7.2
ø25	7	-	-	46	26	16.5	3.2	10.7	M6×16	-	28	52	66	7.2
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

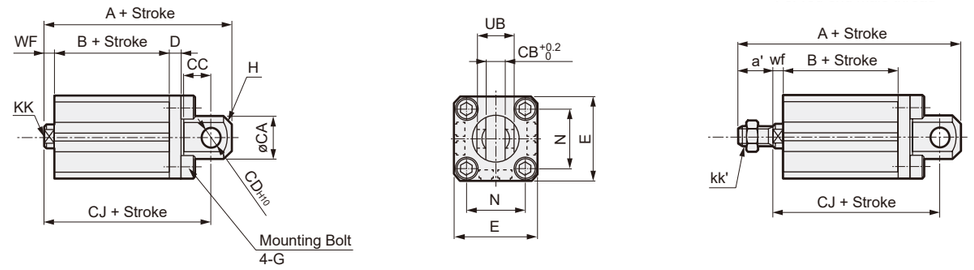
Code	For female thread								For male thread									
Bore Size (mm)	WF	LF	Dimension with switch			Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
			A	B	LX	A *1	B *1	LX *1					A	B	LX	A *1	B *1	LX *1
ø20	14.5	20.5	61.2	39.5	27.5	51.2	29.5	17.5	14	-	14.5	20.5	75.2	39.5	27.5	65.2	29.5	17.5
ø25	15	22.5	64.7	42.5	27.5	54.7	32.5	17.5	17.5	-	15	22.5	82.2	42.5	27.5	72.2	32.5	17.5
ø32	17	25	67.2	43	27	57.2 (67.2)	33 (43)	17 (27)	23.5	M14×1.5	15	23	88.7	43	27	78.7 (88.7)	33 (43)	17 (27)
ø40	17	25	73.7	49.5	33.5	63.7 (73.7)	39.5 (49.5)	23.5 (33.5)	23.5	M14×1.5	15	23	95.2	49.5	33.5	85.2 (95.2)	39.5 (49.5)	23.5 (33.5)
ø50	18	29.5	76.7	50.5	27.5	66.7 (76.7)	40.5 (50.5)	17.5 (27.5)	28.5	M18×1.5	15	26.5	102.2	50.5	27.5	92.2 (102.2)	40.5 (50.5)	17.5 (27.5)
ø63	18	31	83.2	56	30	73.2 (83.2)	46 (56)	20 (30)	28.5	M18×1.5	15	28	108.7	56	30	98.7 (108.7)	46 (56)	20 (30)
ø80	20	35	95	63.5	33.5	85 (95)	53.5 (63.5)	23.5 (33.5)	35.5	M22×1.5	18	33	128.5	63.5	33.5	118.5 (128.5)	53.5 (63.5)	23.5 (33.5)
ø100	22	39	108	73	39	98 (108)	63 (73)	29 (39)	35.5	M26×1.5	18	35	139.5	73	39	129.5 (139.5)	63 (73)	29 (39)

*1: Dimensions in ( ) for codes A, B, LX are values when exceeding 50 strokes.

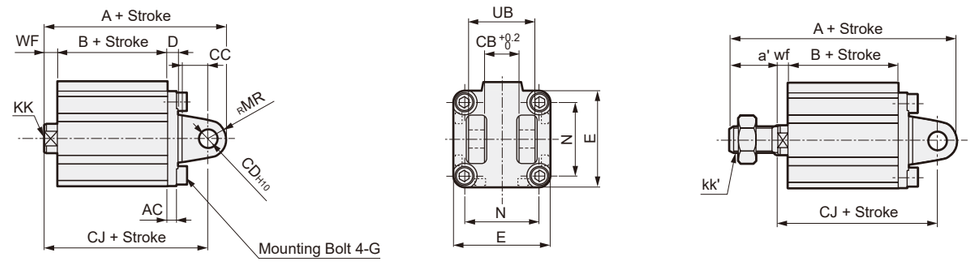
Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-G5(L)-20 to 100-CB

· ø20, ø25



· ø32 to ø100



Code	Common dimension												
Bore Size (mm)	AC	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB
ø20	-	20	8.2	12	8	5	36	M6×16	-	C4	-	25.5	16
ø25	-	24	10.2	14	10	5	40	M6×16	-	C5	-	28	20
ø32	4.5	-	18.2	14	10	5	45	M6×16	M8 depth 13	-	10	34	36
ø40	5	-	18.2	14	10	6	52	M6×16	M8 depth 13	-	10	40	36
ø50	6	-	22.2	20	14	7	64	M8×20	M10 depth 15	-	14	50	44
ø63	7	-	22.2	20	14	8	77	M10×25	M10 depth 15	-	14	60	44
ø80	9	-	28.2	27	18	10	98	M12×40	M16 depth 21	-	18	77	56
ø100	12	-	32.2	31	22	13	117	M12×40	M20 depth 27	-	22	94	64

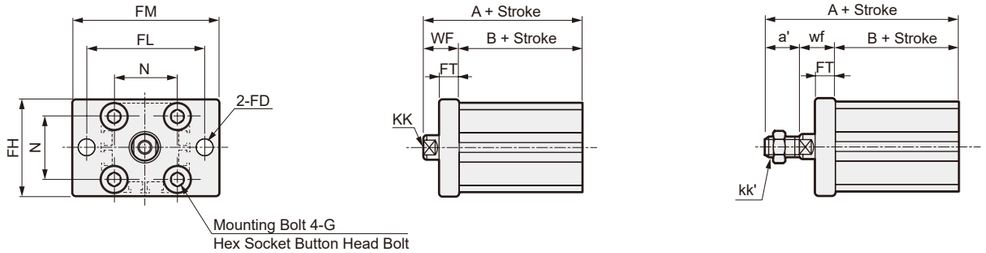
Code	For female thread							For male thread								
Bore Size (mm)	WF	Dimension with switch			Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
		A	B	CJ	A *1	B *1	CJ *1				A	B	CJ	A *1	B *1	CJ *1
ø20	4.5	71	39.5	62	61	29.5	52	14	-	4.5	85	39.5	62	75	29.5	52
ø25	5	77.5	42.5	67.5	67.5	32.5	57.5	17.5	-	5	95	42.5	67.5	85	32.5	57.5
ø32	7	80	43	70	70 (80)	33 (43)	60 (70)	23.5	M14×1.5	5	101.5	43	68	91.5 (101.5)	33 (43)	58 (68)
ø40	7	88.5	49.5	78.5	78.5 (88.5)	39.5 (49.5)	68.5 (78.5)	23.5	M14×1.5	5	110	49.5	76.5	100 (110)	39.5 (49.5)	66.5 (76.5)
ø50	8	100.5	50.5	86.5	90.5 (100.5)	40.5 (50.5)	76.5 (86.5)	28.5	M18×1.5	5	126	50.5	83.5	116 (126)	40.5 (50.5)	73.5 (83.5)
ø63	8	108	56	94	98 (108)	46 (56)	84 (94)	28.5	M18×1.5	5	133.5	56	91	123.5 (133.5)	46 (56)	81 (91)
ø80	10	129.5	63.5	111.5	119.5 (129.5)	53.5 (63.5)	101.5 (111.5)	35.5	M22×1.5	8	163	63.5	109.5	153 (163)	53.5 (63.5)	99.5 (109.5)
ø100	12	152	73	130	142 (152)	63 (73)	120 (130)	35.5	M26×1.5	8	183.5	73	126	173.5 (183.5)	63 (73)	116 (126)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

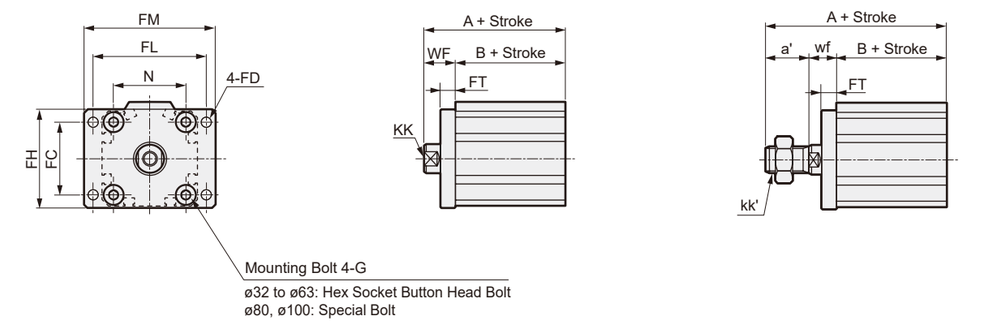
Outline Dimension Drawing

● Rod Side Flange (FA)
SSD2-G5(L)-20 to 100-FA

· ø20, ø25



· ø32 to ø100



Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø20	-	6.6	39	48	60	8	M6×16	-	25.5
ø25	-	6.6	42	52	64	8	M6×16	-	28
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94

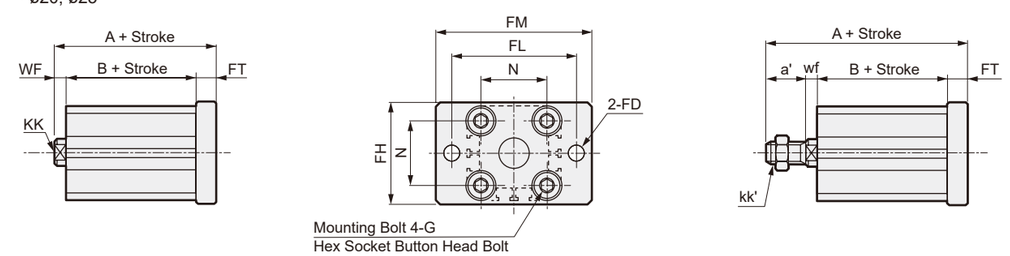
Code	For female thread					For male thread						
Bore Size (mm)	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A *1	B *1				A	B	A *1	B *1
ø20	14.5	54	39.5	44	29.5	14	-	14.5	68	39.5	58	29.5
ø25	15	57.5	42.5	47.5	32.5	17.5	-	15	75	42.5	65	32.5
ø32	17	60	43	50 (60)	33 (43)	23.5	M14×1.5	15	81.5	43	71.5 (81.5)	33 (43)
ø40	17	66.5	49.5	56.5 (66.5)	39.5 (49.5)	23.5	M14×1.5	15	88	49.5	78 (88)	39.5 (49.5)
ø50	18	68.5	50.5	58.5 (68.5)	40.5 (50.5)	28.5	M18×1.5	15	94	50.5	84 (94)	40.5 (50.5)
ø63	18	74	56	64 (74)	46 (56)	28.5	M18×1.5	15	99.5	56	89.5 (99.5)	46 (56)
ø80	20	83.5	63.5	73.5 (83.5)	53.5 (63.5)	35.5	M22×1.5	18	117	63.5	107 (117)	53.5 (63.5)
ø100	22	95	73	85 (95)	63 (73)	35.5	M26×1.5	18	126.5	73	116.5 (126.5)	63 (73)

*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

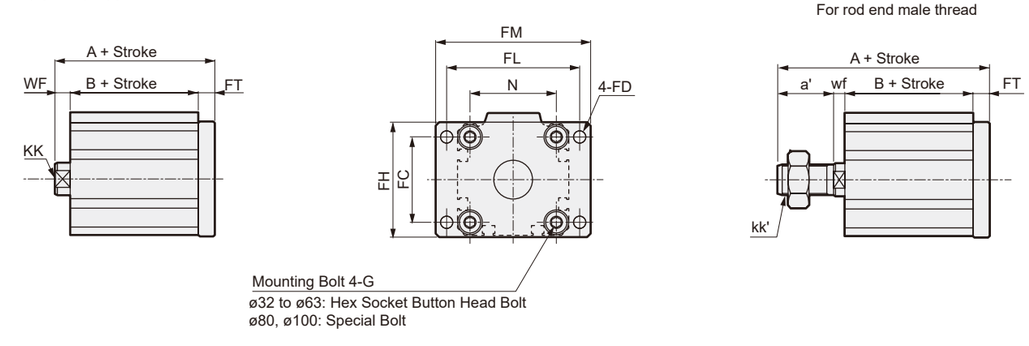
Outline Dimension Drawing

● Head Side Flange (FB)
SSD2-G5(L)-20 to 100-FB

· ø20, ø25



· ø32 to ø100



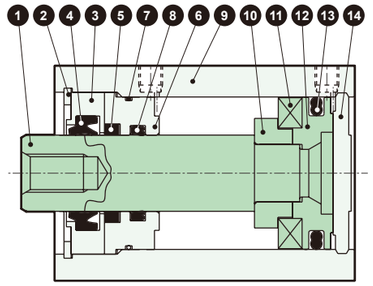
Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø20	-	6.6	39	48	60	8	M6×16	-	25.5
ø25	-	6.6	42	52	64	8	M6×16	-	28
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94

Code	For female thread					For male thread						
Bore Size (mm)	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A *1	B *1				A	B	A *1	B *1
ø20	4.5	52	39.5	42	29.5	14	-	4.5	66	39.5	56	29.5
ø25	5	55.5	42.5	45.5	32.5	17.5	-	5	73	42.5	63	32.5
ø32	7	58	43	48 (58)	33 (43)	23.5	M14×1.5	5	79.5	43	69.5 (79.5)	33 (43)
ø40	7	64.5	49.5	54.5 (64.5)	39.5 (49.5)	23.5	M14×1.5	5	86	49.5	76 (86)	39.5 (49.5)
ø50	8	67.5	50.5	57.5 (67.5)	40.5 (50.5)	28.5	M18×1.5	5	93	50.5	83 (93)	40.5 (50.5)
ø63	8	73	56	63 (73)	46 (56)	28.5	M18×1.5	5	98.5	56	88.5 (98.5)	46 (56)
ø80	10	84.5	63.5	74.5 (84.5)	53.5 (63.5)	35.5	M22×1.5	8	118	63.5	108 (118)	53.5 (63.5)
ø100	12	96	73	86 (96)	63 (73)	35.5	M26×1.5	8	127.5	73	117.5 (127.5)	63 (73)

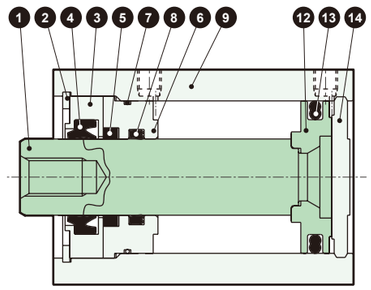
*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø20, ø25)

● SSD2-G5L-20, 25
(Double Acting, Environmentally Resistant Scraper Type with Switch)



● SSD2-G5-20, 25
(Double Acting, Environmentally Resistant Scraper Type)

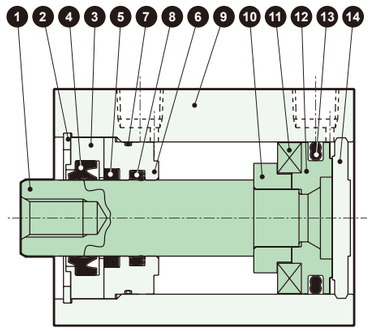


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Industrial Hard Chrome Plating	8	Rod Packing	Nitrile Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	9	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod metal 1	Special aluminum	Alumite	10	Spacer	Aluminum Alloy	Chromate
4	Scraper	Nitrile Rubber		11	Magnet	Plastic	
5	Lube keeper	Special rubber		12	Piston	Aluminum Alloy	Chromate
6	Rod Metal	Aluminum Alloy	Alumite	13	Piston Packing	Nitrile Rubber	
7	Rod metal gasket	Nitrile Rubber		14	Cover	Stainless Steel	

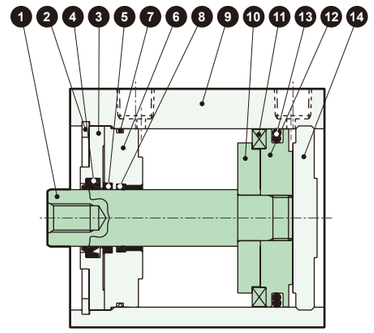
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø32 to ø50)

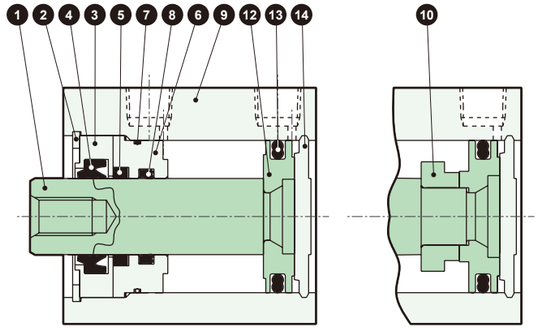
● SSD2-G5L-32 to 50
(Double Acting, Environmentally Resistant Scraper Type with Switch)



● SSD2-G5L-63 to 100
(Double Acting, Environmentally Resistant Scraper Type with Switch)

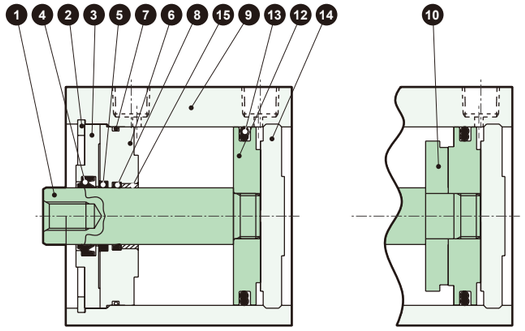


● SSD2-G5-32 to 50
(Double Acting, Environmentally Resistant Scraper Type)



50st or less　　Exceeding 50st

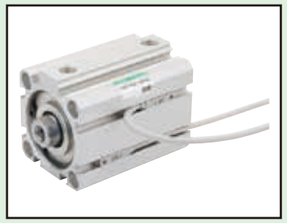
● SSD2-G5-63 to 100
(Double Acting, Environmentally Resistant Scraper Type)



50st or less　　Exceeding 50st

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Rod Packing	Nitrile Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	9	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod metal 1	Aluminum Alloy	ø32 to ø50: Alumite ø63 to ø100: Chromate	10	Spacer	Aluminum Alloy	Chromate
4	Scraper	Nitrile Rubber		11	Magnet	Plastic	
5	Lube keeper	Special rubber		12	Piston	Aluminum Alloy	Chromate
6	Rod Metal	Aluminum Alloy	ø32 to ø50: Alumite ø63 to ø100: Chromate	13	Piston Packing	Nitrile Rubber	
7	Rod metal gasket	Nitrile Rubber		14	Cover	Aluminum Alloy	Alumite
				15	Bushing	Bearing Alloy	

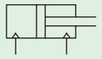
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Single Rod, High Load, Environmental Resistant Scraper Type

SSD2-KG5 Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

Custom Products RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD2-KG5 – 20 – [ ] – 5 ——— N – LB – I

With Switch (Built-in magnet for switch)

SSD2-KG5L – 20 – [ ] – 5 – T0H – R – N – LB – I

① Model No.	② Bore Size	③ Piping thread type	④ Stroke	⑤ Switch Model No.	⑥ Number of Switches	⑦ Option	⑧ Mounting type	⑨ Accessories

① Model No.

Code	Content
SSD2-KG5	Double Acting, Single Rod, High Load, Environmentally Resistant Scraper Type (Custom product)
SSD2-KG5L	Double Acting, Single Rod, High Load, Environmentally Resistant Scraper Type with Switch (Custom product)

② Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

③ Port Thread Type:

Code	Content
Blank	M5 (ø20 to ø25)
	Rc thread (ø32 to ø100)
N	NPT thread (ø32 to ø100)
G	G thread (ø32 to ø100)

④ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø20, ø25	1 to 50	Every 1 mm
ø32 to ø100	1 to 100	

Note: Refer to Appendix 1 on the following page for details.

⑤ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	Bore Size 20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	●	●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	●	●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	●	●							
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	●	●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	●	●							
	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	*5
	2-Color for AC Magnetic Field		—		—		T2YD□	–	●	●	●	●	●	●	●	●	
			—		—		T2YDT□	–	●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3	●	●	●	●	●	●	●	●	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□				●	●	●	●	●	*3

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*8 *7

*7: Only T2WLH, T2WLV can be selected.
*8: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: T8□ switches cannot be mounted on ø20 to ø32.
*4: F-type switches can only be mounted on the piping port surface of ø20, ø25 Bore Sizes.
*5: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*6: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

⑥ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑦ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

⑧ Mounting Type

Mounting brackets are included to the product for shipment.

Code	Content	
Blank	Without mounting bracket	
*1 LB	Axial Foot Type (Double Side)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 262, P. 264. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

⑨ Accessories

Code	Content	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ⑦ Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 20	25	32	40	50	63	80	100
Standard Stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		50		100					
Intermediate Stroke *2		Every 1 mm							

*1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator type, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches attachable and minimum stroke, refer to P. 258.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-KG5 – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H

⑤ Switch Model No.

Specifications

Item	SSD2-KG5 SSD2-KG5L (With Switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.2					0.15		
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)							
Port Size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$							
Operating Piston Speed mm/s	50 to 500					50 to 300		
Cushion	Rubber Cushion							
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

With Switch Minimum Stroke (With 2 Switches)

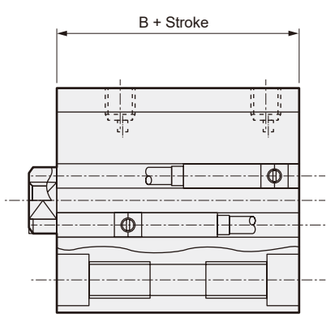
Bore Size (mm)	T0H/V, T5H/V	T2H/V, T3H/V	T2WLH/V
ø20	5	5	20
ø25			
ø32			15
ø40			
ø50			10
ø63			
ø80			
ø100			

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD2-KG5 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	20 to 25	1 to 49
	32 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-KG5-32-38 A +2 mm spacer is added to the standard cylinder SSD2-KG5-32-40 to make it 38 mm. B + Stroke = 43 + 40 = 83	



Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa 0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore Size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	107	182	120	195	133	208	145	220	158	233	170	245	182	257	195	270	206	281	220	295	-	-	-	-
ø25	146	237	162	253	178	269	194	285	209	300	226	317	242	333	258	349	274	365	290	381	-	-	-	-
ø32	230	344	251	365	272	386	294	408	316	430	338	452	360	474	381	495	403	517	424	538	597	646	705	753
ø40	323	466	349	492	376	519	402	545	428	571	455	598	482	625	508	651	535	678	561	704	779	837	911	969
ø50	-	-	560	754	602	796	645	839	688	882	729	923	771	965	813	1007	855	1049	897	1091	1244	1301	1454	1511
ø63	-	-	813	1092	868	1147	923	1202	979	1258	1034	1313	1089	1368	1144	1423	1199	1478	1254	1533	1744	1808	2019	2083
ø80	-	-	1413	1826	1500	1913	1586	1999	1673	2086	1760	2173	1847	2260	1933	2346	2020	2433	2106	2519	2886	2952	3318	3384
ø100	-	-	2106	2673	2220	2787	2334	2901	2448	3015	2561	3128	2675	3242	2789	3356	2903	3470	3017	3584	4082	4154	4652	4724

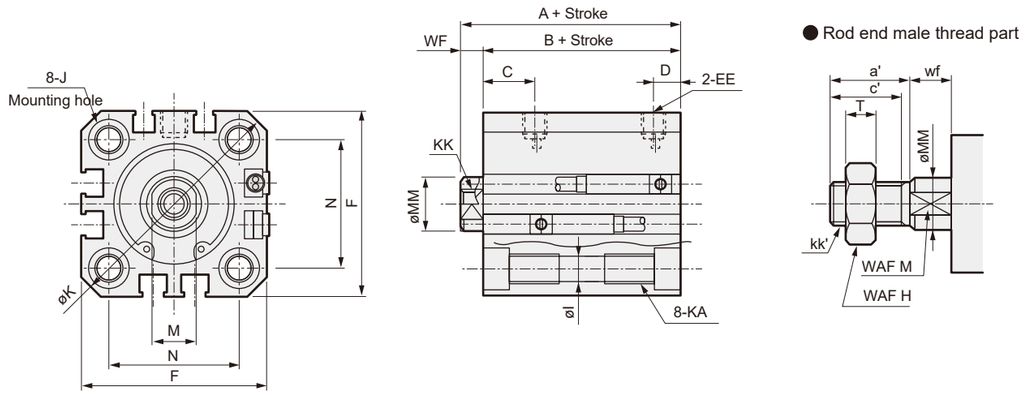
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø20, ø25)

● SSD2-KG5(L)-20, 25



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F
ø20	49	44.5	39	34.5	18	5.5	M5	36
ø25	52.5	47.5	42.5	37.5	21	6	M5	40

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	WF
ø20	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

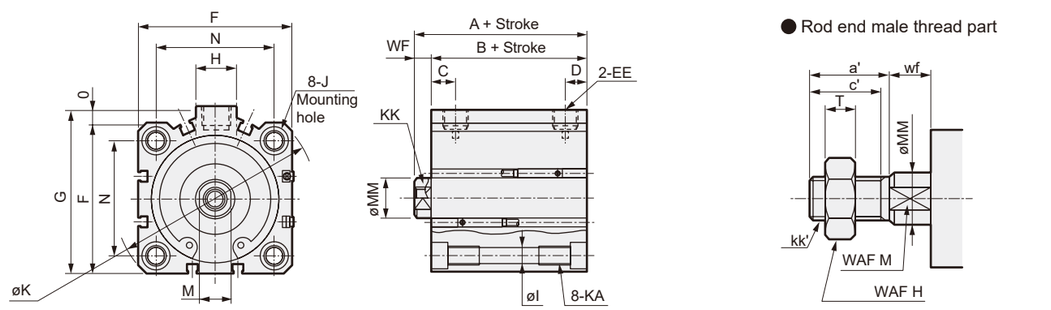
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For Bore Sizes ø20, ø25, the piping port surface is for F-type switches only.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD2-KG5(L)-32 to 100



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1, *2	Dimension without switch B *1, *2	Common dimension C	D	EE	F	G	H
ø32	60	53	50 (60)	43 (53)	18	8	Rc1/8	45	49.5	12.5
ø40	66.5	59.5	56.5 (66.5)	49.5 (59.5)	22	8.5	Rc1/8	52	57	15
ø50	68.5	60.5	58.5 (68.5)	50.5 (60.5)	20.5	10.5	Rc1/4	64	71	18
ø63	74	66	64 (74)	56 (66)	23	11	Rc1/4	77	84	23
ø80	83.5	73.5	73.5 (83.5)	63.5 (73.5)	26	13	Rc3/8	98	104	31
ø100	95	83	85 (95)	73 (83)	33	15	Rc3/8	117	123.5	38

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	O	WF
ø32	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	10.5	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.
***3: For dimensions with each switch, refer to P. 300 to 309.**
***4: For outline dimension drawings of individual accessories, refer to P. 34.**

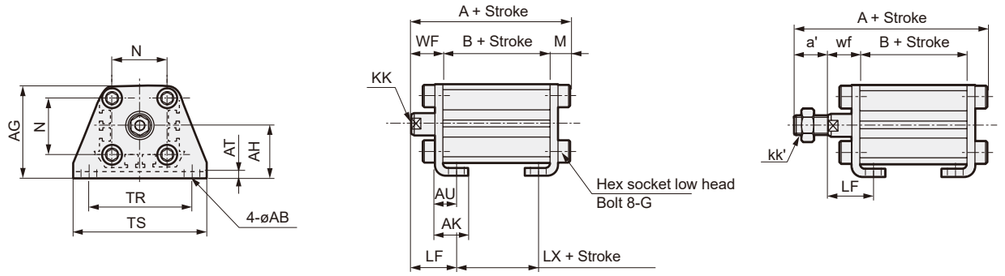
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

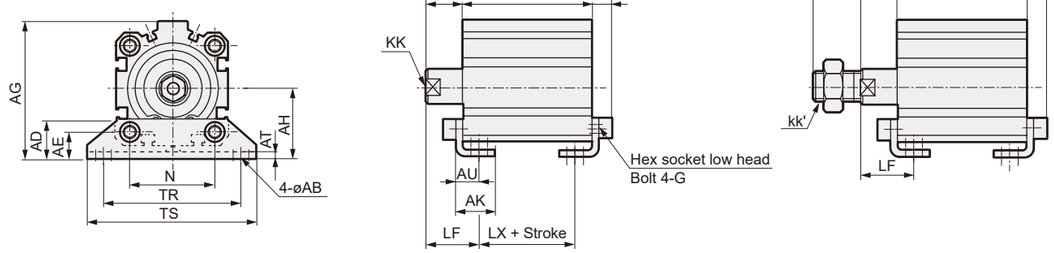
Outline Dimension Drawing (Bore Size: ø20 to ø100)

● Axial Foot (LB)
SSD2-KG5(L)-20 to 100-LB

· ø20, ø25



· ø32 to ø100



Code	Common dimension													
Bore Size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø20	7	-	-	42	24	15	3.2	9.2	M6×16	-	25.5	48	62	7.2
ø25	7	-	-	46	26	16.5	3.2	10.7	M6×16	-	28	52	66	7.2
ø32	7	18.5	13	57	30	17	3.2	11.2	M6×16	M8 depth 13	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

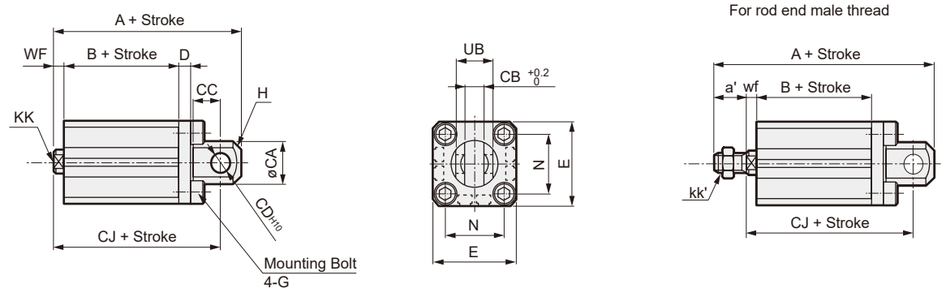
Code	For female thread								For male thread								
Bore Size (mm)	WF	LF	Dimension with switch			Dimension without switch			a'	kk'	wf	LF	Dimension with switch			Dimension without switch		
			A	B	LX	A *1	B *1	LX *1					A	B	LX	A *1	B *1	LX *1
ø20	14.5	20.5	66.2	44.5	32.5	56.2	34.5	22.5	14	-	14.5	20.5	80.2	44.5	32.5	70.2	34.5	22.5
ø25	15	22.5	69.7	47.5	32.5	59.7	37.5	22.5	17.5	-	15	22.5	87.2	47.5	32.5	77.2	37.5	22.5
ø32	17	25	77.2	53	37	67.2 (77.2)	43 (53)	27 (37)	23.5	M14×1.5	15	23	98.7	53	37	88.7 (98.7)	43 (53)	27 (37)
ø40	17	25	83.7	59.5	43.5	73.7 (83.7)	49.5 (59.5)	33.5 (43.5)	23.5	M18××1.5	15	23	105.2	59.5	43.5	95.2 (105.2)	49.5 (59.5)	33.5 (43.5)
ø50	18	29.5	86.7	60.5	37.5	76.7 (86.7)	50.5 (60.5)	27.5 (37.5)	28.5	M18××1.5	15	26.5	112.2	60.5	37.5	102.2 (112.2)	50.5 (60.5)	27.5 (37.5)
ø63	18	31	93.2	66	40	83.2 (93.2)	56 (66)	30 (40)	28.5	M18××1.5	15	28	118.7	66	40	108.7 (118.7)	56 (66)	30 (40)
ø80	20	35	105	73.5	43.5	95 (105)	63.5 (73.5)	33.5 (43.5)	35.5	M18××1.5	18	33	138.5	73.5	43.5	128.5 (138.5)	63.5 (73.5)	33.5 (43.5)
ø100	22	39	118	83	49	108 (118)	73 (83)	39 (49)	35.5	M18××1.5	18	35	149.5	83	49	139.5 (149.5)	73 (83)	39 (49)

*1: Dimensions in ( ) for codes A, B, LX are values when exceeding 50 strokes.

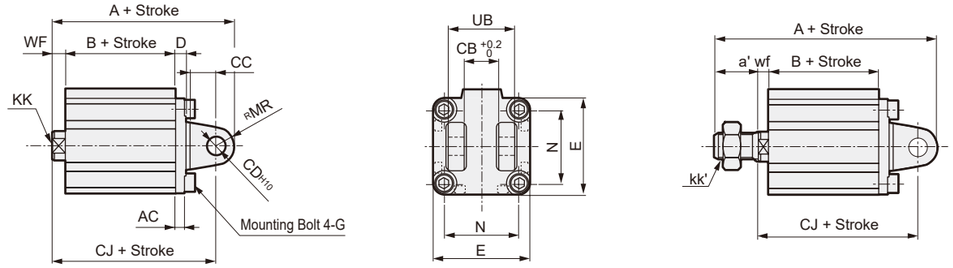
Outline Dimension Drawing (Bore Size: ø20 to ø100)

● Double Knuckle Clevis (CB)
SSD2-KG5(L)-20 to 100-CB

· ø20, ø25



· ø32 to ø100



Code	Common dimension												
Bore Size (mm)	AC	CA	CB	CC	CD	D	E	G	KK	H	MR	N	UB
ø20	-	20	8.2	12	8	5	36	M6×16	-	C4	-	25.5	16
ø25	-	24	10.2	14	10	5	40	M6×16	-	C5	-	28	20
ø32	4.5	-	18.2	14	10	5	45	M6×16	M8 depth 13	-	10	34	36
ø40	5	-	18.2	14	10	6	52	M6×16	M8 depth 13	-	10	40	36
ø50	6	-	22.2	20	14	7	64	M8×20	M10 depth 15	-	14	50	44
ø63	7	-	22.2	20	14	8	77	M10×25	M10 depth 15	-	14	60	44
ø80	9	-	28.2	27	18	10	98	M12×40	M16 depth 21	-	18	77	56
ø100	12	-	32.2	31	22	13	117	M12×40	M20 depth 27	-	22	94	64

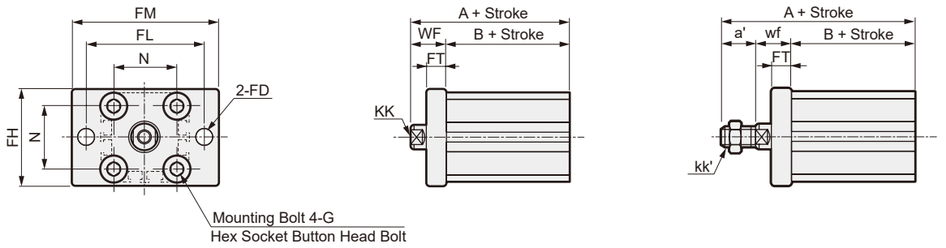
Code	For female thread							For male thread								
Bore Size (mm)	WF	Dimension with switch			Dimension without switch			a'	kk'	wf	Dimension with switch			Dimension without switch		
		A	B	CJ	A *1	B *1	CJ *1				A	B	CJ	A *1	B *1	CJ *1
ø20	4.5	76	44.5	67	66	34.5	57	14	-	4.5	90	44.5	67	80	34.5	57
ø25	5	82.5	47.5	72.5	72.5	37.5	62.5	17.5	-	5	100	47.5	72.5	90	37.5	62.5
ø32	7	90	53	80	80 (90)	43 (53)	70 (80)	23.5	M14×1.5	5	111.5	53	78	101.5 (111.5)	43 (53)	68 (78)
ø40	7	98.5	59.5	88.5	88.5 (98.5)	49.5 (59.5)	78.5 (88.5)	23.5	M14×1.5	5	120	59.5	86.5	110 (120)	49.5 (59.5)	76.5 (86.5)
ø50	8	110.5	60.5	96.5	100.5 (110.5)	50.5 (60.5)	86.5 (96.5)	28.5	M18×1.5	5	136	60.5	93.5	126 (136)	50.5 (60.5)	83.5 (93.5)
ø63	8	118	66	104	108 (118)	56 (66)	94 (104)	28.5	M18×1.5	5	143.5	66	101	133.5 (143.5)	56 (66)	91 (101)
ø80	10	139.5	73.5	121.5	129.5 (139.5)	63.5 (73.5)	111.5 (121.5)	35.5	M22×1.5	8	173	73.5	119.5	163 (173)	63.5 (73.5)	109.5 (119.5)
ø100	12	162	83	140	152 (162)	73 (83)	130 (140)	35.5	M26×1.5	8	193.5	83	136	183.5 (193.5)	73 (83)	126 (136)

*1: Dimensions in ( ) for codes A, B, CJ are values when exceeding 50 strokes.

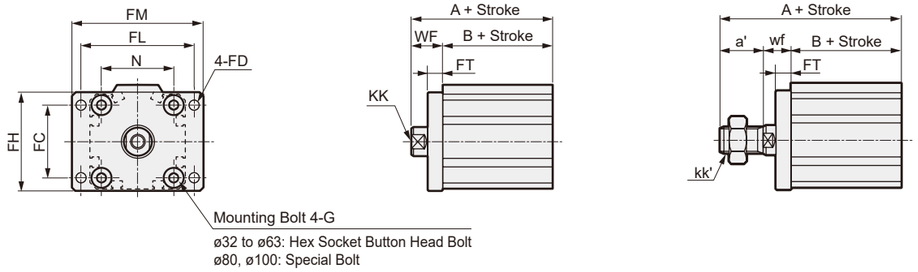
Outline Dimension Drawing (Bore Size: ø20 to ø100)

● Rod Side Flange (FA)
SSD2-KG5(L)-20 to 100-FA

· ø20, ø25



· ø32 to ø100



Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø20	-	6.6	39	48	60	8	M6×16	-	25.5
ø25	-	6.6	42	52	64	8	M6×16	-	28
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94

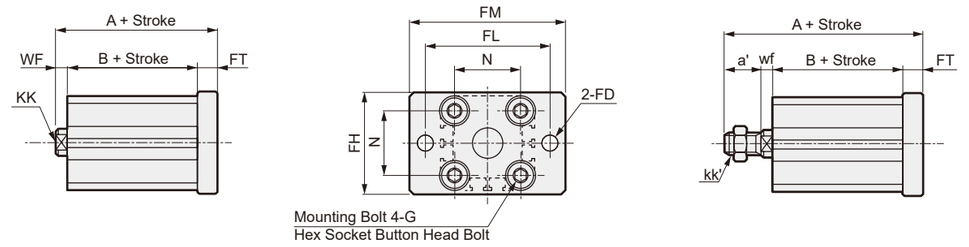
Code	For female thread					For male thread						
Bore Size (mm)	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A *1	B *1				A	B	A *1	B *1
ø20	14.5	59	44.5	49	34.5	14	-	14.5	73	44.5	63	34.5
ø25	15	62.5	47.5	52.5	37.5	17.5	-	15	80	47.5	70	37.5
ø32	17	70	53	60 (70)	43 (53)	23.5	M14×1.5	15	91.5	53	81.5 (91.5)	43 (53)
ø40	17	76.5	59.5	66.5 (76.5)	49.5 (59.5)	23.5	M14×1.5	15	98	59.5	88 (98)	49.5 (59.5)
ø50	18	78.5	60.5	68.5 (78.5)	50.5 (60.5)	28.5	M18×1.5	15	104	60.5	94 (104)	50.5 (60.5)
ø63	18	84	66	74 (84)	56 (66)	28.5	M18×1.5	15	109.5	66	99.5 (109.5)	56 (66)
ø80	20	93.5	73.5	83.5 (93.5)	63.5 (73.5)	35.5	M22×1.5	18	127	73.5	117 (127)	63.5 (73.5)
ø100	22	105	83	95 (105)	73 (83)	35.5	M26×1.5	18	136.5	83	126.5 (136.5)	73 (83)

*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

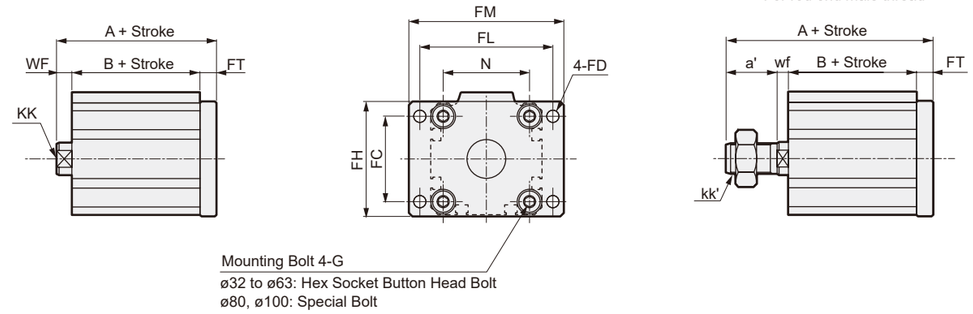
Outline Dimension Drawing (Bore Size: ø20 to ø100)

● Head Side Flange (FB)
SSD2-KG5(L)-20 to 100-FB

· ø20, ø25



· ø32 to ø100



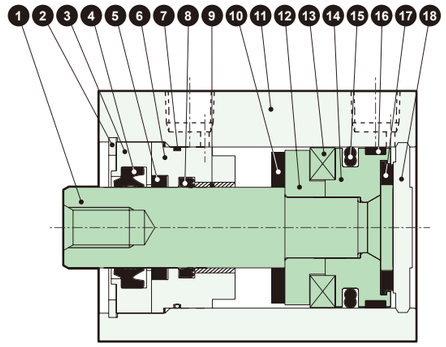
Code	Common dimension								
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N
ø20	-	6.6	39	48	60	8	M6×16	-	25.5
ø25	-	6.6	42	52	64	8	M6×16	-	28
ø32	34	5.5	48	56	65	8	M6×16	M8 depth 13	34
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94

Code	For female thread					For male thread						
Bore Size (mm)	WF	Dimension with switch		Dimension without switch		a'	kk'	wf	Dimension with switch		Dimension without switch	
		A	B	A *1	B *1				A	B	A *1	B *1
ø20	4.5	57	44.5	47	34.5	14	-	4.5	71	44.5	61	34.5
ø25	5	60.5	47.5	50.5	37.5	17.5	-	5	78	47.5	68	37.5
ø32	7	68	53	58 (68)	43 (53)	23.5	M14×1.5	5	89.5	53	79.5 (89.5)	43 (53)
ø40	7	74.5	59.5	64.5 (74.5)	49.5 (59.5)	23.5	M14×1.5	5	96	59.5	86 (96)	49.5 (59.5)
ø50	8	77.5	60.5	67.5 (77.5)	50.5 (60.5)	28.5	M18×1.5	5	103	60.5	93 (103)	50.5 (60.5)
ø63	8	83	66	73 (83)	56 (66)	28.5	M18×1.5	5	108.5	66	98.5 (108.5)	56 (66)
ø80	10	94.5	73.5	84.5 (94.5)	63.5 (73.5)	35.5	M22×1.5	8	128	73.5	118 (128)	63.5 (73.5)
ø100	12	106	83	96 (106)	73 (83)	35.5	M26×1.5	8	137.5	83	127.5 (137.5)	73 (83)

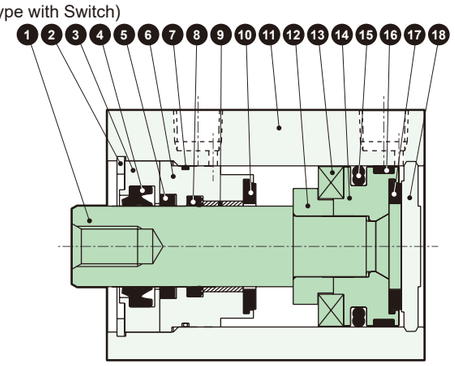
*1: Dimensions in ( ) for codes A and B are values when exceeding 50 strokes.

Internal Structure Diagram/Material (Bore size: ø20 to ø50)

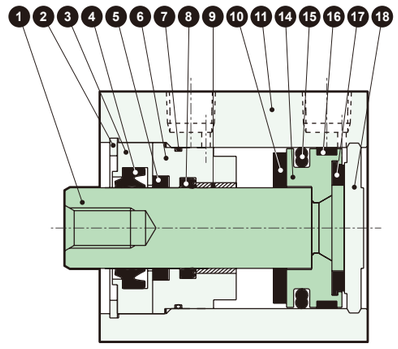
● SSD2-KG5L-20·25
(Double Acting, High Load, Environmentally Resistant Scraper Type with Switch)



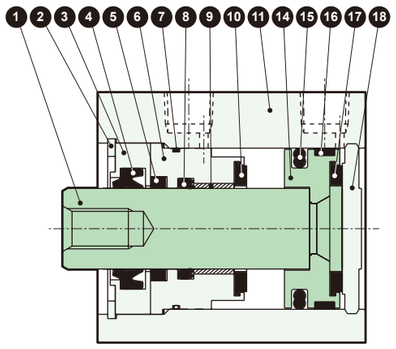
● SSD2-KG5L-32 to 50
(Double Acting, High Load, Environmentally Resistant Scraper Type with Switch)



● SSD2-KG5-20·25
(Double Acting, High Load, Environmentally Resistant Scraper Type)



● SSD2-KG5-32 to 50
(Double Acting, High Load, Environmentally Resistant Scraper Type)

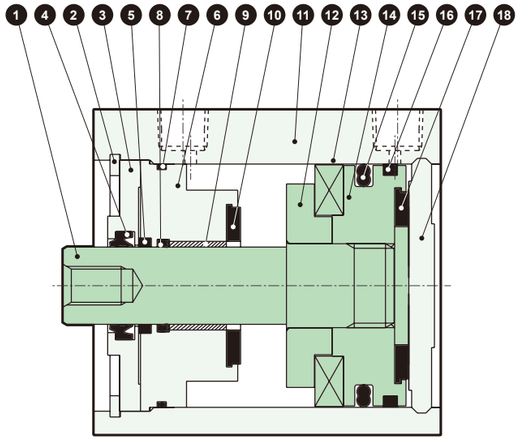


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20, ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	10	Cushion rubber R	Urethane Rubber	
				11	Cylinder Body	Aluminum Alloy	Hard Anodized
2	C-type retaining ring	Steel	Zinc phosphate	12	Spacer	Special Resin	
3	Rod metal 1	Aluminum Alloy	Chromate	13	Magnet	Plastic	
4	Scraper	Nitrile Rubber		14	Piston	Aluminum Alloy	Chromate
5	Lube keeper	Special rubber		15	Piston Packing	Nitrile Rubber	
6	Rod metal 2	Aluminum Alloy	Alumite	16	Wear Ring	Polyacetal	
7	Rod metal gasket	Nitrile Rubber		17	Cushion rubber H	Urethane Rubber	
8	Rod Packing	Nitrile Rubber		18	Cover	ø20, ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
9	Bushing	Bearing Alloy					

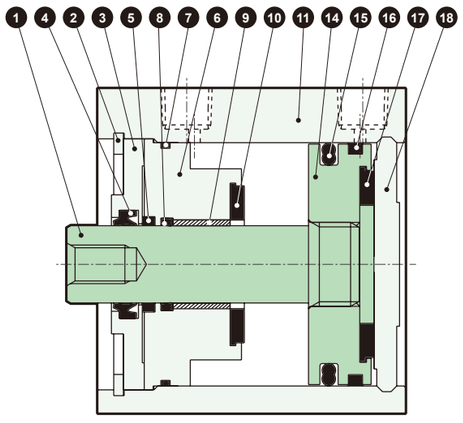
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

● SSD2-KG5L-63 to 100 (Double Acting, High Load, Environmentally Resistant Scraper Type with Switch)



● SSD2-KG5-63 to 100 (Double Acting, High Load, Environmentally Resistant Scraper Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	10	Cushion rubber R	Urethane Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	11	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod metal 1	Aluminum Alloy	Chromate	12	Spacer	Aluminum Alloy	Chromate
4	Scraper	Nitrile Rubber		13	Magnet	Plastic	
5	Lube keeper	Special rubber		14	Piston	Aluminum Alloy	Chromate
6	Rod metal 2	Aluminum Alloy	Chromate	15	Piston Packing	Nitrile Rubber	
7	Rod metal gasket	Nitrile Rubber		16	Wear Ring	Polyacetal	
8	Rod Packing	Nitrile Rubber		17	Cushion rubber H	Urethane Rubber	
9	Bushing	Bearing Alloy		18	Cover	Aluminum Alloy	Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

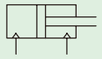


Compact Cylinder
Double Acting, Single Rod with Strong Magnetic Field Resistant Switch

SSD2-L4 Series

● Bore size: ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-L4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶ Bore Size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting type	❼ Accessories
SSD2-L4	50	40	V0	D	N	LB	I

❶Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 100	Every 1 mm

*1: For details, refer to Appendix Table 1 on the next page.
*2: For the number of switches attachable and minimum stroke, refer to P. 270.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Contents
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹Number of Switches

Code	Contents
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Contents	
Blank	Rod end female thread	
N	Rod end male thread	

❻Mounting Type

Mounting brackets are included to the product for shipment.

	Code	Contents	
	Blank	Without mounting bracket	
*1	LB	Axial Foot Type (Double Side)	
	CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 273, P. 274. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❼Accessories

Code	Contents	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ❺Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 40	50	63	80	100
Standard Stroke	20	●	●	●	●	●
	25	●	●	●	●	●
	30	●	●	●	●	●
	35	●	●	●	●	●
	40	●	●	●	●	●
	45	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
Min. Stroke (mm)		20				
Maximum Stroke (mm)		100				
Intermediate Stroke *1		Every 1 mm				

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-L4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

❸ Switch Model No.

Specifications

Item	SSD2-L4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.1		0.05		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.092	0.1	0.12	0.27	0.56

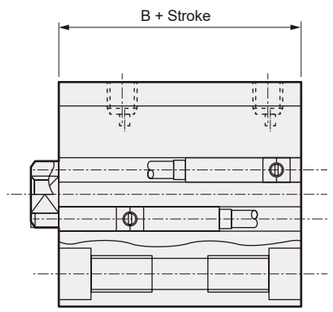
Number of Switches Mounted and Min. Stroke (mm)

Number of Switches	1	2
Switch Model No. / Bore Size (mm)	V0	
ø40	20	20
ø50		
ø63		
ø80		
ø100		

About Intermediate Stroke

● SSD2-L4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	40 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-L4-40-38 A +2 mm spacer is added to the standard cylinder SSD2-L4-40-40 to make it 38 mm. B + Stroke = 49.5 + 40 = 89.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	20	25	30	35	40	45	50	75	100
ø40	493	520	546	573	599	626	652	785	917
ø50	757	799	841	883	925	967	1009	1219	1429
ø63	1089	1145	1200	1256	1311	1367	1422	1700	1977
ø80	1822	1909	1996	2083	2170	2257	2344	2779	3214
ø100	2665	2779	2892	3006	3119	3233	3346	3914	4481

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	1.56×10^{2}	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	1.40×10^{2}	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	2.51×10^{2}	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	2.27×10^{2}	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	3.93×10^{2}	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	3.57×10^{2}	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

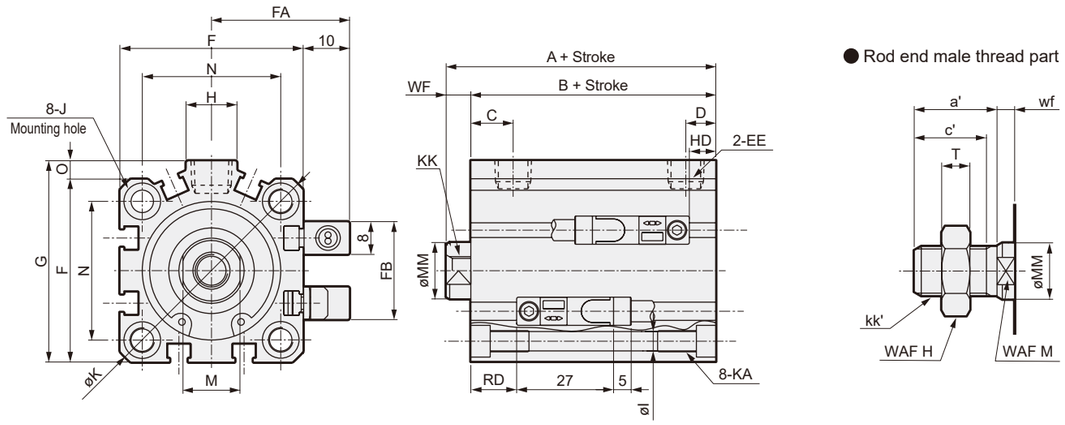
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

● SSD2-L4-40 to 100



● Rod end male thread part

Code / Bore Size (mm)	A *1	B *1	C	D	EE	F	FA	FB	G	H	I	J
ø40	56.5	49.5	12	8.5	Rc1/8	52	36	31	57	15	5.5	Counterbore ø9 depth 5.5
ø50	58.5	50.5	10.5	10.5	Rc1/4	64	42	32	71	18	6.9	Counterbore ø11 depth 6.5
ø63	64	56	13	11	Rc1/4	77	48.5	32	84	23	8.7	Counterbore ø14 depth 9
ø80	73.5	63.5	16	13	Rc3/8	98	59	32	104	31	10.5	Counterbore ø17.5 depth 11
ø100	85	73	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11

Code / Bore Size (mm)	K	KA	KK	M	MM	N	O	WF	HD	RD
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	7	7.5	13
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	8	8.5	13
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	8	13.5	13.5
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	10	18.5	16
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12	24	20

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 23 mm, enter the standard stroke of 25 mm for calculation.

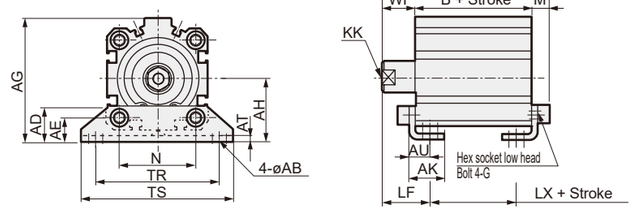
***2: For outline dimension drawings of individual accessories, refer to P. 34.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing

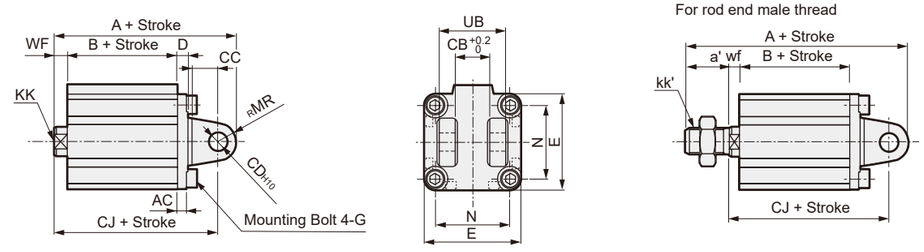
● Axial Foot (LB)
SSD2-L4-40 to 100-LB



Code / Bore Size (mm)	Common dimension AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

Code / Bore Size (mm)	For female thread WF	LF	A	B	LX	For male thread a'	kk'	wf	LF	A	B
ø40	17	25	73.7	49.5	65.5	23.5	M14×1.5	15	23	95.2	49.5
ø50	18	29.5	76.7	50.5	73.5	28.5	M18×1.5	15	26.5	102.7	50.5
ø63	18	31	83.2	56	82	28.5	M18×1.5	15	28	108.7	56
ø80	20	35	95	63.5	93.5	35.5	M22×1.5	18	33	128.5	63.5
ø100	22	39	108	73	107	35.5	M26×1.5	18	35	139.5	73

● Double Knuckle Clevis (CB)
SSD2-L4-40 to 100-CB

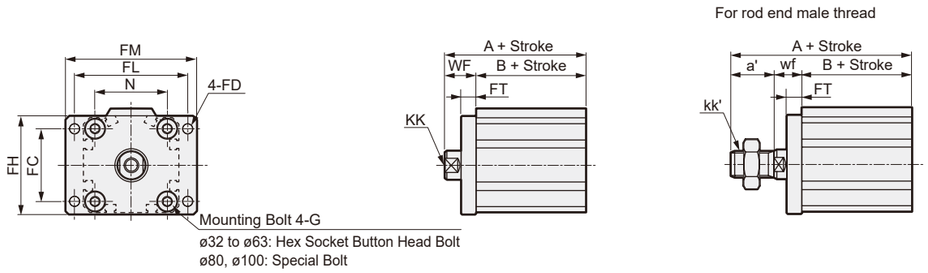


Code / Bore Size (mm)	Common dimension AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64

Code / Bore Size (mm)	For female thread WF	A	B	CJ	For male thread a'	kk'	wf	A	B	CJ
ø40	7	88.5	49.5	78.5	23.5	M14×1.5	5	110	49.5	76.5
ø50	8	100.5	50.5	86.5	28.5	M18×1.5	5	126	50.5	83.5
ø63	8	108	56	94	28.5	M18×1.5	5	133.5	56	91
ø80	10	129.5	63.5	111.5	35.5	M22×1.5	8	163	63.5	109.5
ø100	12	152	73	130	35.5	M26×1.5	8	183.5	73	126

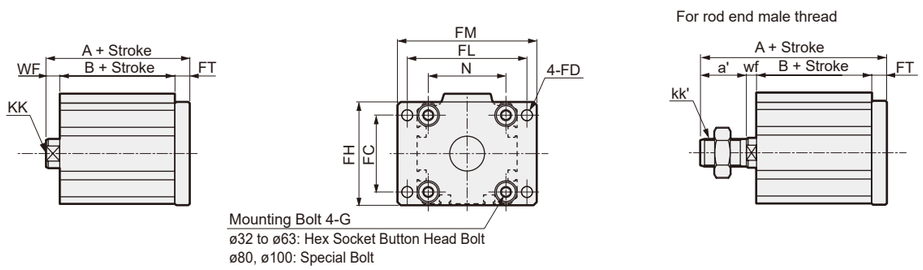
Outline Dimension Drawing

● Rod Side Flange (FA)
SSD2-L4-40 to 100-FA



Code	Common dimension									For female thread			For male thread				
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF	A	B	a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	17	66.5	49.5	23.5	M14×1.5	15	88	49.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	18	68.5	50.5	28.5	M18×1.5	15	94	50.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	18	74	56	28.5	M18×1.5	15	99.5	56
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	20	83.5	63.5	35.5	M22×1.5	18	117	63.5
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	22	95	73	35.5	M26×1.5	18	126.5	73

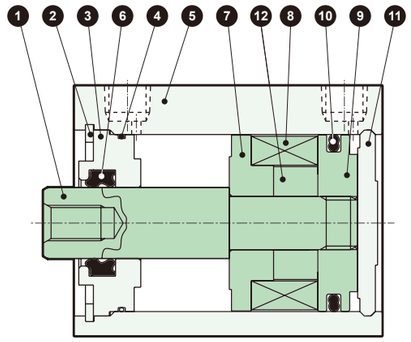
● Head Side Flange (FB)
SSD2-L4-40 to 100-FB



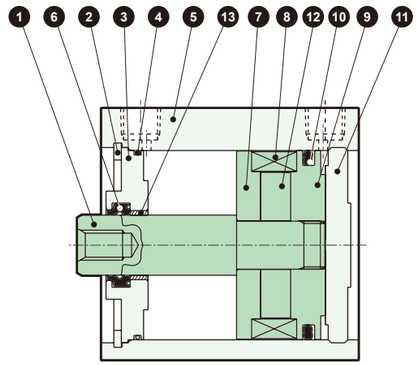
Code	Common dimension									For female thread			For male thread				
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF	A	B	a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	7	64.5	49.5	23.5	M14×1.5	5	86	49.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	8	67.5	50.5	28.5	M18×1.5	5	93	50.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	8	73	56	28.5	M18×1.5	5	98.5	56
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	10	84.5	63.5	35.5	M22×1.5	8	118	63.5
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	12	96	73	35.5	M26×1.5	8	127.5	73

Internal Structure Diagram/Material

● SSD2-L4-40, 50 (Double Acting with Strong Magnetic Field Resistant Switch)



● SSD2-L4-63 to 100 (Double Acting with Strong Magnetic Field Resistant Switch)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	7	Spacer	Aluminum Alloy	Chromate
2	C-type retaining ring	Stainless Steel		8	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	ø40, ø50: Alumite ø63 to ø100: Chromate	9	Piston	Aluminum Alloy	Chromate
				10	Piston Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		11	Cover	Aluminum Alloy	Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized	12	Collar	Aluminum Alloy	
6	Rod Packing	Nitrile Rubber		13	Bushing	Bearing Alloy	ø63 to ø100 only

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

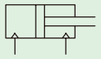


Compact Cylinder
Double Acting, High Load Type with Switch for Strong Magnetic Field

SSD2-KL4 Series

● Bore size: ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-KL4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶ Bore Size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting type	❼ Accessories
SSD2-KL4	50	40	V0	D	N	LB	I

❶ Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 100	Every 1 mm

*1: For details, refer to Appendix Table 1 on the next page.
*2: For the number of switches attachable and minimum stroke, refer to P. 278.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Contents
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹ Number of Switches

Code	Contents
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺ Option

Code	Contents	
Blank	Rod end female thread	
N	Rod end male thread	

❻ Mounting Type

Mounting brackets are included to the product for shipment.

	Code	Contents	
	Blank	Without mounting bracket	
*1	LB	Axial Foot Type (Double Side)	
	CB	Double Clevis Type (Pin and Retaining Ring Attached)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	

*1: When LB or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 281, P. 282. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model Nos. when ordering cylinders and mounting brackets separately, please contact us.

❼ Accessories

Code	Contents	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ❺Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 40	50	63	80	100
Standard Stroke	20	●	●	●	●	●
	25	●	●	●	●	●
	30	●	●	●	●	●
	35	●	●	●	●	●
	40	●	●	●	●	●
	45	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
Min. Stroke (mm)		20				
Maximum Stroke (mm)		100				
Intermediate Stroke *1		Every 1 mm				

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-KL4-..... -XP5

Switch Single Unit Model No. Notation Method

SW - V0

SW	❸ Switch Model No.
	V0

Specifications

Item	SSD2-KL4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.1		0.05		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.63	0.98	1.56	2.51	3.92

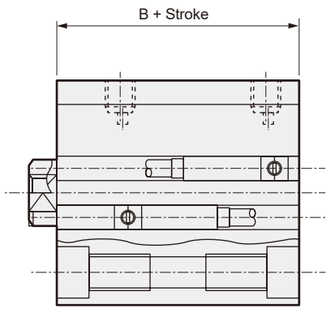
Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50		
ø63		
ø80		
ø100		

About Intermediate Stroke

● SSD2-KL4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	40 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-KL4-40-38 A +2 mm spacer is added to the standard cylinder SSD2-KL4-40-40 to make it 38 mm. B + Stroke = 59.5 + 40 = 99.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	20	25	30	35	40	45	50	75	100
ø40	546	573	599	626	652	679	705	838	970
ø50	841	883	925	967	1009	1051	1093	1303	1513
ø63	1199	1254	1309	1364	1419	1474	1529	1804	2079
ø80	1995	2082	2169	2256	2343	2430	2517	2952	3387
ø100	2893	3007	3120	3234	3347	3461	3574	4142	4709

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	1.56×10^{2}	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	1.40×10^{2}	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	2.51×10^{2}	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	2.27×10^{2}	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	3.93×10^{2}	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	3.57×10^{2}	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

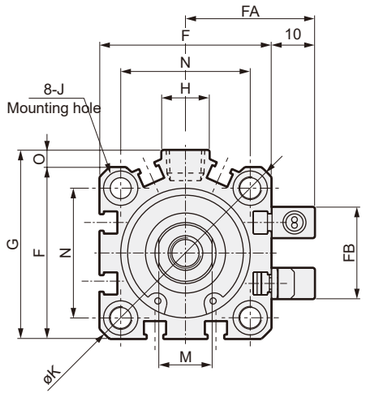
Mounting Bracket Model No. Notation Method

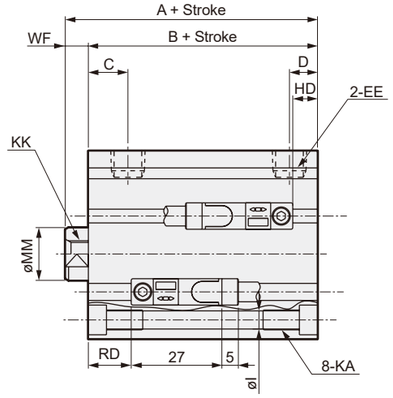
Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

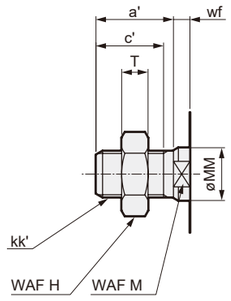
Outline Dimension Drawing

● SSD2-KL4-40 to 100





● Rod end male thread part



Code / Bore Size (mm)	A *1	B *1	C	D	EE	F	FA	FB	G	H	I	J
ø40	66.5	59.5	12	8.5	Rc1/8	52	36	31	57	15	5.5	Counterbore ø9 depth 5.5
ø50	68.5	60.5	10.5	10.5	Rc1/4	64	42	32	71	18	6.9	Counterbore ø11 depth 6.5
ø63	74	66	13	11	Rc1/4	77	48.5	32	84	23	8.7	Counterbore ø14 depth 9
ø80	83.5	73.5	16	13	Rc3/8	98	59	32	104	31	10.5	Counterbore ø17.5 depth 11
ø100	95	83	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11

Code / Bore Size (mm)	K	KA	KK	M	MM	N	O	WF	HD	RD
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	7	12.5	18
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	8	13.5	18
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	8	18.5	18.5
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	10	23.5	21
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12	29	25

*1: A + Stroke and B + Stroke dimensions for intermediate strokes are the same as the standard stroke above them.

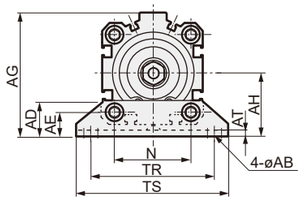
***2: For outline dimension drawings of individual accessories, refer to P. 34.**

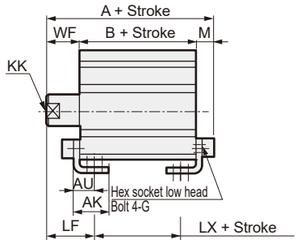
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

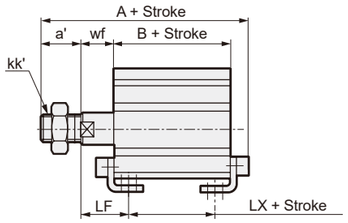
Outline Dimension Drawing

● Axial Foot (LB)
SSD2-KL4-40 to 100-LB





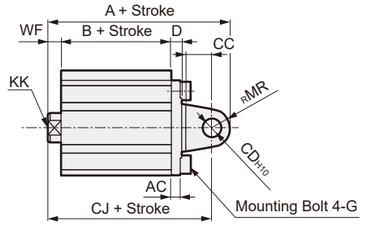
For rod end male thread

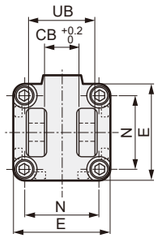


Code / Bore Size (mm)	Common dimension AB	AD	AE	AG	AH	AK	AT	AU	G	KK	N	TR	TS	M
ø40	7	18	13	64	33	18.2	3.2	11.2	M6×16	M8 depth 13	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8×20	M10 depth 15	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10×25	M10 depth 15	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12×40	M16 depth 21	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12×40	M20 depth 27	94	137	162	13

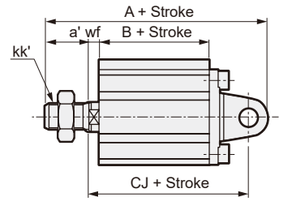
Code / Bore Size (mm)	For female thread WF	LF	A	B	LX	For male thread a'	kk'	wf	LF	A	B	LX
ø40	17	25	83.7	59.5	43.5	23.5	M14×1.5	15	23	105.2	59.5	43.5
ø50	18	29.5	86.7	60.5	37.5	28.5	M18×1.5	15	26.5	112.2	60.5	37.5
ø63	18	31	93.2	66	40	28.5	M18×1.5	15	28	118.7	66	40
ø80	20	35	105	73.5	43.5	35.5	M22×1.5	18	33	138.5	73.5	43.5
ø100	22	39	118	83	49	35.5	M26×1.5	18	35	149.5	83	49

● Double Knuckle Clevis (CB)
SSD2-KL4-40 to 100-CB





For rod end male thread

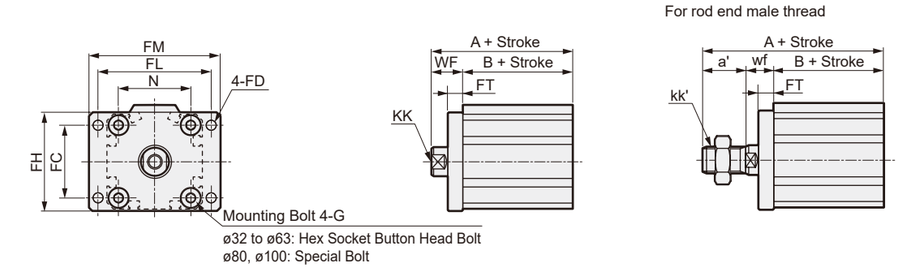


Code / Bore Size (mm)	Common dimension AC	CB	CC	CD	D	E	G	KK	MR	N	UB
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64

Code / Bore Size (mm)	For female thread WF	A	B	CJ	For male thread a'	kk'	wf	A	B	CJ
ø40	7	98.5	59.5	88.5	23.5	M14×1.5	5	120	59.5	86.5
ø50	8	110.5	60.5	96.5	28.5	M18×1.5	5	136	60.5	93.5
ø63	8	118	66	104	28.5	M18×1.5	5	143.5	66	101
ø80	10	139.5	73.5	121.5	35.5	M22×1.5	8	173	73.5	119.5
ø100	12	162	83	140	35.5	M26×1.5	8	193.5	83	136

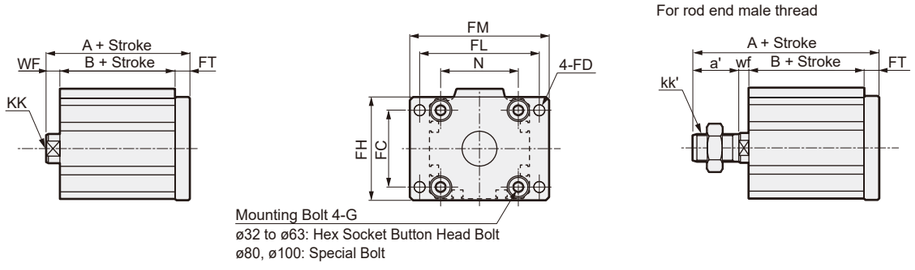
Outline Dimension Drawing

● Rod Side Flange (FA)
SSD2-KL4-40 to 100-FA



Code	Common dimension									For female thread			For male thread				
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF	A	B	a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	17	76.5	59.5	23.5	M14×1.5	15	98	59.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	18	78.5	60.5	28.5	M18×1.5	15	104	60.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	18	84	66	28.5	M18×1.5	15	109.5	66
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	20	93.5	73.5	35.5	M22×1.5	18	127	73.5
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	22	105	83	35.5	M26×1.5	18	136.5	83

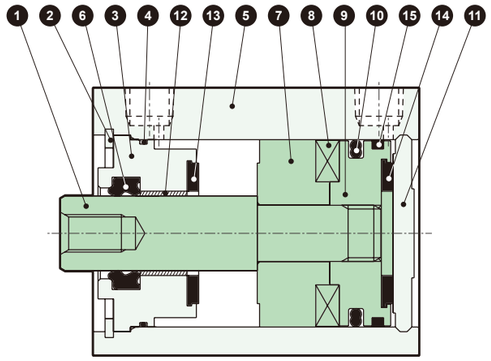
● Head Side Flange (FB)
SSD2-KL4-40 to 100-FB



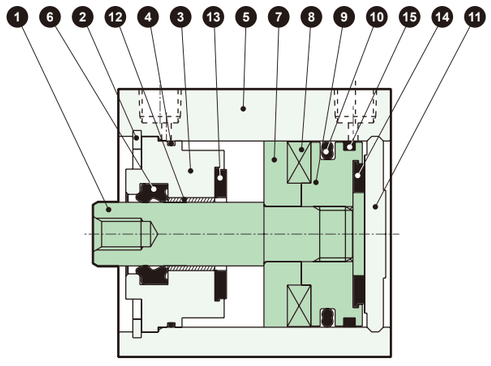
Code	Common dimension									For female thread			For male thread				
Bore Size (mm)	FC	FD	FH	FL	FM	FT	G	KK	N	WF	A	B	a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	7	74.5	59.5	23.5	M14×1.5	5	96	59.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	8	77.5	60.5	28.5	M18×1.5	5	103	60.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	8	83	66	28.5	M18×1.5	5	108.5	66
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	10	94.5	73.5	35.5	M22×1.5	8	128	73.5
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	12	106	83	35.5	M26×1.5	8	137.5	83

Internal Structure Diagram/Material

● SSD2-KL4-40, 50 (Double Acting, High Load Type with Strong Magnetic Field Resistant Switch)



● SSD2-KL4-63 to 100 (Double Acting, High Load Type with Strong Magnetic Field Resistant Switch)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	ø40, ø50: Alumite ø63 to ø100: Chromate
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø40, ø50: Special resin ø63 to ø100: Aluminum alloy	ø63 to ø100: Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
13	Cushion rubber (R)	Urethane Rubber	
14	Cushion rubber (H)	Urethane Rubber	
15	Wear Ring	Polyacetal	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

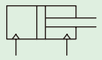


Compact Cylinder Double Acting, Single Rod With Strong Magnetic Field Resistant Switch, Coil Scraper Type

SSD2-G1L4 Series

● Bore size: ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-G1L4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶ Bore Size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting type	❼ Accessories
SSD2-G1L4	50	40	V0	D	N	LB	I

❶ Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 100	Every 1 mm

*1: For details, refer to Appendix Table 1 on the next page.
*2: For the number of switches attachable and minimum stroke, refer to P. 286.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead wire *1 Straight	Lead wire *1 L-shape	
Contact									
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Contents
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹ Number of Switches

Code	Contents
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺ Option

Code	Contents	
Blank	Rod end female thread	
N	Rod end male thread	

❻ Mounting Type

Mounting brackets are included to the product for shipment.

Code	Contents	
Blank	Without mounting bracket	
LB	Axial foot type (both sides) (Custom product)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
FA	Rod side flange type (Custom product)	
FB	Head Side Flange Type	

❼ Accessories

Code	Contents	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ❺Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore 40	50	63	80	100
Standard Stroke	20	●	●	●	●	●
	25	●	●	●	●	●
	30	●	●	●	●	●
	35	●	●	●	●	●
	40	●	●	●	●	●
	45	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
Min. Stroke (mm)		20				
Maximum Stroke (mm)		100				
Intermediate Stroke *1		Every 1 mm				

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD2-G1L4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

❸ Switch Model No.

Specifications

Item	SSD2-G1L4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.15		0.1		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.092	0.1	0.12	0.27	0.56

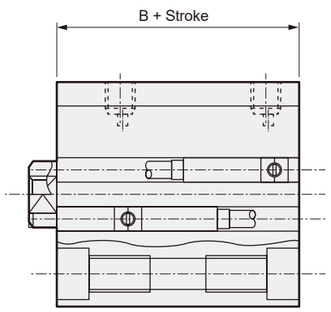
Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50		
ø63		
ø80		
ø100		

About Intermediate Stroke

● SSD2-G1L4 Series

Item	Standard Product Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	40 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-G1L4-40-38 A +2 mm spacer is added to the standard cylinder SSD2-G1L4-40-40 to make it 38 mm. B + Stroke = 49.5 + 40 = 89.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	20	25	30	35	40	45	50	75	100
ø40	575	602	628	655	681	708	734	867	999
ø50	876	918	960	1002	1044	1086	1128	1338	1548
ø63	1240	1296	1351	1407	1462	1518	1573	1851	2128
ø80	2074	2161	2248	2335	2422	2509	2596	3031	3466
ø100	3000	3114	3227	3341	3454	3568	3681	4249	4816

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

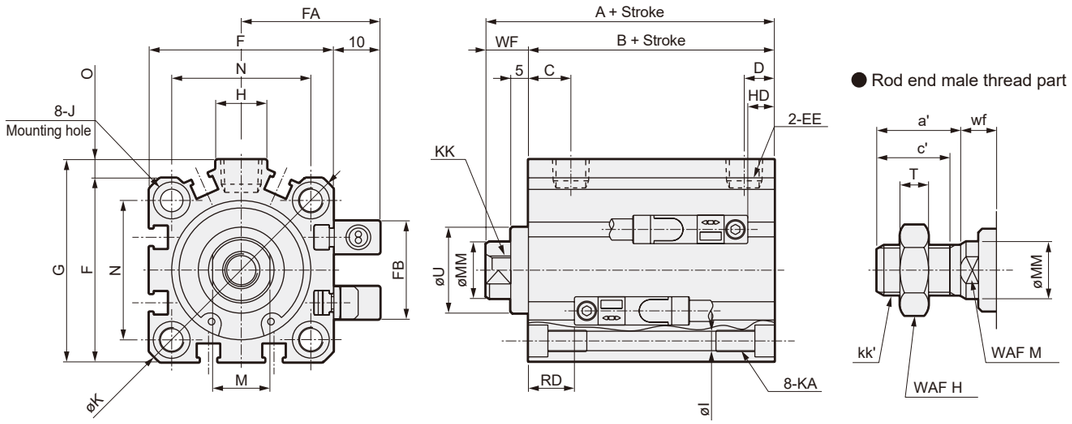
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Flange (FB)	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

● SSD2-G1L4-40 to 100



● Rod end male thread part

Code / Bore Size (mm)	A *1	B *1	C	D	EE	F	FA	FB	G	H	I	J
ø40	61.5	49.5	12	8.5	Rc1/8	52	36	31	57	15	5.5	9 Counterbore depth 5.5
ø50	63.5	50.5	10.5	10.5	Rc1/4	64	42	32	71	18	6.9	11 Counterbore Depth 6.5
ø63	69	56	13	11	Rc1/4	77	48.5	32	84	23	8.7	14 Counterbore depth 9
ø80	78.5	63.5	16	13	Rc3/8	98	59	32	104	31	10.5	17.5 Counterbore depth 11
ø100	90	73	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	17.5 Counterbore depth 11

Code / Bore Size (mm)	K	KA	KK	M	MM	N	O	U	WF	HD	RD
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	28 h9	12	7.5	13
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	35 h9	13	8.5	13
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	35 h9	13	13.5	13.5
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	43 h9	15	18.5	16
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	59 h9	17	24	20

*1: A + Stroke and B + Stroke dimensions for intermediate strokes are the same as the standard stroke above them.

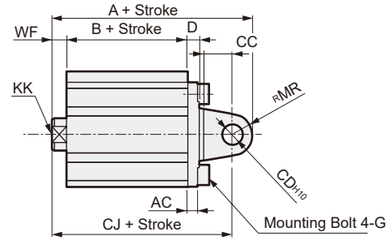
***2: For outline dimension drawings of individual accessories, refer to P. 34.**

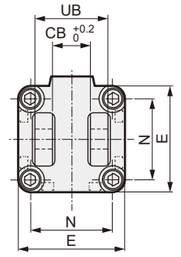
● Rod end male thread part

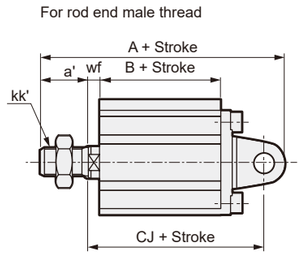
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø40	23.5	20.5	22	M14×1.5	14	16	8	10
ø50	28.5	26	27	M18×1.5	17	20	11	10
ø63	28.5	26	27	M18×1.5	17	20	11	10
ø80	35.5	32.5	32	M22×1.5	22	25	13	13
ø100	35.5	32.5	41	M26×1.5	27	30	16	13

Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-G1L4-40 to 100-CB

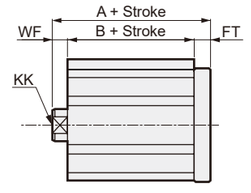


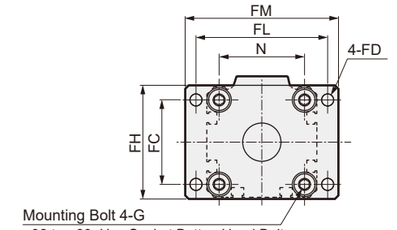


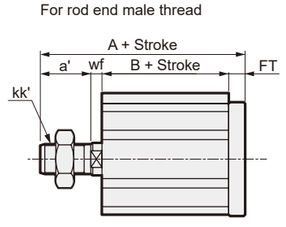


Code / Bore Size (mm)	Common dimension AC	CB	CC	CD	D	E	G	KK	MR	N	UB	For female thread WF	A	B	CJ	For male thread a'	kk'	wf	A	B	CJ
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36	7	93.5	49.5	83.5	23.5	M14×1.5	5	115	49.5	81.5
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44	8	105.5	50.5	91.5	28.5	M18×1.5	5	131	50.5	88.5
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44	8	113	56	99	28.5	M18×1.5	5	138.5	56	96
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56	10	134.5	63.5	116.5	35.5	M22×1.5	8	168	63.5	114.5
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64	12	157	73	135	35.5	M26×1.5	8	188.5	73	131

● Head Side Flange (FB)
SSD2-G1L4-40 to 100-FB



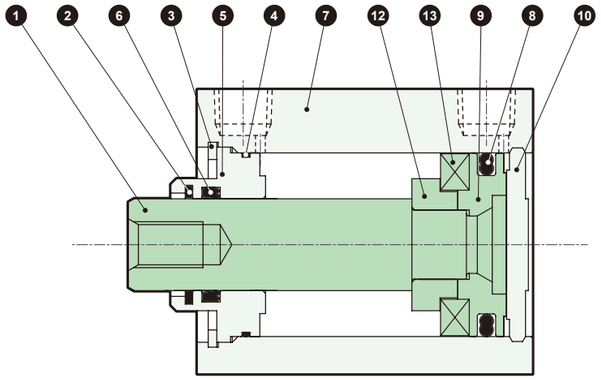




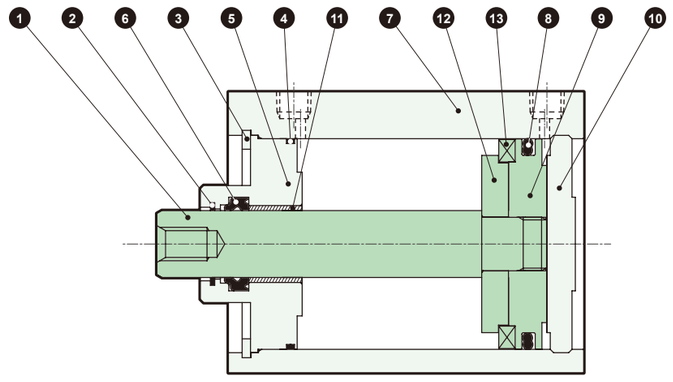
Code / Bore Size (mm)	Common dimension FC	FD	FH	FL	FM	FT	N	G	KK	For female thread WF	A	B	For male thread a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	40	M6×16	M8 depth 13	7	69.5	49.5	23.5	M14×1.5	5	91	49.5
ø50	50	6.6	67	76	89	9	50	M8×20	M10 depth 15	8	72.5	50.5	28.5	M18×1.5	5	98	50.5
ø63	60	9	80	92	108	9	60	M10×25	M10 depth 15	8	78	56	28.5	M18×1.5	5	103.5	56
ø80	77	11	99	116	134	11	77	M12×40	M16 depth 21	10	89.5	63.5	35.5	M22×1.5	8	123	63.5
ø100	94	11	117	136	154	11	94	M12×40	M20 depth 27	12	101	73	35.5	M26×1.5	8	132.5	73

Internal Structure Diagram/Material

● SSD2-G1L4-40, 50 (Double Acting with Strong Magnetic Field Resistant Switch, Coil Scraper Type)



● SSD2-G1L4-63 to 100 (Double Acting with Strong Magnetic Field Resistant Switch, Coil Scraper Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Piston Packing	Nitrile Rubber	
2	Coil scraper	Copper Alloy		9	Piston	Aluminum Alloy	Chromate
3	C-type retaining ring	Steel	Zinc phosphate	10	Cover	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		11	Bushing	Bearing Alloy	
5	Rod Metal	Aluminum Alloy	Chromate	12	Spacer	Aluminum Alloy	
6	Rod Packing	Nitrile Rubber		13	Magnet	Plastic	
7	Cylinder Body	Aluminum Alloy	Hard Anodized				

For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

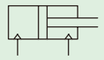


Compact Cylinder Double Acting, High Load Type with Strong Magnetic Field Resistant Switch, Coil Scraper Type

SSD2-KG1L4 Series

● Bore size: ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD2-KG1L4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶ Bore Size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting type	❼ Accessories
SSD2-KG1L4	50	40	V0	D	N	LB	I

❶ Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 100	Every 1 mm

*1: For details, refer to Appendix Table 1 on the next page.
*2: For the number of switches attachable and minimum stroke, refer to P. 294.
*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸ Switch Model No.:

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Contact									
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model Nos. are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Contents
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹ Number of Switches

Code	Contents
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺ Option

Code	Contents	
Blank	Rod end female thread	
N	Rod end male thread	

❻ Mounting Type

Mounting brackets are included to the product for shipment.

Code	Contents	
Blank	Without mounting bracket	
LB	Axial foot type (both sides) (Custom product)	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
FA	Rod side flange type (Custom product)	
FB	Head Side Flange Type	

❼ Accessories

Code	Contents	
I	Single Knuckle	
Y	Double Knuckle (pin and retaining ring included)	

*1: ❺Optionally, N: Available only when rod end male thread is selected.
*2: "I" and "Y" cannot be selected at the same time.

Appendix Table 1

Stroke (mm)		Applicable Bore				
		40	50	63	80	100
Standard Stroke	20	●	●	●	●	●
	25	●	●	●	●	●
	30	●	●	●	●	●
	35	●	●	●	●	●
	40	●	●	●	●	●
	45	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
Minimum Stroke (mm)		20				
Maximun Stroke (mm)		100				
Intermediate Stroke *1		Every 1 mm				

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

*For combination of variations and options, refer to P. 8, 9.

About Custom Product Specifications

For details, refer to P. 318 to 321.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD2-KG1L4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

SW	❸ Switch Model No.
	V0

Specifications

Item	SSD2-KG1L4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.15		0.1		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.63	0.98	1.56	2.51	3.92

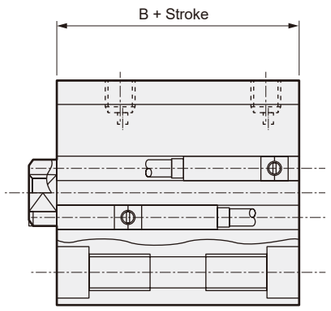
Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50		
ø63		
ø80		
ø100		

About Intermediate Stroke

● SSD2-KG1L4 Series

Item	Standard Product	
	Spacer type on standard stroke body	
Model No. indication	Refer to model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.	
Stroke Range	Bore Size	Stroke Range
	40 to 100	1 to 99
Model No. Indication Example	Model No.: SSD2-KG1L4-40-38 A +2 mm spacer is added to the standard cylinder SSD2-KG1L4-40-40 to make it 38 mm. B + Stroke = 59.5 + 40 = 99.5	



Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Stroke (mm) / Bore Size (mm)	20	25	30	35	40	45	50	75	100
ø40	628	655	681	708	734	761	787	920	1052
ø50	960	1002	1044	1086	1128	1170	1212	1422	1632
ø63	1350	1406	1461	1517	1572	1628	1683	1961	2238
ø80	2247	2334	2421	2508	2595	2682	2769	3204	3639
ø100	3228	3342	3455	3569	3682	3796	3909	4477	5044

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

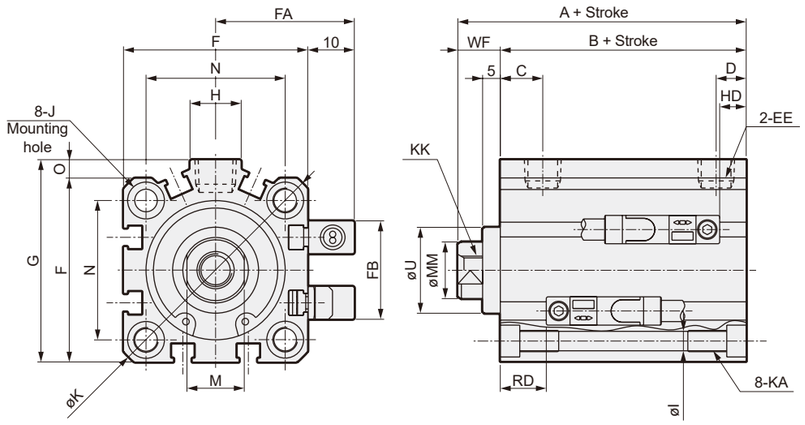
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Flange (FB)	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Double Clevis (CB)	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

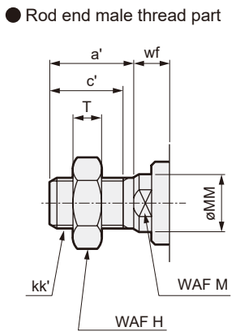
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

● SSD2-KG1L4-40 to 100



● Rod end male thread part



Code / Bore Size (mm)	A *1	B *1	C	D	EE	F	FA	FB	G	H	I	J
ø40	71.5	59.5	12	8.5	Rc1/8	52	36	31	57	15	5.5	Counterbore ø9 depth 5.5
ø50	73.5	60.5	10.5	10.5	Rc1/4	64	42	32	71	18	6.9	Counterbore ø11 depth 6.5
ø63	79	66	13	11	Rc1/4	77	48.5	32	84	23	8.7	Counterbore ø14 depth 9
ø80	88.5	73.5	16	13	Rc3/8	98	59	32	104	31	10.5	Counterbore ø17.5 depth 11
ø100	100	83	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11

Code / Bore Size (mm)	K	KA	KK	M	MM	N	O	U	WF	HD	RD
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	28 h9	12	12.5	18
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	35 h9	13	13.5	18
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	35 h9	13	18.5	18.5
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	43 h9	15	23.5	21
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	59 h9	17	29	25

*1: A + Stroke and B + Stroke dimensions for intermediate strokes are the same as the standard stroke above them.

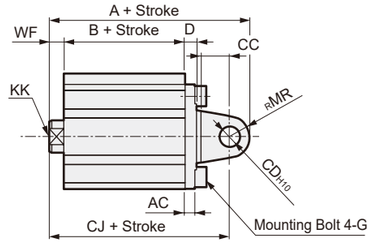
***2: For outline dimension drawings of individual accessories, refer to P. 34.**

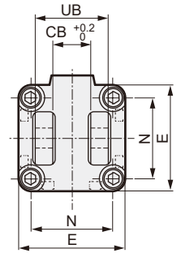
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø40	23.5	20.5	22	M14×1.5	14	16	8	10
ø50	28.5	26	27	M18×1.5	17	20	11	10
ø63	28.5	26	27	M18×1.5	17	20	11	10
ø80	35.5	32.5	32	M22×1.5	22	25	13	13
ø100	35.5	32.5	41	M26×1.5	27	30	16	13

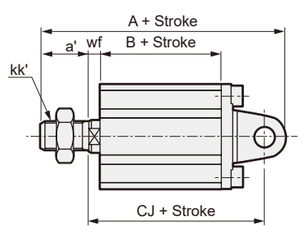
Outline Dimension Drawing

● Double Knuckle Clevis (CB)
SSD2-KG1L4-40 to 100-CB



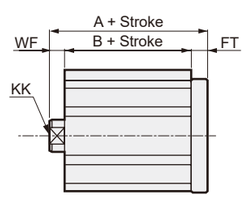


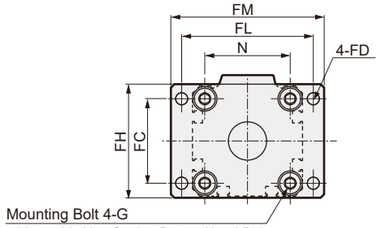
For rod end male thread



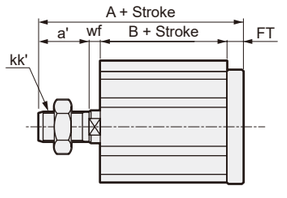
Code / Bore Size (mm)	Common dimension AC	CB	CC	CD	D	E	G	KK	MR	N	UB	For female thread WF	A	B	CJ	For male thread a'	kk'	wf	A	B	CJ
ø40	5	18.2	14	10	6	52	M6×16	M8 depth 13	10	40	36	7	103.5	59.5	93.5	23.5	M14×1.5	5	125	59.5	91.5
ø50	6	22.2	20	14	7	64	M8×20	M10 depth 15	14	50	44	8	115.5	60.5	101.5	28.5	M18×1.5	5	141	60.5	98.5
ø63	7	22.2	20	14	8	77	M10×25	M10 depth 15	14	60	44	8	123	66	109	28.5	M18×1.5	5	148.5	66	106
ø80	9	28.2	27	18	10	98	M12×40	M16 depth 21	18	77	56	10	144.5	73.5	126.5	35.5	M22×1.5	8	178	73.5	124.5
ø100	12	32.2	31	22	13	117	M12×40	M20 depth 27	22	94	64	12	167	83	145	35.5	M26×1.5	8	198.5	83	141

● Head Side Flange (FB)
SSD2-KG1L4-40 to 100-FB





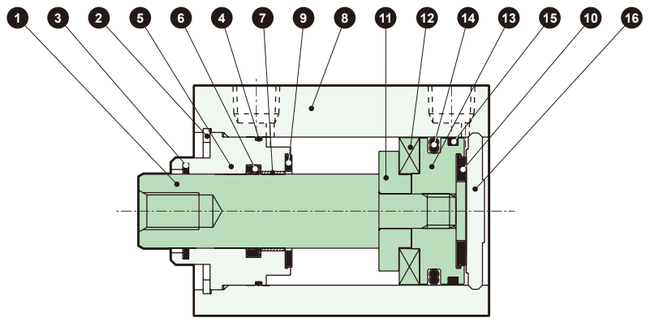
For rod end male thread



Code / Bore Size (mm)	Common dimension FC	FD	FH	FL	FM	FT	G	KK	N	For female thread WF	A	B	For male thread a'	kk'	wf	A	B
ø40	40	5.5	54	62	72	8	M6×16	M8 depth 13	40	7	79.5	59.5	23.5	M14×1.5	5	101	59.5
ø50	50	6.6	67	76	89	9	M8×20	M10 depth 15	50	8	82.5	60.5	28.5	M18×1.5	5	108	60.5
ø63	60	9	80	92	108	9	M10×25	M10 depth 15	60	8	88	66	28.5	M18×1.5	5	113.5	66
ø80	77	11	99	116	134	11	M12×40	M16 depth 21	77	10	99.5	73.5	35.5	M22×1.5	8	133	73.5
ø100	94	11	117	136	154	11	M12×40	M20 depth 27	94	12	111	83	35.5	M26×1.5	8	142.5	83

Internal Structure Diagram/Material

● SSD2-KG1L4-40 to 100 (Double Acting, High Load Type with Strong Magnetic Field Resistant Switch, Coil Scraper Type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Coil scraper	Bronze alloy	
4	Rod metal gasket	Nitrile Rubber	
5	Rod Metal	ø40, ø50: Special aluminum ø63 to ø100: Aluminum alloy	ø40, ø50: Alumite ø63 to ø100: Chromate
6	Rod Packing	Nitrile Rubber	
7	Bushing	Bearing Alloy	
8	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
9	Cushion Rubber R	Urethane Rubber	
10	Cushion rubber H	Urethane Rubber	
11	Spacer	Aluminum Alloy	
12	Magnet	Plastic	
13	Piston	Aluminum Alloy	Chromate
14	Piston Packing	Nitrile Rubber	
15	Wear Ring	Polyacetal	
16	Cover	Aluminum Alloy	Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

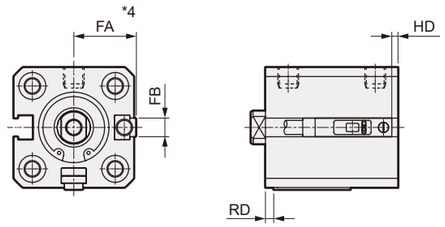
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

SSD2-□L T-type Switch Attached Outline Dimension Drawing

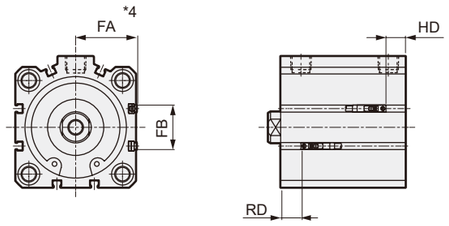
● SSD2-L, SSD2-XL, SSD2-YL, SSD2-OL, SSD2-LF

T0H/V, T5H/V, T3PH/V, T2□R3, TOY, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

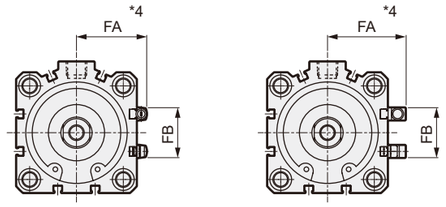
· ø16



· ø20 to ø200

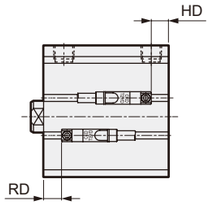


· ø20 to ø100



[For T8, T2J]

[For T1, T2YD, T2YDT]



Code	SSD2-L, SSD2-XL, SSD2-YL, SSD2-OL, SSD2-LF																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *4	FB	RD *3	HD *3	FA *4	FB	RD *3	HD *3	FA *4	FB	RD	HD	FA *4	FB	RD	HD	FA *4	FB	RD	HD
ø12	13	4.5	1.5 (3)	1.5 (0)	13	4.5	3.5 (5)	3.5 (2)	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	4	0	15	4.5	6	1	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	7.5	3	18.5	12.5	9.5	5	-	-	-	-	24.3	16	6.5	2	29.3	16	6.5	2
ø25	20.5	13.5	9.5	4	20.5	13.5	11.5	6	-	-	-	-	26.3	17	8.5	3	31.3	17	8.5	3
ø32	23	20.5	9.5	4	23	20.5	11.5	6	-	-	-	-	28.8	24	8.5	3.5	33.8	24	8.5	3.5
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	6	1	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6.5	1.5	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	7	6.5	44.8	32	11.5	11	49.8	32	11.5	11
ø80	49.5	28.5	15.5	17.5	49.5	28.5	17	19	55.3	32	9.5	11.5	55.3	32	14	16	60.3	32	14	16
ø100	59	28.5	19.5	23	59	28.5	21	24.5	64.8	32	13.5	17	64.8	32	18	21.5	69.8	32	18	21.5
ø125	71.5	44.5	35	30	71.5	44.5	36.5	31.5	77	48	29	24	77	48	33.5	28.5	82.5	48	33.5	28.5
ø140	79.5	44.5	33.5	31.5	79.5	44.5	35	33	85	48	27.5	27.5	85	48	32	30	90.5	48	32	30
ø160	89.5	48.5	39	34	89.5	48.5	40.5	35.5	95	52	33	28	95	52	37.5	32.5	100.5	52	37.5	32.5
ø180	99	-	43.5	39.5	99	-	45.5	41.5	104.5	-	37.5	33.5	104.5	-	42.5	38.5	110	-	42.5	38.5
ø200	109.5	-	45.5	44.5	109.5	-	47.5	46.5	115	-	39.5	38.5	115	-	44.5	43.5	120.5	-	44.5	43.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: ( ) dimensions are for with rubber cushion.
*4: FA dimension is for straight type lead wire.

Code	SSD2-L (Long Stroke)																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3
ø12	13	4.5	5	8.5	13	4.5	6.5	10.5	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	5	8.5	15	4.5	6.5	10.5	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	16 (10)	6.5 (12.5)	18.5	12.5	17.5 (12)	8.5 (14)	24.3	16	9.5 (4)	0 (6.5)	24.3	16	14 (8.5)	5.5 (11)	29.3	16	14 (8.5)	5.5 (11)
ø25	20.5	13.5	19.5 (12)	6 (14)	20.5	13.5	21 (14)	8 (15.5)	26.3	17	13 (6)	0 (8)	26.3	17	17.5 (10.5)	5 (12.5)	31.3	17	17.5 (10.5)	5 (12.5)
ø32	23	20.5	18 (10)	9 (16)	23	20.5	19.5 (12)	11 (17.5)	28.8	24	11.5 (4)	2.5 (10)	28.8	24	16 (8.5)	8 (14.5)	33.8	24	16 (8.5)	8 (14.5)
ø40	26.5	27.5	26.5 (16.5)	9.5 (19)	26.5	27.5	28 (18.5)	11 (20.5)	32.3	31	20 (10.5)	3.5 (13)	32.3	31	24.5 (15)	8 (17.5)	37.3	31	24.5 (15)	8 (17.5)
ø50	32.5	28.5	26 (17)	10 (19)	32.5	28.5	27.5 (19)	11.5 (20.5)	38.3	32	19.5 (11)	4 (13)	38.3	32	24.5 (16)	8.5 (17.5)	43.3	32	24.5 (16)	8.5 (17.5)
ø63	39	28.5	20 (14.5)	17.5 (23)	39	28.5	21.5 (16.5)	19 (24.5)	44.8	32	1.5 (.5)	11.5 (17)	44.8	32	18.5 (13.5)	16 (21.5)	49.8	32	18.5 (13.5)	16 (21.5)
ø80	49.5	28.5	24 (18.5)	22.5 (28)	49.5	28.5	25.5 (20.5)	24 (29.5)	55.3	32	17.5 (12.5)	16.5 (22)	55.3	32	22.5 (17.5)	21 (26.5)	60.3	32	22.5 (17.5)	21 (26.5)
ø100	59	28.5	28 (22.5)	28 (33.5)	59	28.5	29.5 (24.5)	29.5 (35)	64.8	32	21.5 (16.5)	22 (27.5)	64.8	32	26.5 (21.5)	26.5 (32)	69.8	32	26.5 (21.5)	26.5 (32)

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: FA dimension is for straight type lead wire.
*3: ( ) dimensions are for when ø20: 100 strokes, ø25 to ø50: 150 strokes, ø63 to ø100 exceeding 200 strokes.

SSD2-□L T-type Switch Attached Outline Dimension Drawing

● SSD2-QL-R, SSD2-QL-H, SSD2-ML, SSD2-GL

Code	SSD2-QL-R																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3	FA *2	FB	RD *3	HD *3
ø20	18.5	12.5	32 (37)	4	18.5	12.5	33.5 (38.5)	6	24.3	16	25.5 (30.5)	0	24.3	16	30 (35)	3	29.3	16	30 (35)	3
ø25	20.5	13.5	33.5 (38.5)	6.5	20.5	13.5	35 (40)	8.5	26.3	17	27 (32)	0.5	26.3	17	32 (37)	5.5	31.3	17	32 (37)	5.5
ø32	23	20.5	34	5.5	23	20.5	36	7.5	28.8	24	28	0	28.8	24	32.5	4	33.8	24	32.5	4
ø40	26.5	27.5	38	8	26.5	27.5	39.5	10	32.3	31	31.5	2	32.3	31	36.5	7	37.3	31	36.5	7
ø50	32.5	28.5	41	6.5	32.5	28.5	42.5	8.5	38.3	32	34.5	0.5	38.3	32	39.5	5.5	43.3	32	39.5	5.5
ø63	39	28.5	42	10.5	39	28.5	44	12.5	44.8	32	35.5	4	44.8	32	40.5	9	49.8	32	40.5	9
ø80	49.5	28.5	66 (73.5)	19 (24)	49.5	28.5	68 (75.5)	21 (26)	55.3	32	60 (67.5)	12.5 (17.5)	55.3	32	64.5 (72)	17.5 (22.5)	60.3	32	64.5 (72)	17.5 (22.5)
ø100	59	28.5	70 (77.5)	24.5 (29.5)	59	28.5	72 (79.5)	26.5 (31.5)	64.8	32	64 (71.5)	18 (23)	64.8	32	68.5 (76)	23 (28)	69.8	32	68.5 (76)	23 (28)

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: FA dimension is for straight type lead wire.
*3: ( ) dimensions are for when ø20, ø25: 25 strokes, ø80, ø100 exceeding 50 strokes.
*4: T8 switches cannot be mounted on the fall prevention mechanism surface.

Code	SSD2-QL-H																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *2	FB	RD *3	HD	FA *2	FB	RD *3	HD	FA *2	FB	RD *3	HD	FA *2	FB	RD *3	HD	FA *2	FB	RD *3	HD
ø20	18.5	12.5	8.5 (13.5)	34	18.5	12.5	10.5 (15.5)	35.5	24.3	16	2.5 (7.5)	27.5	24.3	16	7.5 (12.5)	32.5	29.3	16	7.5 (12.5)	32.5
ø25	20.5	13.5	10 (15)	35.5	20.5	13.5	12 (17)	37.5	26.3	17	3.5 (8.5)	29.5	26.3	17	8.5 (13.5)	34	31.3	17	8.5 (13.5)	34
ø32	23	20.5	9	38	23	20.5	11	40	28.8	24	2.5	32	28.8	24	7.5	36.5	33.8	24	7.5	36.5
ø40	26.5	27.5	10.5	46	26.5	27.5	12	48	32.3	31	4	40	32.3	31	9	44.5	37.3	31	9	44.5
ø50	32.5	28.5	11	46	32.5	28.5	12.5	48	38.3	32	4.5	40	38.3	32	9	45	43.3	32	9	45
ø63	39	28.5	12	46.5	39	28.5	14	48.5	44.8	32	5.5	40	44.8	32	10.5	45	49.8	32	10.5	45
ø80	49.5	28.5	14.5 (19.5)	78	49.5	28.5	16 (21)	80	55.3	32	8 (13)	72	55.3	32	13 (18)	76.5	60.3	32	13 (18)	76.5
ø100	59	28.5	28 (33)	84.5	59	28.5	29.6 (34.5)	86.5	64.8	32	21 (26)	78	64.8	32	26 (31)	83	69.8	32	26 (31)	83

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: FA dimension is for straight type lead wire.
*3: ( ) dimensions are for when ø20, ø25: 25 strokes, ø80, ø100 exceeding 50 strokes.
*4: T8 switches cannot be mounted on the fall prevention mechanism surface.

Code	SSD2-ML																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	7.5	0	13	4.5	9	2	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	7	0	15	4.5	8.5	2.5	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	11.5	3	18.5	12.5	13	4.5	-	-	-	-	24.3	16	10	1.5	29.3	16	10	1.5
ø25	20.5	13.5	14.5	3	20.5	13.5	16	4.5	-	-	-	-	26.3	17	13	1.5	31.3	17	13	1.5
ø32	23	20.5	19	4.5	23	20.5	20.5	5	-	-	-	-	28.8	24	18	3	33.8	24	18	3
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	6	1	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6.5	1.5	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	7	6.5	44.8	32	11.5	11	49.8	32	11.5	11

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

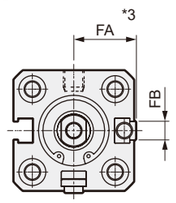
Code	SSD2-GL																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø20	18.5	12.5	17.5	3	18.5	12.5	19.5	5	-	-	-	-	24.3	16	16.5	2	29.3	16	16.5	2
ø25	20.5	13.5	19.5	4	20.5	13.5	21.5	6	-	-	-	-	26.3	17	18.5	3	31.3	17	18.5	3
ø32	23	20.5	19.5	4	23	20.5	21.5	6	-	-	-	-	28.8	24	18.5	3	33.8	24	18.5	3
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	5.5	0.5	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6	1	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	6.5	6	44.8	32	11.5	11	49.8	32	11.5	11
ø80	49.5	28.5	15.5	17.5	49.5	28.5	17	19	55.3	32	9	11	55.3	32	14	16	60.3	32	14	16
ø100	59	28.5	19.5	23	59	28.5	21	24.5	64.8	32	13	16.5	64.8	32	18	21.5	69.8	32	18	21.5

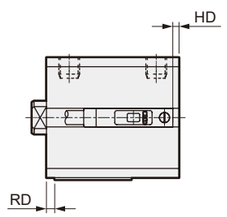
*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

SSD2-□L T-type Switch Attached Outline Dimension Drawing

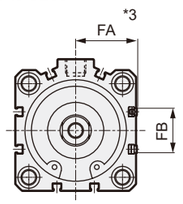
● SSD2-G5L, SSD2-KL, SSD2-KL-□C, SSD2-KLF, SSD2-KUL

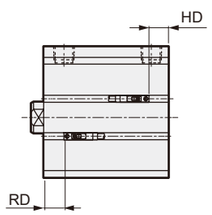
· ø16



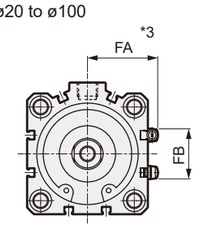


· ø20 to ø200

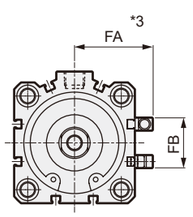




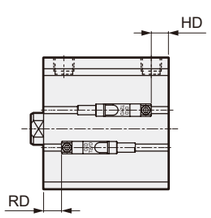
· ø20 to ø100



[For T8, T2J]



[For T1, T2YD, T2YDT]



Code	SSD2-G5L																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø20	18.5	12.5	17.5	3	18.5	12.5	19.5	5	-	-	-	-	24.3	16	16.5	2	29.3	16	16.5	2
ø25	20.5	13.5	19.5	4	20.5	13.5	21.5	6	-	-	-	-	26.3	17	18.5	3	31.3	17	18.5	3
ø32	23	20.5	19.5	4	23	20.5	21.5	6	-	-	-	-	28.8	24	18.5	3	33.8	24	18.5	3
ø40	26.5	27.5	22	7	26.5	27.5	23.5	8.5	32.3	31	15.5	0.5	32.3	31	20.5	5.5	37.3	31	20.5	5.5
ø50	32.5	28.5	22.5	7.5	32.5	28.5	24	9	38.3	32	16	1	38.3	32	21	6	43.3	32	21	6
ø63	39	28.5	23	12.5	39	28.5	24.5	14	44.8	32	16.5	6	44.8	32	21.5	11	49.8	32	21.5	11
ø80	49.5	28.5	25.5	17.5	49.5	28.5	27	19	55.3	32	19	11	55.3	32	24	16	60.3	32	24	16
ø100	59	28.5	29.5	23	59	28.5	31	24.5	64.8	32	23	16.5	64.8	32	28	21.5	69.8	32	28	21.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

Code	SSD2-KL, SSD2-KL-*C, SSD2-KLF, SSD2-KUL																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	3.5	4.5	13	4.5	5.5	6.5	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	5	3	15	4.5	7	5	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	9	6.5	18.5	12.5	11	8.5	-	-	-	-	24.3	16	8	5.5	29.3	16	8	5.5
ø25	20.5	13.5	12.5	6	20.5	13.5	14.5	8	-	-	-	-	26.3	17	11.5	5	31.3	17	11.5	5
ø32	23	20.5	15	9	23	20.5	17	11	-	-	-	-	28.8	24	14	8	33.8	24	14	8
ø40	26.5	27.5	19.5	9.5	26.5	27.5	21	11	32.3	31	13.5	3.5	32.3	31	18	8	37.3	31	18	8
ø50	32.5	28.5	20	10	32.5	28.5	21.5	11.5	38.3	32	14	4	38.3	32	18.5	8.5	43.3	32	18.5	8.5
ø63	39	28.5	18	17.5	39	28.5	19.5	19	44.8	32	12	11.5	44.8	32	16.5	16	49.8	32	16.5	16
ø80	49.5	28.5	20.5	22.5	49.5	28.5	22	24	55.3	32	14.5	16.5	55.3	32	19	21	60.3	32	19	21
ø100	59	28.5	24.5	28	59	28.5	26	29.5	64.8	32	18.5	22	64.8	32	23	26.5	69.8	32	23	26.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

SSD2-KG5L T-type Switch Attached Outline Dimension Drawing

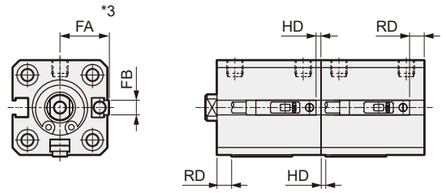
Code	SSD2-KG5L																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø20	18.5	12.5	18.5	6	18.5	12.5	18.5	4.5	-	-	-	-	24.3	16	15.5	1.5	29.3	16	15.5	1.5
ø25	20.5	13.5	22	5.5	20.5	13.5	22	4	-	-	-	-	26.3	17	19	1	31.3	17	19	1
ø32	23	20.5	24	8.5	23	20.5	22.5	7	-	-	-	-	28.8	24	19.5	4	33.8	24	19.5	4
ø40	26.5	27.5	29.5	9.5	26.5	27.5	28	8	32.3	31	20	0	32.3	31	25	5	37.3	31	25	5
ø50	32.5	28.5	30	10	32.5	28.5	28.5	8.5	38.3	32	20.5	0.5	38.3	32	25.5	5.5	43.3	32	25.5	5.5
ø63	39	28.5	28	17.5	39	28.5	26.5	16	44.8	32	18.5	8	44.8	32	23.5	13	49.8	32	23.5	13
ø80	49.5	28.5	30.5	22	49.5	28.5	29	20.5	55.3	32	21	12.5	55.3	32	26	17.5	60.3	32	26	17.5
ø100	59	28.5	34.5	28	59	28.5	33	26.5	64.8	32	25	18.5	64.8	32	30	23.5	69.8	32	30	23.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

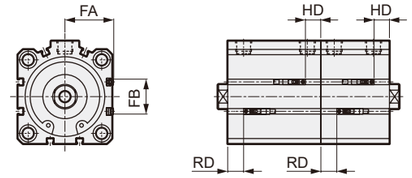
SSD2-BL T-type Switch Attached Outline Dimension Drawing

● T0H/V, T5H/V, T3H/V, T3PH/V, T2□R3, TOY, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

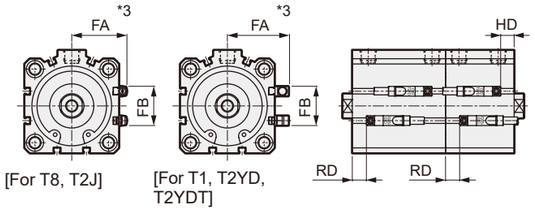
· ø12 to ø16



· ø20 to ø100



· ø20 to ø100



[For T8, T2J] [For T1, T2YD, T2YDT]

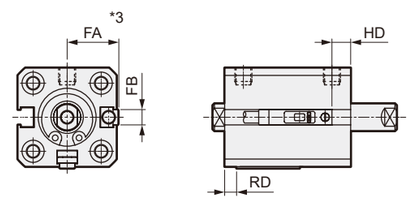
Code	SSD2-BL																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	1.5	1.5	13	4.5	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	4.5	0	15	4.5	6	1	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	7.5	3	18.5	12.5	9.5	5	-	-	-	-	24.3	16	6.5	2	29.3	16	6.5	2
ø25	20.5	13.5	9.5	4	20.5	13.5	11.5	6	-	-	-	-	26.3	17	8.5	3	31.3	17	8.5	3
ø32	23	20.5	9.5	4	23	20.5	11.5	6	-	-	-	-	28.8	24	8.5	3	33.8	24	8.5	3
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	5.5	0.5	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6	1	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	6.5	6	44.8	32	11.5	11	49.8	32	11.5	11
ø80	49.5	28.5	15.5	17.5	49.5	28.5	17	19	55.3	32	9	11	55.3	32	14	16	60.3	32	14	16
ø100	59	28.5	19.5	23	59	28.5	21	24.5	64.8	32	13	16.5	64.8	32	18	21.5	69.8	32	18	21.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

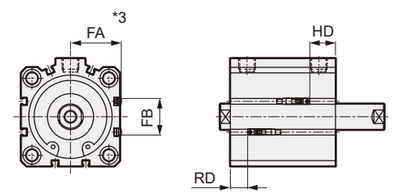
SSD2-DL, SSD2-DML T-type Switch Attached Outline Dimension Drawing

● T0H/V, T5H/V, T3H/V, T3PH/V, T2□R3, TOY, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

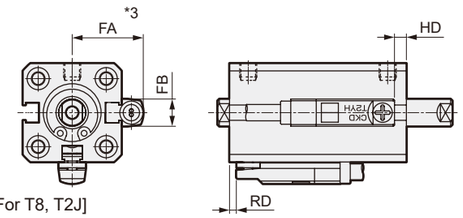
· ø12 to ø16



· ø20 to ø160

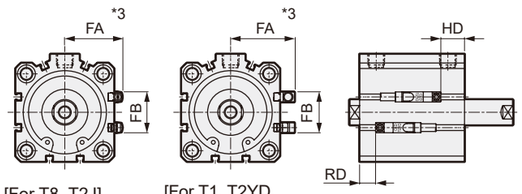


· ø12 to ø16



[For T8, T2J]

· ø20 to ø160



[For T8, T2J] [For T1, T2YD, T2YDT]

Code	SSD2-DL																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	3	5.5	13	4.5	4.5	7.5	-	-	-	-	-	-	1.5	4	-	-	-	-
ø16	15	4.5	3.5	5	15	4.5	5.5	6.5	-	-	-	-	-	-	2	3.5	-	-	-	-
ø20	18.5	12.5	7.5	10	18.5	12.5	9.5	11.5	24.3	16	1.5	3.5	24.3	16	6.5	8.5	29.3	16	6.5	8.5
ø25	20.5	13.5	9.5	11	20.5	13.5	11.5	12.5	26.3	17	3.5	4.5	26.3	17	8.5	9.5	31.3	17	8.5	9.5
ø32	23	20.5	10	12	23	20.5	12	13.5	28.8	24	4	5.5	28.8	24	9	10.5	33.8	24	9	10.5
ø40	26.5	27.5	13	18.5	26.5	27.5	15	20	32.3	31	7	12	32.3	31	12	17	37.3	31	12	17
ø50	32.5	28.5	13	19	32.5	28.5	15	20.5	38.3	32	7	12.5	38.3	32	12	17.5	43.3	32	12	17.5
ø63	39	28.5	13.5	20	39	28.5	15.5	21.5	44.8	32	7.5	13.5	44.8	32	12.5	18.5	49.8	32	12.5	18.5
ø80	49.5	28.5	16	26.5	49.5	28.5	18	28	55.3	32	10	20	55.3	32	15	25	60.3	32	15	25
ø100	59	28.5	20	32	59	28.5	22	33.5	64.8	32	14	25.5	64.8	32	19	30.5	69.8	32	19	30.5
ø125	71.5	44.5	35	30	71.5	44.5	36.5	31.5	77	48	29	24	77	48	33.5	28.5	82.5	48	33.5	28.5
ø140	79.5	44.5	33.5	31.5	79.5	44.5	35	33	85	48	27.5	25.5	85	48	32	30	90.5	48	32	30
ø160	89.5	48.5	39	34	89.5	48.5	40.5	35.5	95	52	33	28	95	52	37.5	32.5	100.5	52	37.5	32.5
ø180	99	-	43.5	39.5	99	-	45.5	41.5	104.5	-	37.5	33.5	104.5	-	42.5	38.5	110	-	42.5	38.5
ø200	109.5	-	45.5	44.5	109.5	-	47.5	46.5	115	-	39.5	38.5	115	-	44.5	43.5	120.5	-	44.5	43.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

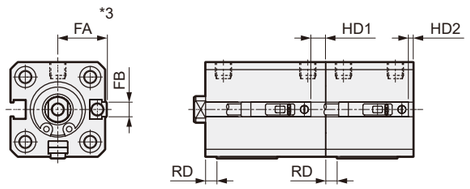
Code	SSD2-DML																			
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	2.5	10	13	4.5	4	11.5	-	-	-	-	-	-	-	-	-	-	-	-
ø16	15	4.5	2	10	15	4.5	3.5	11.5	-	-	-	-	-	-	-	-	-	-	-	-
ø20	18.5	12.5	6.5	14.5	18.5	12.5	8	16	-	-	-	-	24.3	16	5	13	29.3	16	5	13
ø25	20.5	13.5	9.5	16.5	20.5	13.5	11	18	-	-	-	-	26.3	17	8	15	31.3	17	8	15
ø32	23	20.5	9	20	23	20.5	10.5	21.5	-	-	-	-	28.8	24	7.5	18.5	33.8	24	7.5	18.5
ø40	26.5	27.5	12	16.5	26.5	27.5	13.5	18	32.3	31	5.5	10	32.3	31	10.5	15	37.3	31	10.5	15
ø50	32.5	28.5	12.5	16.5	32.5	28.5	14	18	38.3	32	6	10	38.3	32	11	15	43.3	32	11	15
ø63	39	28.5	13	18	39	28.5	14.5	19.5	44.8	32	6.5	11.5	44.8	32	11.5	16.5	49.8	32	11.5	16.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

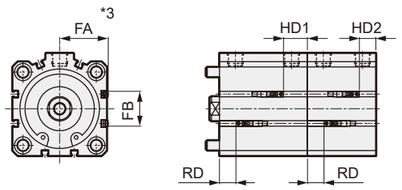
SSD2-WL T-type Switch Attached Outline Dimension Drawing

● T0H/V, T5H/V, T3H/V, T3PH/V, T2□R3, TOY, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

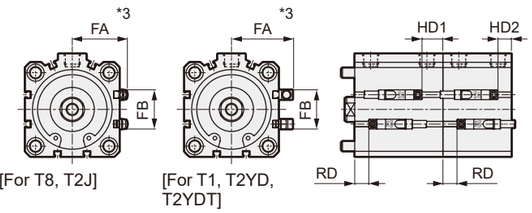
· ø12 to ø16



· ø20 to ø100



· ø20 to ø100



[For T8, T2J] [For T1, T2YD, T2YDT]

Code	SSD2-WL														
Bore Size	T0, T5, T2, T3, T3P, T2□R3, T0Y					T2W, T3W, T2WL					T8				
(mm)	FA *3	FB	RD	HD1	HD2	FA *3	FB	RD	HD1	HD2	FA *3	FB	RD	HD1	HD2
ø12	13	4.5	1.5	6.5	1.5	13	4.5	3.5	8.5	3.5	-	-	-	-	-
ø16	15	4.5	3.5	4.5	0	15	4.5	5.5	6.5	1.5	-	-	-	-	-
ø20	18.5	12.5	7.5	9.5	3	18.5	12.5	9.5	11.5	5	-	-	-	-	-
ø25	20.5	13.5	9.5	10.5	4	20.5	13.5	11.5	12.5	6	-	-	-	-	-
ø32	23	20.5	10	11.5	4	23	20.5	12	13.5	6	-	-	-	-	-
ø40	26.5	27.5	13	18	7.5	26.5	27.5	15	20	9.5	32.3	31	6	11.5	1
ø50	32.5	28.5	13	18.5	8.5	32.5	28.5	15	20.5	10.5	38.3	32	6.5	11.5	1.5
ø63	39	28.5	13.5	19.5	13.5	39	28.5	15.5	21.5	15.5	44.8	32	7	12.5	6.5
ø80	49.5	28.5	16	26	18.5	49.5	28.5	18	28	20.5	55.3	32	9.5	19	11.5
ø100	59	28.5	20.5	31.5	24	59	28.5	22.5	33.5	26	64.8	32	13.5	24.5	17

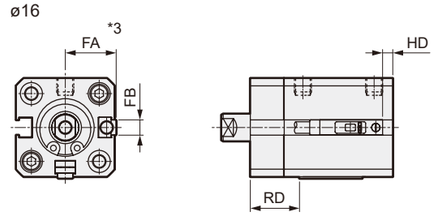
Code	SSD2-WL									
Bore Size	T2J					T1, T2YD, T2YDT				
(mm)	FA *3	FB	RD	HD1	HD2	FA *3	FB	RD	HD1	HD2
ø12	-	-	-	-	-	-	-	-	-	-
ø16	-	-	-	-	-	-	-	-	-	-
ø20	24.3	16	6.5	8.5	2	29.3	16	6.5	8.5	2
ø25	26.3	17	8.5	9.5	3	31.3	17	8.5	9.5	3
ø32	28.8	24	8.5	11	3.5	33.8	24	8.5	11	3.5
ø40	32.3	31	10.5	16	5.5	37.3	31	10.5	16	5.5
ø50	38.3	32	11	16	6	43.3	32	11	16	6
ø63	44.8	32	11.5	17	11	49.8	32	11.5	17	11
ø80	55.3	32	14	23.5	16	60.3	32	14	23.5	16
ø100	64.8	32	18	29	21.5	69.8	32	18	29	21.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

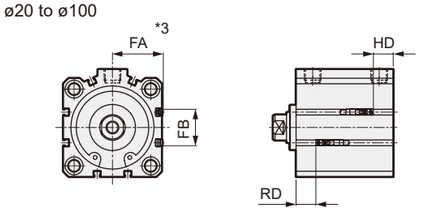
SSD2-□L T-type Switch Attached Outline Dimension Drawing

●SSD2-G2L, G3L, KG2L, KG3L
· T2WLH/V

ø16

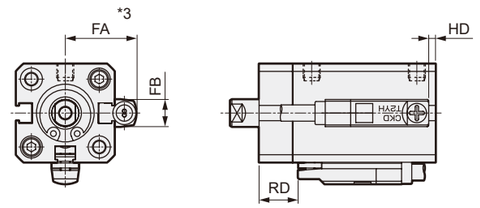


ø20 to ø100

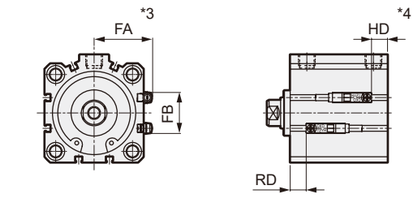


· T2YH/V

ø16



ø20 to ø100

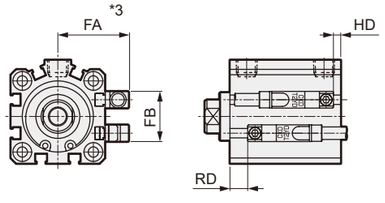


Code	SSD2-G2L, G3L								SSD2-KG2L, KG3L							
Bore Size	T2WL				T2YLH				T2WL				T2YLH			
(mm)	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø16	15	4.5	14.5	3	20.8	8	11.5	0	15	4.5	17.5	5.5	20.8	8	14.5	2.5
ø20	18.5	12.5	19.5	5	24.3	16	16.5	2	18.5	12.5	23	7.5	24.3	16	20	4.5
ø25	20.5	13.5	21.5	6	26.3	17	18.5	3	20.5	13.5	25.5	7.5	26.3	17	22.5	4.5
ø32	23	20.5	22	6	28.8	24	19	3	23	20.5	28.5	12.5	28.8	24	25.5	9.5
ø40	26.5	27.5	15	9.5	32.3	31	12	6.5	26.5	27.5	34	13.5	32.3	31	31	10.5
ø50	32.5	28.5	15	10.5	38.3	32	12	7.5	32.5	28.5	34	14.5	38.3	32	31	11.5
ø63	39	28.5	15.5	15.5	44.8	32	12.5	12.5	39	28.5	32	21	44.8	32	29	18
ø80	49.5	28.5	18	20.5	55.3	32	15	17.5	49.5	28.5	34.5	27	55.3	32	31.5	24
ø100	59	28.5	22	26	64.8	32	19	23	59	28.5	38.5	32.5	64.8	32	35.5	29.5

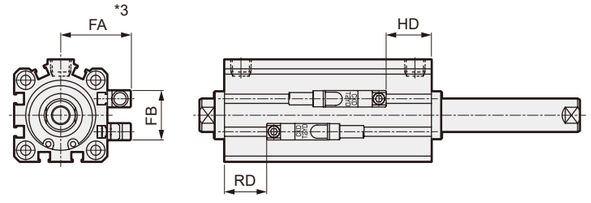
*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

●SSD2-G1L, G4L, KG1L, KG2L
· T2YD, T2YDT, T2YDTU (Custom product)

ø25 to ø100



● SSD2-DG1L, DG4L



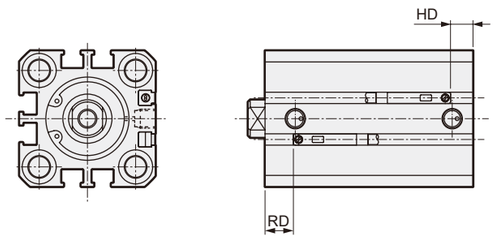
Code	SSD2-G1L, G4L				SSD2-KG1L, KG4L				SSD2-DG1L, DG4L			
Bore Size	T2YD, T2YDT, T2YDTU (Custom product)											
(mm)	FA	FB	RD	HD	FA	FB	RD	HD	FA	FB	RD	HD
ø25	31.5	17	8.5	3	31.5	17	20	2	31.5	17	20	21.5
ø32	33.5	24	8.5	3.5	33.5	24	20.5	4.5	33.5	24	20.5	22
ø40	37	31	10.5	5.5	37	31	23.5	8	37	31	23.5	27.5
ø50	43	32	11	6	43	32	23.5	9	43	32	23.5	27.5
ø63	49.5	32	11.5	11	49.5	32	24	13	49.5	32	24	28.5
ø80	60	32	14	16	60	32	26.5	19	60	32	26.5	35
ø100	69.5	32	18	21.5	69.5	32	30.5	24.5	69.5	32	30.5	40.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

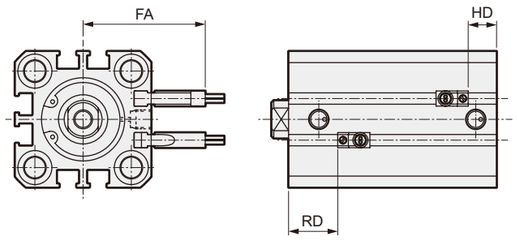
SSD2-□L F-type Switch Attached Outline Dimension Drawing

●SSD2-L, SSD2-XL, SSD2-YL, SSD2-OL, SSD2-LF, SSD2-QL-R, SSD2-QL-H, SSD2-ML, SSD2-GL, SSD2-G5L, SSD2-KL, SSD2-KL□C, SSD2-KLF, SSD2-KUL, SSD2-KG5L

F2, F3, F2Y, F3Y



F2S, F3S



Code	SSD2-L, SSD2-XL, SSD2-YL, SSD2-OL, SSD2-LF				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	12	7.5	31.6	11	6.5
ø25	14	8.5	33.2	13	7.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD2-L (Long Stroke)				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD *3	HD *3	FA	RD *3	HD *3
ø20	20 (14.5)	10 (16.5)	31.6	19 (13.5)	9 (15.5)
ø25	23.5 (16.5)	9.5 (18)	33.2	22.5 (15.5)	8.5 (17)

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: ( ) dimensions are for when ø20: 100 strokes, ø25 exceeding 150 strokes.

Code	SSD2-QL-R				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD *3	HD	FA	RD *3	HD
ø20	36 (41)	8.5	31.6	35 (40)	7.5
ø25	37.5 (42.5)	11	33.2	36.5 (41.5)	10

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: ( ) dimensions are values when exceeding 25 strokes.

Code	SSD2-QL-H				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD *3	HD	FA	RD *3	HD
ø20	13 (18)	38	31.6	12 (17)	37
ø25	14 (19)	40	33.2	13 (18)	39

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: ( ) dimensions are values when exceeding 25 strokes.

Code	SSD2-ML				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	16.5	8	31.6	15.5	7
ø25	19.5	8	33.2	18.5	7

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD2-GL				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	22	7.5	31.6	21	6.5
ø25	24	8.5	33.2	23	7.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD2-G5L				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	22	7.5	31.6	21	6.5
ø25	24	8.5	33.2	23	7.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD2-KL, SSD2-KL-*C, SSD2-KLF, SSD2-KUL				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	13.5	11	31.6	12.5	10
ø25	17	10.5	33.2	16	9.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD-KG5L				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	23	10.5	31.6	22	9.5
ø25	26.5	10	33.2	25.5	9

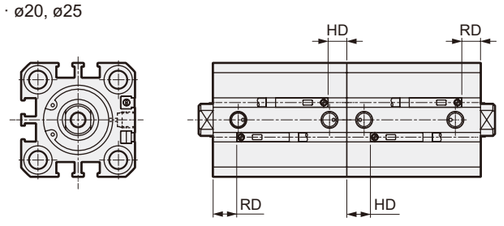
*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

SSD2-BL, SSD2-WL, SSD2-DL, SSD2-DML F-type Switch Attached Outline Dimension Drawing

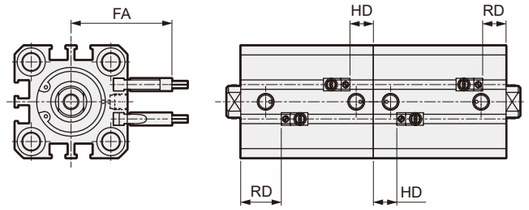
●SSD2-BL

F2, F3, F2Y, F3Y

· ø20, ø25



F2S, F3S



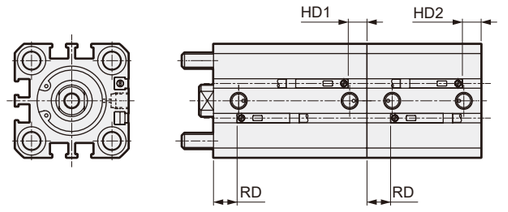
Code	SSD2-BL				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	12	7.5	31.6	11	6.5
ø25	14	8.5	33.2	13	7.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

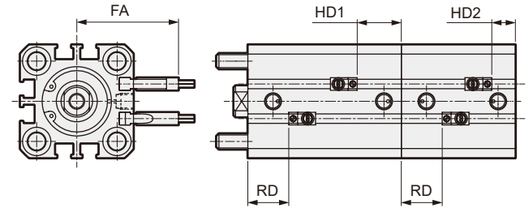
●SSD2-WL

F2, F3, F2Y, F3Y

· ø20, ø25



F2S, F3S



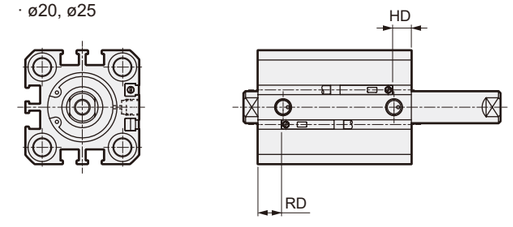
Code	SSD2-WL						
Bore Size (mm)	F2, F3, F2Y, F3Y			F2S, F3S			
	RD	HD1	HD2	FA	RD	HD1	HD2
ø20	12	14	7.5	31.6	11	13	6.5
ø25	14	15	8.5	33.2	13	14	7.5

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

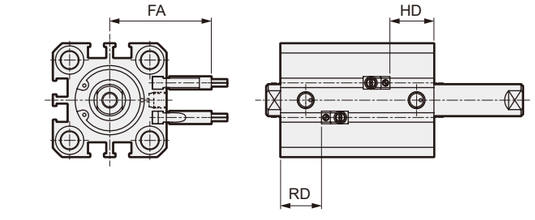
●SSD2-DL, SSD2-DML

F2, F3, F2Y, F3Y

· ø20, ø25



F2S, F3S



Code	SSD2-DL				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	12	14	31.6	11	13
ø25	14	15	33.2	13	14

*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Code	SSD2-DML				
Bore Size (mm)	F2, F3, F2Y, F3Y		F2S, F3S		
	RD	HD	FA	RD	HD
ø20	12	19	31.6	11	18
ø25	13	20	33.2	12	19

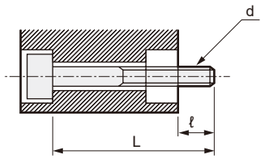
*1: For switch mountability, refer to the model No. indication method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.

Mounting Bolt Model No. Notation Method

SSD2 - **BOLT** - **d×L**

Mounting bolts (Bolts are a set of 4.)

How to Read the List



Material: Steel
Treatment: Black Oxide

d: Mounting bolt screw diameter
L: Mounting bolt length
ℓ : Mating side screw-in possible length
Note: The mounting bolts will be displayed as d×L.

● SSD2, SSD2-K (ø12 to ø100)

Bore Size	Stroke	ℓ	d×L			
			SSD2	SSD2-L	SSD2-K	SSD2-KL
ø12 ø16	5	6.5	M3×25	M3×30	M3×30	M3×35
	10		×30	×35	×35	×40
	15		×35	×40	×40	×45
	20		×40	×45	×45	×50
	25		×45	×50	×50	×55
	30		×50	×55	×55	×60
ø20	5	6	M5×25	M5×35	M5×30	M5×40
	10		×30	×40	×35	×45
	15		×35	×45	×40	×50
	20		×40	×50	×45	×55
	25		×45	×55	×50	×60
	30		×50	×60	×55	×65
	35		×55	×65	×60	×70
	40		×60	×70	×65	×75
	45		×65	×75	×70	×80
	50		×70	×80	×75	×85
ø25	5	8	M5×30	M5×40	M5×35	M5×45
	10		×35	×45	×40	×50
	15		×40	×50	×45	×55
	20		×45	×55	×50	×60
	25		×50	×60	×55	×65
	30		×55	×65	×60	×70
	35		×60	×70	×65	×75
	40		×65	×75	×70	×80
	45		×70	×80	×75	×85
	50		×75	×85	×80	×90
ø32	5	7.5 12.5	M5×30	M5×40	M5×45	M5×55
	10		×35	×45	×50	×60
	15		×40	×50	×55	×65
	20		×45	×55	×60	×70
	25		×50	×60	×65	×75
	30		×55	×65	×70	×80
	35		×60	×70	×75	×85
	40		×65	×75	×80	×90
	45		×70	×80	×85	×95
	50		×75	×85	×90	×100
	75		×110	×110	×125	×125
	100		×135	×135	×150	×150
ø40	5	6	M5×35	M5×45	M5×45	M5×55
	10		×40	×50	×50	×60
	15		×45	×55	×55	×65
	20		×50	×60	×60	×70
	25		×55	×65	×65	×75
	30		×60	×70	×70	×80
	35		×65	×75	×75	×85
	40		×70	×80	×80	×90
	45		×75	×85	×85	×95
	50		×80	×90	×90	×100
	75		×115	×115	×125	×125
	100		×140	×140	×150	×150

Bore Size	Stroke	ℓ	d×L			
			SSD2	SSD2-L	SSD2-K	SSD2-KL
ø50	10	11	M6×45	M6×55	M6×55	M6×65
	15		×50	×60	×60	×70
	20		×55	×65	×65	×75
	25		×60	×70	×70	×80
	30		×65	×75	×75	×85
	35		×70	×80	×80	×90
	40		×75	×85	×85	×95
	45		×80	×90	×90	×100
	50		×85	×95	×95	×105
	75		×120	×120	×130	×130
	100		×145	×145	×155	×155
ø63	10	13	M8×50	M8×60	M8×60	M8×70
	15		×55	×65	×65	×75
	20		×60	×70	×70	×80
	25		×65	×75	×75	×85
	30		×70	×80	×80	×90
	35		×75	×85	×85	×95
	40		×80	×90	×90	×100
	45		×85	×95	×95	×105
	50		×90	×100	×100	×110
	75		×125	×125	×135	×135
	100		×150	×150	×160	×160
ø80	10	17.5	M10×60	M10×70	M10×70	M10×80
	15		×65	×75	×75	×85
	20		×70	×80	×80	×90
	25		×75	×85	×85	×95
	30		×80	×90	×90	×100
	35		×85	×95	×95	×105
	40		×90	×100	×100	×110
	45		×95	×105	×105	×115
	50		×100	×110	×110	×120
	75		×135	×135	×145	×145
	100		×160	×160	×170	×170
ø100	10	18	M10×70	M10×80	M10×80	M10×90
	15		×75	×85	×85	×95
	20		×80	×90	×90	×100
	25		×85	×95	×95	×105
	30		×90	×100	×100	×110
	35		×95	×105	×105	×115
	40		×100	×110	×110	×120
	45		×105	×115	×115	×125
	50		×110	×120	×120	×130
	75		×145	×145	×155	×155
	100		×170	×170	×180	×180

Note: Values in ( ) are for high load (SSD2-K/KL).

● SSD2 (ø125 to ø200)

Bore Size	Stroke	ℓ	d×L	
			SSD2	SSD2-L
ø125 ø140	10	20	M12×100	M12×100
	20		×110	×110
	30		×120	×120
	40		×130	×130
	50		×140	×140
	75		×165	×165
	100		×190	×190
ø160	10	24.2	M14×110	M14×110
	20		×120	×120
	30		×130	×130
	40		×140	×140
	50		×150	×150
	75		×175	×175
	100		×200	×200
ø180	10	36	M18×125	M18×125
	20		×135	×135
	30		×145	×145
	40		×155	×155
	50		×165	×165
	75		×190	×190
	100		×215	×215
ø200	10	39	M18×135	M18×135
	20		×145	×145
	30		×155	×155
	40		×165	×165
	50		×175	×175
	75		×200	×200
	100		×225	×225

● SSD2-X, SSD2-Y, SSD2-M

Bore Size	Stroke	ℓ	d×L			
			SSD2-X, Y	SSD2-XL, YL	SSD2-M	SSD2-ML
ø12 ø16	5	6.5	M3×25	M3×30	M3×30	M3×35
	10		×30	×35	×35	×40
	15				×40	×45
	20				×45	×50
	25				×50	×55
	30				×55	×60
ø20	5	6	M5×25	M5×35	M5×30	M5×40
	10		×30	×40	×35	×45
	15				×40	×50
	20				×45	×55
	25				×50	×60
	30				×55	×65
	35				×60	×70
	40				×65	×75
	45				×70	×80
	50				×75	×85
ø25	5	8	M5×30	M5×40	M5×35	M5×45
	10		×35	×45	×40	×50
	15				×45	×55
	20				×50	×60
	25				×55	×65
	30				×60	×70
	35				×65	×75
	40				×70	×80
	45				×75	×85
	50				×80	×90
ø32	5	8.5	M5×30	M5×40	M5×40	M5×50
	10		×35	×45	×45	×55
	15				×50	×60
	20				×55	×65
	25				×60	×70
	30				×65	×75
	35				×70	×80
	40				×75	×85
	45				×80	×90
	50				×85	×95
	75				×120	×120
	100				×145	×145
ø40	5	6	M5×35	M5×45	M5×35	M5×45
	10		×40	×50	×40	×50
	15				×45	×55
	20				×50	×60
	25				×55	×65
	30				×60	×70
	35				×65	×75
	40				×70	×80
	45				×75	×85
	50				×80	×90
	75				×115	×115
	100				×140	×140
ø50	10	11	M6×45	M6×55	M6×45	M6×55
	15				×50	×60
	20		×55	×65	×55	×65
	25				×60	×70
	30				×65	×75
	35				×70	×80
	40				×75	×85
	45				×80	×90
	50				×85	×95
	75				×120	×120
	100				×145	×145
ø63	10	13			M8×50	M8×60
	15				×55	×65
	20				×60	×70
	25				×65	×75
	30				×70	×80
	35				×75	×85
	40				×80	×90
	45				×85	×95
	50				×90	×100
	75				×125	×125
	100				×150	×150

● SSD2-Q(L)

Bore Size	Stroke	ℓ	d×L	
			SSD-2-Q(L)-H	SSD-2-Q(L)R
ø20	10	14.5 (11)	M5×80	M5×70
	15		×85	×75
	20		×90	×80
	25		×95	×85
	50	14.5	×125	×125
	75		×150	×150
	100		×175	×175
ø25	10	11.5 13.5	M5×80	M5×75
	15		×85	×80
	20		×90	×85
	25		×95	×90
	50	11.5	×125	×125
	75		×150	×150
	100		×175	×175
ø32	10	15 12.5	M5×85	M5×75
	15		×90	×80
	20		×95	×85
	25		×100	×90
	50		×125	×115
	75		×150	×140
	100		×175	×165
ø40	10	10.5 (11)	M5×90	M5×80
	15		×95	×85
	20		×100	×90
	25		×105	×95
	50		×130	×120
	75		×155	×145
	100		×180	×170
ø50	10	11	M6×90	M6×80
	15		×95	×85
	20		×100	×90
	25		×105	×95
	50		×130	×120
	75		×155	×145
	100		×180	×170
ø63	10	17 18	M8×95	M8×90
	15		×100	×95
	20		×105	×100
	25		×110	×105
	50		×135	×130
	75		×160	×155
	100		×185	×180
ø80	25	15 12.5	M10×140	M10×130
	50		×165	×155
	75	15	×195	×195
	100		×220	×220
ø100	25	15.5 13	M10×150	M10×140
	50		×175	×165
	75	15.5	×205	×205
	100		×230	×230

Note: Values in ( ) are for SSD2-Q(L)-R.

● SSD2-D

Bore Size	Stroke	ℓ	d×L	
			SSD2-D	SSD2-DL
ø12 ø16	5	6.5	M3×30	M3×35
	10		×35	×40
	15		×40	×45
	20		×45	×50
	25		×50	×55
	30		×55	×60
ø20	5	9.5	M5×35	M5×45
	10		×40	×50
	15		×45	×55
	20		×50	×60
	25		×55	×65
	30		×60	×70
	35		×65	×75
	40		×70	×80
	45		×75	×85
	50		×80	×90
ø25	5	11.5	M5×40	M5×50
	10		×45	×55
	15		×50	×60
	20		×55	×65
	25		×60	×70
	30		×65	×75
	35		×70	×80
	40		×75	×85
	45		×80	×90
	50		×85	×95
ø32	5	10	M5×40	M5×50
	10		×45	×55
	15		×50	×60
	20		×55	×65
	25		×60	×70
	30		×65	×75
	35		×70	×80
	40		×75	×85
	45		×80	×90
	50		×85	×95
	75		×120	×120
	100		×145	×145
ø40	5	10.5	M5×50	M5×60
	10		×55	×65
	15		×60	×70
	20		×65	×75
	25		×70	×80
	30		×75	×85
	35		×80	×90
	40		×85	×95
	45		×90	×100
	50		×95	×105
	75		×130	×130
	100		×155	×155
ø50	10	11	M6×55	M6×65
	15		×60	×70
	20		×65	×75
	25		×70	×80
	30		×75	×85
	35		×80	×90
	40		×85	×95
	45		×90	×100
	50		×95	×105
	75		×130	×130
	100		×155	×155

Bore Size	Stroke	ℓ	d×L	
			SSD2-D	SSD2-DL
ø63	10	12	M8×50	M8×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×125
	100		×150	×150
ø80	10	16	M10×65	M10×75
	15		×70	×80
	20		×75	×85
	25		×80	×90
	30		×85	×95
	35		×90	×100
	40		×95	×105
	45		×100	×110
	50		×105	×115
	75		×140	×140
	100		×165	×165
ø100	10	16.5	M10×75	M10×85
	15		×80	×90
	20		×85	×95
	25		×90	×100
	30		×95	×105
	35		×100	×110
	40		×105	×115
	45		×110	×120
	50		×115	×125
	75		×150	×150
	100		×175	×175
ø125 ø140	10	20	M12×100	M12×100
	20		×110	×110
	30		×120	×120
	40		×130	×130
	50		×140	×140
	75		×165	×165
	100		×190	×190
ø160	10	24.2	M14×110	M14×110
	20		×120	×120
	30		×130	×130
	40		×140	×140
	50		×150	×150
	75		×175	×175
	100		×200	×200
ø180	10	36	M18×125	M18×125
	20		×135	×135
	30		×145	×145
	40		×155	×155
	50		×165	×165
	75		×190	×190
	100		×215	×215
ø200	10	39	M18×135	M18×135
	20		×145	×145
	30		×155	×155
	40		×165	×165
	50		×175	×175
	75		×200	×200
	100		×225	×225

● SSD2-G1, G4

Bore Size	Stroke	ℓ	d×L	
			SSD2-G1, G4	SSD2-G1L, G4L
ø32	5	7.5	M5×30	M5×40
	10		×35	×45
	15		×40	×50
	20		×45	×55
	25		×50	×60
	30		×55	×65
	35		×60	×70
	40		×65	×75
	45		×70	×80
	50		×75	×85
	75		×110	×120
	100		×135	×145
ø40	5	6	M5×35	M5×45
	10		×40	×50
	15		×45	×55
	20		×50	×60
	25		×55	×65
	30		×60	×70
	35		×65	×75
	40		×70	×80
	45		×75	×85
	50		×80	×90
	75		×115	×125
	100		×140	×150
ø50	10	11	M6×45	M6×55
	15		×50	×60
	20		×55	×65
	25		×60	×70
	30		×65	×75
	35		×70	×80
	40		×75	×85
	45		×80	×90
	50		×85	×95
	75		×120	×130
	100		×145	×155
ø63	10	13	M8×50	M8×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø80	10	17.5	M10×60	M10×70
	15		×65	×75
	20		×70	×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø100	10	18	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180

● SSD2-G5

Bore Size	Stroke	ℓ	d×L	
			SSD2-G5	SSD2-G5L
ø32	5	7.5	M5×40	M5×50
	10		×45	×55
	15		×50	×60
	20		×55	×65
	25		×60	×70
	30		×65	×75
	35		×70	×80
	40		×75	×85
	45		×80	×90
	50		×85	×95
	75		×115	×130
	100		×140	×155
ø40	5	6	M5×45	M5×55
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø50	10	11	M6×55	M6×65
	15		×60	×70
	20		×65	×75
	25		×70	×80
	30		×75	×85
	35		×80	×90
	40		×85	×95
	45		×90	×100
	50		×95	×105
	75		×130	×140
	100		×155	×165
ø63	10	13	M8×60	M8×70
	15		×65	×75
	20		×70	×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø80	10	17.5	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180
ø100	10	18	M10×80	M10×90
	15		×85	×95
	20		×90	×100
	25		×95	×105
	30		×100	×110
	35		×105	×115
	40		×110	×120
	45		×115	×125
	50		×120	×130
	75		×155	×165
	100		×180	×190

● SSD2-G, G2, G3

Bore Size	Stroke	ℓ	d×L	
			SSD2-G, G2, G3	SSD2-GL, G2L, G3L
ø20	5	6	M5×25	M5×35
	10		×35	×45
	15		×40	×50
	20		×45	×55
	25		×50	×60
	30		×55	×65
	35		×60	×70
	40		×65	×75
	45		×70	×80
	50		×75	×85
ø25	5	8	M5×30	M5×40
	10		×35	×45
	15		×40	×50
	20		×45	×55
	25		×50	×60
	30		×55	×65
	35		×60	×70
	40		×65	×75
	45		×70	×80
	50		×75	×85
ø32	5	7.5	M5×30	M5×40
	10		×35	×45
	15		×40	×50
	20		×45	×55
	25		×50	×60
	30		×55	×65
	35		×60	×70
	40		×65	×75
	45		×70	×80
	50		×75	×85
	75		×105	×120
	100		×130	×145
ø40	5	6	M5×35	M5×45
	10		×40	×50
	15		×45	×55
	20		×50	×60
	25		×55	×65
	30		×60	×70
	35		×65	×75
	40		×70	×80
	45		×75	×85
	50		×80	×90
	75		×115	×125
	100		×140	×150
ø50	10	11	M6×45	M6×55
	15		×50	×60
	20		×55	×65
	25		×60	×70
	30		×65	×75
	35		×70	×80
	40		×75	×85
	45		×80	×90
	50		×85	×95
	75		×120	×130
	100		×145	×155
ø63	10	13	M8×50	M8×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø80	10	17.5	M10×60	M10×70
	15		×65	×75
	20		×70	×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø100	10	18	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180

ø80	30	17.5	×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø100	10	18	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180

● SSD2-T1L

Bore Size	Stroke	ℓ	d×L
			SSD2-T1L
ø32	5	7.5	M5×40
	10		×45
	15		×50
	20		×55
	25		×60
	30		×65
	35		×70
	40		×75
	45		×80
	50		×85
	75		×120
	100		×145
ø40	5	6	M5×45
	10		×50
	15		×55
	20		×60
	25		×65
	30		×70
	35		×75
	40		×80
	45		×85
	50		×90
	75		×125
	100		×150
ø50	10	11	M6×55
	15		×60
	20		×65
	25		×70
	30		×75
	35		×80
	40		×85
	45		×90
	50		×95
	75		×130
	100		×155
ø63	10	13	M8×60
	15		×65
	20		×70
	25		×75
	30		×80
	35		×85
	40		×90
	45		×95
	50		×100
	75		×135
	100		×160

● SSD2-K-□C

Bore Size	Stroke	ℓ	d×L	
			SSD2-K-□C	SSD2-KL-□C
ø20	5	6	M5×30	M5×40
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
ø25	5	8	M5×35	M5×45
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
ø32	5	7.5	M5×45	M5×55
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø40	5	6	M5×45	M5×55
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø50	10	11	M6×55	M6×65
	15		×60	×70
	20		×65	×75
	25		×70	×80
	30		×75	×85
	35		×80	×90
	40		×85	×95
	45		×90	×100
	50		×95	×105
	75		×130	×140
	100		×155	×165
ø63	10	13	M8×60	M8×70
	15		×65	×75
	20		×70	×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø80	10	17.5	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180
ø100	10	18	M10×80	M10×90
	15		×85	×95
	20		×90	×100
	25		×95	×105
	30		×100	×110
	35		×105	×115
	40		×110	×120
	45		×115	×125
	50		×120	×130
	75		×155	×165
	100		×180	×190

● SSD2-KU

Bore Size	Stroke	ℓ	d×L	
			SSD2-KU	SSD2-KUL
ø20	5	6	M5×30	M5×40
	10		×35	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
ø25	5	8	M5×35	M5×45
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
ø32	5	7.5	M5×45	M5×55
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø40	5	6	M5×45	M5×55
	10		×50	×60
	15		×55	×65
	20		×60	×70
	25		×65	×75
	30		×70	×80
	35		×75	×85
	40		×80	×90
	45		×85	×95
	50		×90	×100
	75		×125	×135
	100		×150	×160
ø50	10	11	M6×55	M6×65
	15		×60	×70
	20		×65	×75
	25		×70	×80
	30		×75	×85
	35		×80	×90
	40		×85	×95
	45		×90	×100
	50		×95	×105
	75		×130	×140
	100		×155	×165
ø63	10	13	M8×60	M8×70
	15		×65	×75
	20		×70	×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×135	×145
	100		×160	×170
ø80	10	17.5	M10×70	M10×80
	15		×75	×85
	20		×80	×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×145	×155
	100		×170	×180
ø100	10	18	M10×80	M10×90
	15		×85	×95
	20		×90	×100
	25		×95	×105
	30		×100	×110
	35		×105	×115
	40		×110	×120
	45		×115	×125
	50		×120	×130
	75		×155	×165
	100		×180	×190

● SSD2-L4, KL4, G1L4, KG1L4

Bore Size	Stroke	ℓ	d×L	
			SSD2-L4, G1L4	SSD2-KL4, KG1L4
ø40	20	6	M5×70	M5×80
	25		×75	×85
	30		×80	×90
	35		×85	×95
	40		×90	×100
	45		×95	×105
	50		×100	×110
	75		×125	×135
	100		×150	×160
ø50	20	11	M6×75	M6×85
	25		×80	×90
	30		×85	×95
	35		×90	×100
	40		×95	×105
	45		×100	×110
	50		×105	×115
	75		×130	×140
	100		×155	×165
ø63	20	13	M8×80	M8×90
	25		×85	×95
	30		×90	×100
	35		×95	×105
	40		×100	×110
	45		×105	×115
	50		×110	×120
	75		×135	×145
	100		×160	×170
ø80	20	17.5	M10×90	M10×100
	25		×95	×105
	30		×100	×110
	35		×105	×115
	40		×110	×120
	45		×115	×125
	50		×120	×130
	75		×145	×155
	100		×170	×180
ø100	20	18	M10×100	M10×110
	25		×105	×115
	30		×110	×120
	35		×115	×125
	40		×120	×130
	45		×125	×135
	50		×130	×140
	75		×155	×165
	100		×180	×190

Knuckle pin/Clevis pin cotter pin (-XP5)

Content: The retaining rings for knuckle pins and clevis pins will be split pins.

Model No. Notation Method

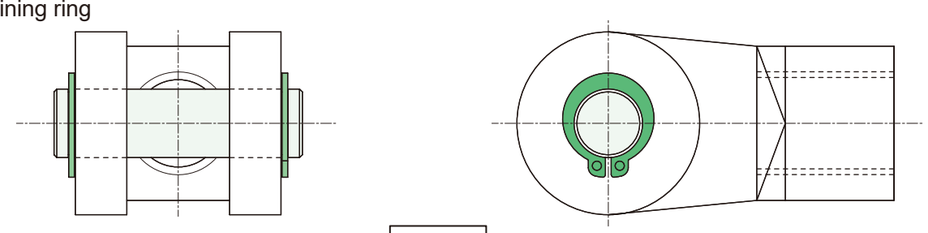
SSD2 - 40 - 100 - N - Y - XP5

Model No.
See SSD2 model No. indication method.

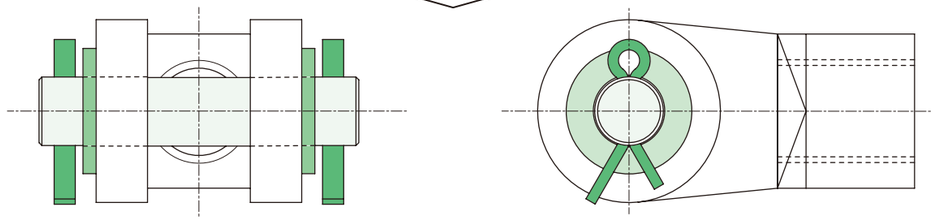
*Since the piston rod end shape is standard female thread, be sure to enter the "N" symbol.

Outline Dimension Drawing

● Retaining ring



● Cotter pin



Pin Diameter	Split Pin Size
12	ø4×20
14	ø4×20
20	ø4×25
25	ø4×30
28	ø5×35
32	ø5×40
40	ø5×50
50	ø5×60

Knuckle fixed by pin driving (-XP7)

Content: Also, drive a spring pin into the knuckle to prevent loosening.

Model No. Notation Method

SSD2 - 40 - 100 - N - Y - XP7

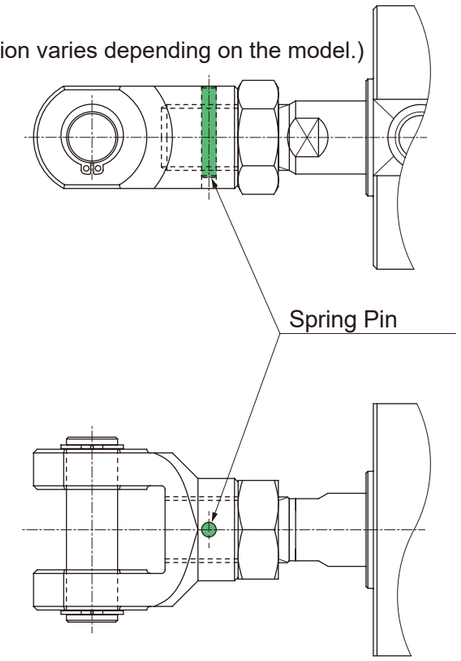
Model No.
See SSD2 model No. indication method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" symbol.

Outline Dimension Drawing

Same as with Knuckle specification.

(Spring pin driving direction varies depending on the model.)



Knuckle pin/Clevis pin cotter pin specification, Knuckle fixed by pin driving (-XP8)

Content: The retaining rings for knuckle pins and clevis pins will be split pins. Also, drive a spring pin into the knuckle to prevent loosening. (XP5 + XP7)

Model No. Notation Method

SSD2 - 40 - 100 - N - Y - XP8

Model No.

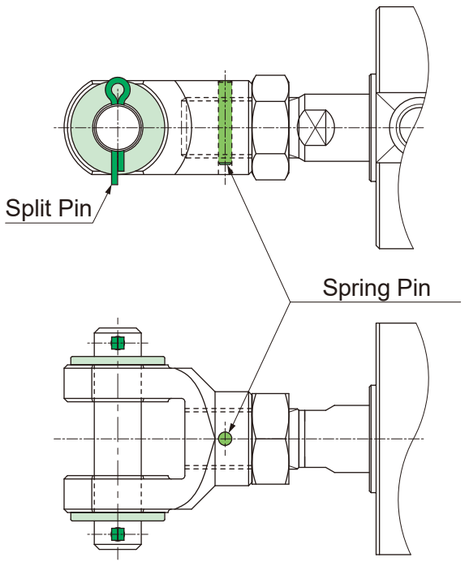
See SSD2 model No. indication method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" symbol.

Outline Dimension Drawing

Mounting dimensions are the same as with Knuckle specification.

Combination of XP5 (P. 318) and XP7 (P. 319).



Fluororubber packing type (-T2)

Content: Change the rod packing, piston packing and O-rings to FKM. (Cushion packing is not changed)

Model No. Notation Method

SSD2 - T2 - 40 - 100

Model No.

See SSD2 model No. indication method.

Outline Dimension Drawing

Same as standard type.

With 2 rod nuts (-A2)

Content: Shipped with 2 rod nuts, same as standard.

Model No. Notation Method

SSD2 - 40 - 100 - NA2

Model No.

See SSD2 model No. indication method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" symbol.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" symbol.

Outline Dimension Drawing

Same as standard type except that 2 rod nuts are included.

To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Opening Section P. 41, and for cylinder switches, see P. 924.

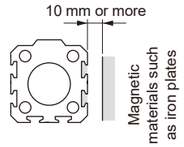
Individual Precautions: Compact Cylinder SSD2 Series

During Design / Selection

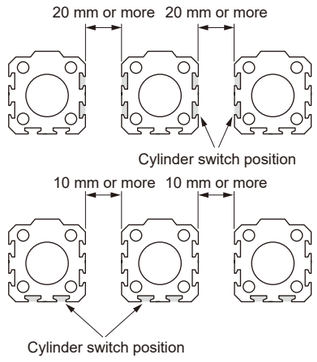
1. Common

Caution

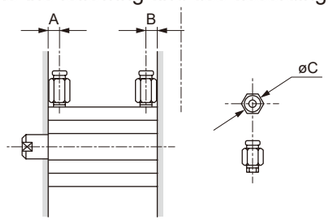
■ If there is a magnetic material such as an iron plate near the cylinder switch, it may cause malfunction. Maintain a distance of 10 mm or more from the cylinder surface.
(Common to all bore sizes)



■ If cylinders are adjacent, it may cause cylinder switch malfunction. Maintain the following distance from the cylinder surface. (Common to all bore sizes)



■ There are restrictions on usable piping fittings. Refer to the following and use accordingly.



Item / Bore Size (mm)	Port Size	Port position dimension A	Port position dimension B	Usable Fittings	Fitting outer diameter øC	Unusable Fittings
ø12	M5	5.5	5.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5	ø11 or less	GWS6-M5
ø16						
ø20		8	5.5			
ø25		11	6			
ø32	Rc1/8	8	8	SC3W-6-4, 6, 8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less	GWS10-6 GWL8-6 GWL10-6
ø40		12	8.5			
ø50	Rc1/4	10.5	10.5	SC3W-8-6, 8, 10 GWS4-8 GWS6-8 GWS10-8 GWL4 to 12-8	ø21 or less	GWS12-8
ø63		13	11			
ø80	Rc3/8	16	13	SC3W-10-6, 8, 10 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø21 or less	-
ø100		23	15			

2. Single Acting Type SSD2-X, SSD2-Y

Caution

■ Do not leave single-acting cylinders pressurized.
If left pressurized, the piston rod may not return by spring load when the pressure is released. If it is necessary to use the product while pressurized, use a double-acting type.

3. With Heat Resistant Cylinder Switch SSD2-T1L

Warning

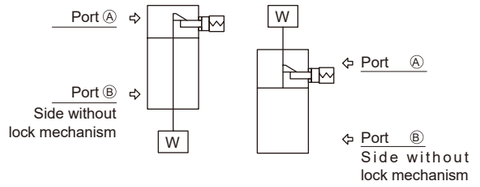
■ Cylinder
In an environment with an ambient temperature of 150°C, external leakage will gradually occur after about 500,000 cycles. Please be careful.

■ Heat Resistant Cylinder Switch
The lamp uses an LED. Continuous use at high temperatures will gradually reduce visibility. Even if the LED goes out, the switch output has a separate circuit configuration from the LED, so the switch output will operate normally.

4. Fall Prevention Type SSD2-Q

Warning

■ In a locked state, if pressure is supplied to a port Ⓐ from a state where both ports are unpressurized, the lock may not release, or the lock may suddenly release and the piston rod may fly out, which is very dangerous. When releasing the lock mechanism, always supply pressure to the Ⓑ port and release it from a state where no load is applied to the lock mechanism.



■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

■ Do not use 3-position valves.
Do not use in combination with 3-position valves (especially closed-center metal seal type). If pressure is sealed in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

Caution

■ The cylinder load factor should be 50% or less.
If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

■ If back pressure is applied to the lock mechanism side, the lock may disengage. Use a single valve or an individual exhaust type manifold.

■ Do not use multiple cylinders synchronized.
Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.

■ Supply pressure equal to or greater than the minimum operating pressure to the port on the side with the lock mechanism.

■ If the piping on the side with the lock mechanism is thin and long, or if the speed controller is far from the cylinder port, the exhaust speed may be slow, and it may take time for the lock to engage. Please be careful. Also, clogging of the silencer included to the valve's EXH. port will lead to similar results.

■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

■ Do not use multiple cylinders synchronized.
Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.

■ Use the speed controller with meter-out control.
Lock may not be released with meter-in control.

■ On the side with the lock, always use at the cylinder's stroke end.
If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

5. Creep Speed Type SSD2-F, SSD2-KF

Caution

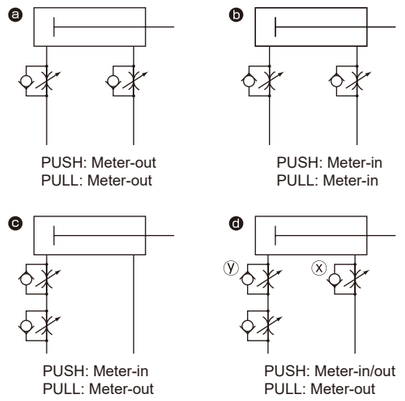
■ Use without lubrication.
Lubrication may change characteristics.

■ Install the speed controller near the cylinder.
If installed far from the cylinder, the speed will become unstable. Use SC-M3/M5, SC3W, SCD-M3/M5, SC3U series speed controllers.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
Use with a load factor of 50% or less.

■ Speed control is stable with a meter-out circuit.

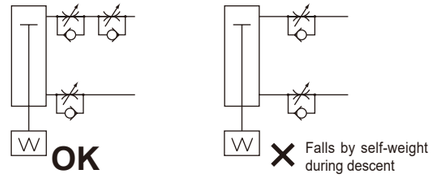
When driving a single-rod cylinder at creep speed in the PUSH direction, if the load resistance is small, a flying-out phenomenon may occur at the start of operation. As countermeasures, use circuits ⓑ, ⓒ, or ⓓ. Circuit ⓓ is the most stable.



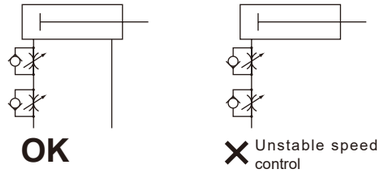
ⓓ Method for adjusting PUSH operation speed of circuit:
1. Speed setting with x speed controller
2. Throttle with y speed controller until projection stops.
3. Reconfirmation of speed

(*1) Comparing ⓑ, ⓒ, and ⓓ, circuit d provides the most stable operation.

(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.



(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)
Lurching occurs in the following cases:

• Thrust > Resistance

*Resistance: Thrust due to residual pressure on exhaust side (For creep speed type, intake pressure = residual pressure) + [For horizontal use: Frictional force due to load / For vertical use: Dead weight of the load]

■ Do not apply lateral load to the cylinder.

Operation becomes unstable when lateral load is applied.

■ Avoid use in locations with vibration.

Operation becomes unstable due to the influence of vibration.

6. Low Friction Type SSD2-KU

⚠ Warning

■ Durability varies depending on operating conditions and model characteristics.

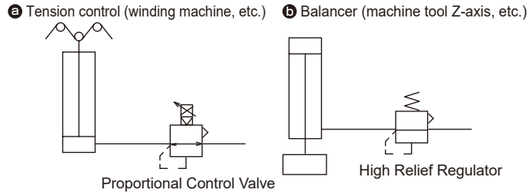
Also, this cylinder has internal leakage. For leakage amount, check the specifications (P. 126).

⚠ Caution

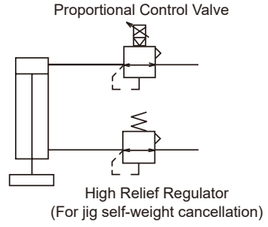
■ Install a speed controller on the cylinder.

Install a speed controller on the cylinder. Use within the operating piston speed range of each cylinder. When used with a balancer, etc., it may be better not to install a speed controller to improve supply/exhaust efficiency. Depending on the application, circuits ⓐ to ⓒ below are recommended.

ⓐ Tension control (winding machine, etc.) ⓑ Balancer (machine tool Z-axis, etc.)



ⓒ Load control (polishing, etc.)

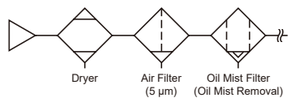


*To improve supply/exhaust characteristics, maximize piping volume as much as possible.

■ Do not lubricate. It will cause characteristics to fluctuate.

■ Do not apply lateral load to the cylinder. Operation becomes unstable when lateral load is applied.

■ Poor quality air adversely affects characteristics and durability. Use clean air with the piping below.



■ Install the speed controller near the cylinder.

If installed far from the cylinder, the speed will become unstable.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.

Use with a load factor of 50% or less.

■ Super compact cylinder high load type has a built-in rubber cushion. The high load type allowable energy value graph below shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds this value, consider a separate shock absorber.

Bore Size mm	Allowable Absorption Energy (J)	
	SSD2-K	SSD2-KU
ø12	0.04	-
ø16	0.09	-
ø20	0.16	
ø25	0.16	
ø32	0.40	
ø40	0.63	
ø50	0.98	
ø63	1.56	
ø80	2.51	
ø100	3.92	

$$\text{Kinetic energy (J)} = \frac{1}{2} \times \text{Weight (kg)} \times [\text{Speed (m/s)}]^2$$

(Note) Regarding the calculation method of kinetic energy

The average speed of the cylinder is calculated by $Va = \frac{L}{T}$.

Va: Average speed (m/s)
L: Cylinder stroke (m)
t: Operating Time (s)

On the other hand, the cylinder speed just before the stroke end is calculated by the following simple formula.

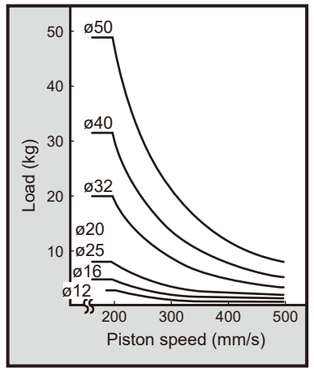
$$Vm = \frac{L}{T} \times (1 + 1.5 \times \frac{\omega}{100})$$

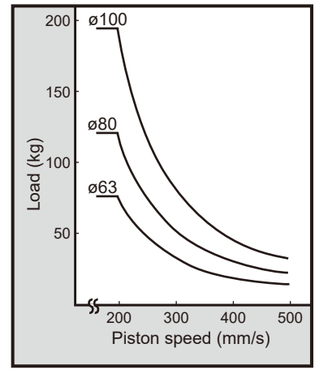
Vm: Speed immediately prior to stroke end (m/s)
ω: Cylinder load factor (%)

For calculating kinetic energy, use this Vm value as the speed.

The following is a graph showing the relationship between piston speed and load for the allowable energy value of the Compact Cylinder High Load Type.

High Load Type Allowable Energy Value Graph





● Note: The range to the lower left of the curve is usable The upper right range requires an external cushion.

■ Avoid use in environments with steam, high humidity, or alkaline atmospheres.

7. Non-rotating Type SSD2-M, DM

⚠ Caution

■ Do not use in a way that applies rotational torque to the piston rod.

The non-rotating bushing will deform and the service life will be significantly reduced.

■ Always use with the load on the piston rod applied in the axial direction of the piston rod.

8. Cutting Oil Resistant Type SSD2-G2/G3, SSD2-KG2/KG3

⚠ Caution

■ Do not apply eccentric load to the piston rod. This may reduce the life of scrapers and bearings.

■ If there is no splashing of cutting oil or water on the piston rod, use the G or G1 series. Please note that if there is no scattering of cutting oil or water with G2 and G3 series, the lubrication of the piston rod will be cut off and the service life will be reduced.

■ Install a speed controller on the cylinder.

● Install a speed controller on the cylinder. Use within the operating piston speed range of each cylinder.

9. Spatter Adhesion Prevention Type SSD2-G4 / SSD2-KG4 / SSD2-DG4

⚠ Warning

■ This cylinder series has improved durability in spatter scattering atmospheres compared to general type cylinders. However, please note that durability may be inferior to general type cylinders when used in other atmospheres.

During Use

1. Common

Warning

■ Install and remove rod metal using appropriate pliers (C-type retaining ring installation tool).

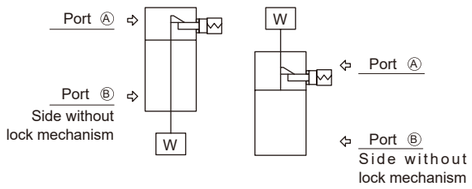
■ Even when using appropriate pliers (C-type retaining ring installation tool), the retaining ring may come off the tip of the pliers (C-type retaining ring installation tool) and fly off, potentially causing injury to personnel and damage to surrounding equipment. Be careful.
Also, when installing, confirm that it is securely in the retaining ring groove before supplying air.

2. Fall Prevention Type SSD2-Q

Warning

■ During equipment maintenance, for safety, please take separate measures to prevent the load from falling due to its own weight.

■ In a locked state, if pressure is supplied to a port Ⓐ from a state where both ports are unpressurized, the lock may not release, or the lock may suddenly release and the piston rod may fly out, which is very dangerous.
When releasing the lock mechanism, always supply pressure to the Ⓑ port and release it from a state where no load is applied to the lock mechanism.



■ When stopping with external shock absorbing equipment (shock absorber, etc.), adjust so that there is no bounce. If there is bounce, the sleeve and stopper piston will make impact contact, leading to damage of the lock mechanism. Also, please perform periodic inspections once or twice a year to check for damage to the holding part due to this phenomenon.

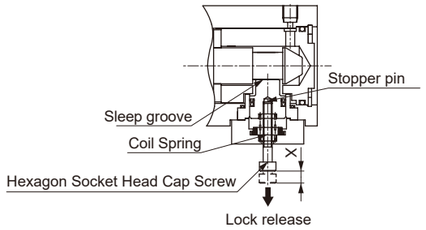
Caution

■ Since the lock mechanism works at the stroke end, if an external stopper is applied in the middle of the stroke, the lock mechanism will not work and there is a risk of falling. When setting the load, always confirm that the lock mechanism works.

■ After manual operation of the lock mechanism, return the lock mechanism to its original state. Also, do not perform manual operations other than during adjustment, as it is dangerous.

■ Release the lock when mounting or adjusting the cylinder. If installation work, etc. is performed while the lock is engaged, the lock part may be damaged.

■ Manual operation non-locking release method
Screw the hex socket bolt into the stopper piston, and if you pull the bolt with a force of 20 N or more by X mm, the stopper piston will move and the lock will be released. (When mounted horizontally with no load or when the opposite port is pressurized) Also, when you release your hand, the built-in spring returns the stopper piston to its original position, and if it enters the piston rod groove, the piston will be locked.



Hex Socket Bolt Dimensions and Movement Amount Unit: mm

Bore Size	Dimension	Movement amount X
ø20	M3×20	3
ø25	M3×20	3
ø32	M3×20	3
ø40	M3×20	3
ø50	M4×30	3
ø63	M4×30	3
ø80	M4×30	3.5
ø100	M4×30	3.5

3. Creep Speed Type SSD2-F · SSD2-KF

Caution

■ Adjust alignment, etc., so that no lateral load is applied to the cylinder. Also, adjust and install so that there is no twisting with respect to the sliding guide.
- Fluctuations in load or resistance will make operation unstable.
- Guides with a large difference between static and dynamic friction will have unstable operation.

4. Low Friction Type SSD2-KU

Caution

■ Adjust alignment, etc., so that no lateral load is applied to the cylinder. Also, adjust and install so that there is no twisting with respect to the sliding guide.
- Fluctuations in load or resistance will make operation unstable.
- For long strokes, the speed becomes unstable due to the self-weight of the piston rod. Please install and use a guide.
- Guides with a large difference between static and dynamic friction will have unstable operation.

■ Do not disassemble this product. If disassembled, performance may no longer be maintained. Furthermore, only consumable parts are not provided for this product.

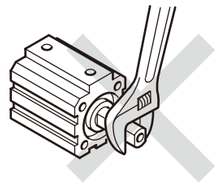
■ Since the U series uses fluorine-based grease, smoking cigarettes, etc. with it adhered to your hands may generate harmful gases and cause harm to the human body. Please be careful.

5. Tandem Type SSD2-W

■ Remove the nut included to the tip of the main body's through-bolt (rod side) before mounting.
This nut is for fixing Cylinder 1 and Cylinder 2. It is not for mounting.

6. Non-rotating Type SSD2-M, DM

■ When fixing a workpiece to the end of the piston rod, retract the piston rod to the stroke end, place a wrench on the part of the rod parallel section that extends outward, and tighten, taking care that the tightening torque is not applied to the cylinder body.



7. Double Rod, Non-rotating Type SSD2-DM

■ Please do not apply torque in opposite directions to the piston rods on both sides of the cylinder. If torque is applied, the fastening parts of internal components may loosen, potentially leading to unforeseen situations. Also, when attaching or detaching a load, fix the flats on the piston rod of the side where the load is included, and ensure that no torque is applied to the non-rotating guide part.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

SSG

Guided Compact Cylinder

ø12, ø16, ø20, ø25, ø32, ø40, ø50
ø63, ø80, ø100



CONTENTS

Product Introduction	330
Series System Table	332
● Double Acting, Single Rod Type (SSG)	334
External Dimensions Diagram with Switch	343
Mounting Bolt List	344
Technical Data	345
⚠Precautions for Use	346

Guided super compact cylinder **SSG Series**

Achieves both space saving and non-rotation

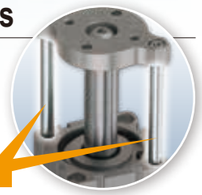
Eliminates the hassle of design and assembly! Direct load mounting possible! SSG series, equipped with guide rods and plates on the Compact Cylinder SSD series

Compared to the Compact Cylinder non-rotating type (SSD-M), the non-rotation accuracy is reduced to 1/8 for the same bore size. Also supports rotational torque on the rod. Compared to the guided cylinder (STG-M), the volume of the tube part is 44%, and the occupied area when mounting on the head side is 46%. It is a space-saving non-rotating cylinder.



Equipped with guide rods

Equipped with guide rods on the SSD series, improving lateral load resistance and non-rotation performance.



Equipped with a user-friendly plate

Equipped with a user-friendly plate on the Compact Cylinder. Eliminates the hassle of design and assembly.



Mounting compatibility

Mounting pitch compatibility with the Compact Cylinder SSD series. Smooth replacement is possible. Also, a wide range of bore sizes from ø12 to ø100 is available.

Cylinder switch grooves on 4 surfaces (ø25 to ø100)

Cylinder switches can now be mounted on the same surface as the piping port, improving visibility and maintainability.

Compact and space-saving

For the same bore and stroke, compared to the guided cylinder (STG-M), the volume of the tube part and the occupied area when mounting on the head side are about half the size or less, saving space.

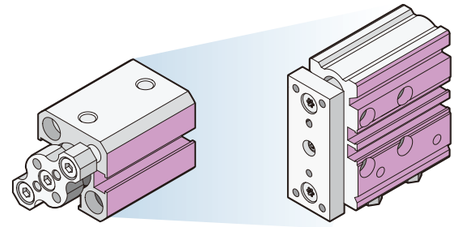
Model No.	Bore Size	Tube part volume (cm³)	Occupied area when mounting on head side (cm²)
SSG	ø12 to ø100	265.3	29.64
STG-M		609.1	64.8

*Comparison of each model ø40, stroke 50 mm.

Compared to guided cylinder (STG-M)

Product volume **44%**

Head Side Occupied area during mounting **46%**



Improved non-rotation accuracy

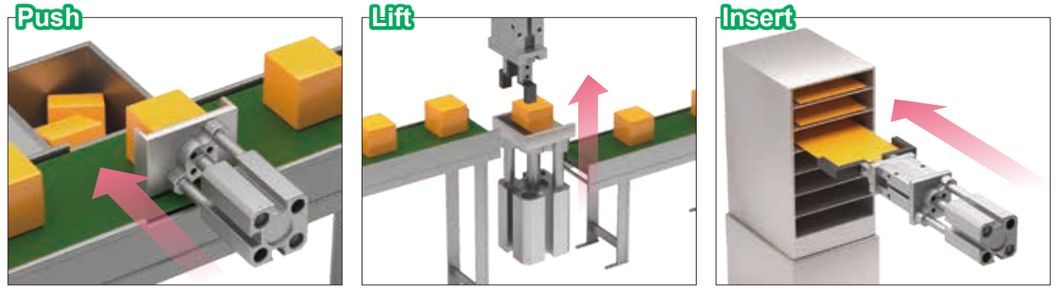
Compared to the Compact Cylinder non-rotating type (SSD2-M), the non-rotation accuracy is reduced to 1/8 for the same bore size, and it also supports rotational torque on the rod.

Model No.	Bore Size	Non-rotation accuracy	Allowable rotational torque
SSG	ø12 to ø100	±0.1°	0.57 N·m
SSD2-M	ø12 to ø63	±0.8°	Rotational torque not allowed

*Comparison of each model ø40, stroke 50 mm.

Application Examples

With a firm non-rotation mechanism, it accurately performs actions such as "pushing," "lifting," and "inserting."



SSG Series Product System

Model variations		Bore size (mm)	Stroke (mm)
Double acting/ single rod With Switch 2-color LED/ Off-delay/ With T1 switch	SSG SSG-L SSG-L1	ø12/ø16	5 10 15 20 25 30 35 40 45 50 75 100
		ø20/ø25	
		ø32/ø40	
		ø50/ø63/ø80/ø100	

System Table

Compact Cylinder SSG Series

●: Standard, ◎: Option, : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Stroke (mm)												Max. Stroke (mm)	Min. Stroke (mm)	Switch	Page
			5	10	15	20	25	30	35	40	45	50	75	100				
Double Acting, Single Rod Type with Switch 2-Color Display, Off-Delay Type with T1 Switch	SSG	ø12, ø16	●	●	●	●	●	●							30	1	◎	334
	SSG-L	ø20, ø25	●	●	●	●	●	●	●	●	●	●			50			
	SSG-L1	ø32, ø40	●	●	●	●	●	●	●	●	●	●	●	●	100			
		ø50, ø63, ø80, ø100		●	●	●	●	●	●	●	●	●	●	●				

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

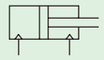


Guided Compact Cylinder Double Acting, Single Rod Type

SSG Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSG - 12 - D - 10
1 2 3 4

With Switch
(Built-in magnet for switch)

SSG-L - 12 - D - 10 - T2H - R
1 2 3 4 5 6

2-Color Display Type, Off-Delay Type with T1□ Switch (ø12, ø16 only)

SSG-L1 - 12 - D - 10 - T2YH - R
1 Model No. 2 Bore Size 3 Cushion 4 Stroke 5 Switch Model No. 6 Number of Switches

1 Model No.

Code	Contents
SSG	Double Acting Type
SSG-L	Double-acting type with switch
SSG-L1	Double Acting Type, 2-Color Display, Off-Delay Type with T1□ Switch (ø12, ø16)

2 Bore Size (mm)

Code	Contents
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Cushion

Code	Content
Blank	Without Cushion
D	With Rubber Cushion on Both Sides

4 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, 16	1 to 30	Every 1 mm
ø20, 25	1 to 50	
ø32, 40	1 to 100	
ø50 to 100	1 to 100	

*1: For standard stroke and minimum stroke with switch, refer to P. 336.

5 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator Lamp / Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	Bore Size 12	16	20	25	32	40	50	63	80	100	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□				●							
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□				●							
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2 V□				●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3 V□				●							
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□				●							
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□				●							
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□				●							
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	●	●	●	●	●	●	●	●	●	●	*4
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	●	●	●	●	●	●	●	●	●	●	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□						●	●	●	●	●	*6
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	●	●	●	●	●	●	●	●	●	●	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	●	●	●	●	●	●	●	●	●	●	
		3-wire (PNP)	—		—		T3PH□	T3PV□	●	●	●	●	●	●	●	●	●	●	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	●	●	●	●	●	●	●	●	●	●	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	●	●	●	●	●	●	●	●	●	●	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	●	●	●	●	●	●	●	●	●	●	*3
	2-Color for AC Magnetic Field		—	24 ± 10%	—		T2YD□	–			●	●	●	●	●	●	●	●	*5
			—		—		T2YDT□	–			●	●	●	●	●	●	●	●	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	●	●	●	●	●	●	●	●	●	●	
	1-Color Flexible Lead Wire Type		—	10 to 30	—		T2HR3	T2VR3	●	●	●	●	●	●	●	●	●	●	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder.
*4: T0□, T5□ switches cannot be mounted on ø12, ø16 with 5 mm stroke.
*5: T2YD□ switches cannot be mounted on ø12, ø16.
*6: T8□ switches cannot be mounted on ø12 to ø32.
*7: F-type switches can only be mounted on the piping port surface of ø25 bore size.
*8: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*9: Only T2WLH, T2WLV can be selected.
*10: F switch cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

SSG – ····· – P4□

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW - T0H
5 Switch Model No.

Specifications

Item		SSG									
Bore Size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type									
Operating Fluid		Compressed Air									
Max. working pressure	MPa	1.0									
Min. Operating Pressure	MPa	0.15				0.1					
Proof Pressure	MPa	1.6									
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)									
Port Size		M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	Without Cushion	$^{+1.0}_{0}$									
	With Rubber Cushion	$^{+2.0}_{0}$									
Operating Piston Speed	mm/s	50 to 500						50 to 300			
Cushion		No cushion/rubber cushion selectable									
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable Absorbed Energy J	Without Cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56
	With Rubber Cushion	0.03	0.05	0.10	0.16		0.44	0.75	0.78	2.51	3.92

*1: For ø32 without switch, 5 stroke, the port size will be M5.

Stroke

Stroke (mm)	Bore size (ø)									
	12	16	20	25	32	40	50	63	80	100
5	●	●	●	●	●	●				
10	●	●	●	●	●	●	●	●	●	●
15	●	●	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●	●	●
30	●	●	●	●	●	●	●	●	●	●
35			●	●	●	●	●	●	●	●
40			●	●	●	●	●	●	●	●
45			●	●	●	●	●	●	●	●
50			●	●	●	●	●	●	●	●
75					●	●	●	●	●	●
100					●	●	●	●	●	●
Min. Stroke	1									
Max. Stroke	30		50		100					

*1: For intermediate stroke, can be manufactured in 1 mm increments. The overall length dimension for intermediate stroke is the same as the standard stroke above it.
*2: For with switch, refer to the table below.

With Switch Minimum Stroke (With 1 or 2 Switches)

Bore Size (mm)	T0H/V, T5H/V	T2WL	Other switches
ø12	10	25	5
ø16			
ø20	5	20	
ø25			
ø32		15	
ø40			
ø50		10	
ø63			
ø80			
ø100			

*1: Cannot be manufactured for less than 10 mm with 2-color indicator switch.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

● Without Switch (Unit: g)

Stroke (mm) / Bore size (mm)	5	10	15	20	25	30	35	40	45	50	75	100
ø12	49	58	67	76	85	95	-	-	-	-	-	-
ø16	61	74	86	99	111	124	-	-	-	-	-	-
ø20	90	105	120	135	150	165	179	194	209	224	-	-
ø25	117	135	153	171	189	207	225	243	261	279	-	-
ø32	170	194	218	242	266	290	314	338	362	386	576	740
ø40	245	274	303	331	360	389	418	446	475	504	742	934
ø50	-	464	510	556	603	649	695	741	787	833	1206	1488
ø63	-	738	802	866	930	994	1058	1122	1185	1249	1794	2168
ø80	-	1336	1434	1533	1632	1730	1829	1928	2026	2125	2971	3525
ø100	-	2028	2154	2279	2405	2531	2657	2782	2908	3034	4163	4859

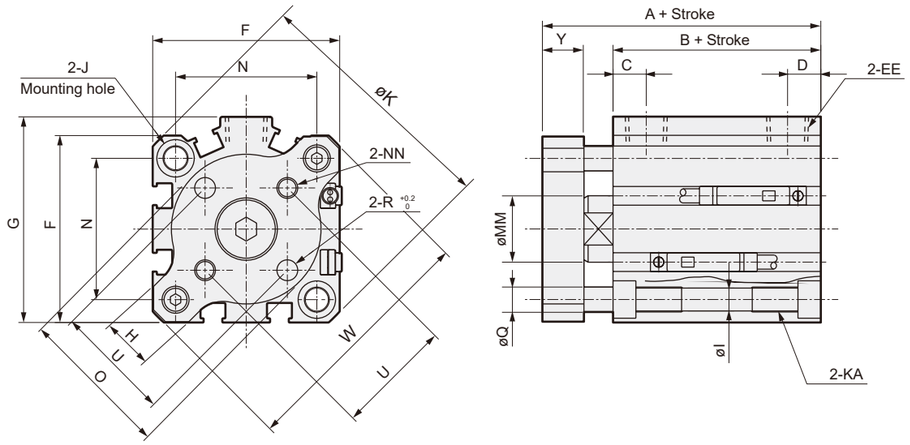
● With Switch

Stroke (mm) / Bore size (mm)	5	10	15	20	25	30	35	40	45	50	75	100
ø12	92	101	110	119	127	136	-	-	-	-	-	-
ø16	107	119	132	144	156	169	-	-	-	-	-	-
ø20	155	173	190	208	226	243	261	279	296	314	-	-
ø25	208	226	244	262	280	298	316	334	352	370	-	-
ø32	284	308	332	356	380	404	428	452	476	500	620	740
ø40	388	417	446	474	503	532	561	589	618	647	791	934
ø50	-	658	704	750	797	843	889	935	981	1027	1257	1488
ø63	-	1017	1081	1145	1209	1273	1337	1401	1464	1528	1848	2168
ø80	-	1749	1847	1946	2045	2143	2242	2341	2439	2538	3031	3525
ø100	-	2595	2721	2846	2972	3098	3224	3349	3475	3601	4230	4859

Theoretical Thrust Table (Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^{2}	1.13×10^{2}
	Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	-	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	80.4	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	60.3	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Outline Dimension Drawing



● Precautions regarding switch mounting grooves
*1: For bore sizes ø12 to ø20, there are no switch grooves on the piping port surface.
*2: For bore sizes ø12, 16, the switch grooves are only in 1 row on each surface.
*3: For bore size ø25, only F-type switches can be mounted on the piping port surface.

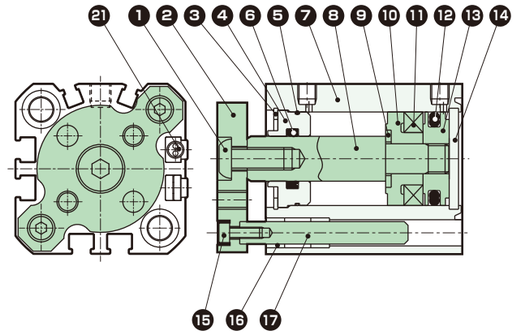
Code	Dimension with switch		Dimension without switch		Common dimension						
Bore Size	A *1, *5	B *1, *5	A *1, *4	B *1, *4	C *3	D *3	EE	F	G	H	I
ø12	31.5 (36.5)	22 (27)	26.5	17	5.5	5.5	M5	25	-	8.5	3.5
ø16	31.5 (36.5)	22 (27)	26.5	17	5.5	5.5	M5	29	-	9	3.5
ø20	42	29.5	32	19.5	8	5.5	M5	36	-	10	5.5
ø25	45.5	32.5	35.5	22.5	11	6	M5	40	-	11	5.5
ø32	50	33	40 (50)	23 (33)	8 (10)	8 (5.5)	Rc1/8 *2	45	49.5	12	5.5
ø40	56.5	39.5	46.5 (56.5)	29.5 (39.5)	12 (11.5)	8.5 (8)	Rc1/8	52	57	12	5.5
ø50	60.5	40.5	50.5 (60.5)	30.5 (40.5)	10.5	10.5	Rc1/4	64	71	15	6.9
ø63	66	46	56 (66)	36 (46)	13	11	Rc1/4	77	84	18	8.7
ø80	77.5	53.5	67.5 (77.5)	43.5 (53.5)	16	13	Rc3/8	98	104	22	10.5
ø100	89	63	79 (89)	53 (63)	23	15	Rc3/8	117	123.5	22	10.5

Code	Common dimension										
Bore Size	J	K	KA	MM	N	NN	O	Q	R	U	Y	W
ø12	6.5 Counterbore depth 3.5	32	M4 depth 7	6	15.5	M3	15	5	3	10±0.1	6	31
ø16	6.5 Counterbore depth 3.5	38	M4 depth 7	8	20	M3	19	5	3	14±0.1	6	37
ø20	9 Counterbore depth 5.5	47	M6 depth 11	10	25.5	M4	26	6	4	17±0.1	8	46
ø25	9 Counterbore depth 5.5	51	M6 depth 11	12	28	M5	30	6	5	22±0.1	8	50
ø32	9 Counterbore depth 5.5	60	M6 depth 11	16	34	M5	36	6	5	28±0.2	10	59
ø40	9 Counterbore depth 5.5	69	M6 depth 11	16	40	M5	42	6	5	33±0.2	10	68
ø50	11 Counterbore Depth 6.5	86	M8 depth 13	20	50	M6	54	8	6	42±0.2	12	85
ø63	14 Counterbore depth 9	103	M10 depth 25	20	60	M6	68	12	6	50±0.2	12	102
ø80	17.5 Counterbore depth 11	132	M12 depth 28	25	77	M8	88	14	8	65±0.2	14	131
ø100	17.5 Counterbore depth 11	156	M12 depth 28	30	94	M10	106	14	10	80±0.2	16	155

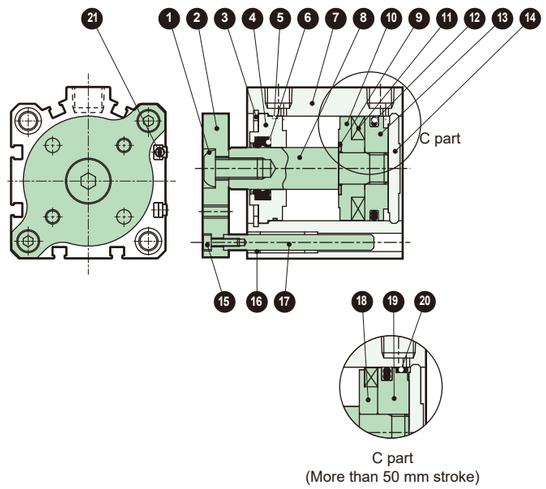
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For ø32 without switch, 5 stroke, the port size will be M5.
*3: Dimensions in ( ) for C and D are values for 5 strokes without switch.
*4: Dimensions in ( ) for A and B are values for 75 and 100 strokes.
*5: Dimensions in ( ) for A and B are values when equipped with a 2-color indicator switch (L1).
***6: For dimensions with each switch, refer to P. 343.**

Internal Structure Diagram/Material (Bore size: ø12 to ø50 without Cushion)

●SSG-L-12 to 25 (double acting with switch)



●SSG-L-32 to 50 (double acting with switch)



C part
(More than 50 mm stroke)

● SSG-12 to 25 (Double Acting Type)

● SSG-32 to 50 (Double Acting Type)

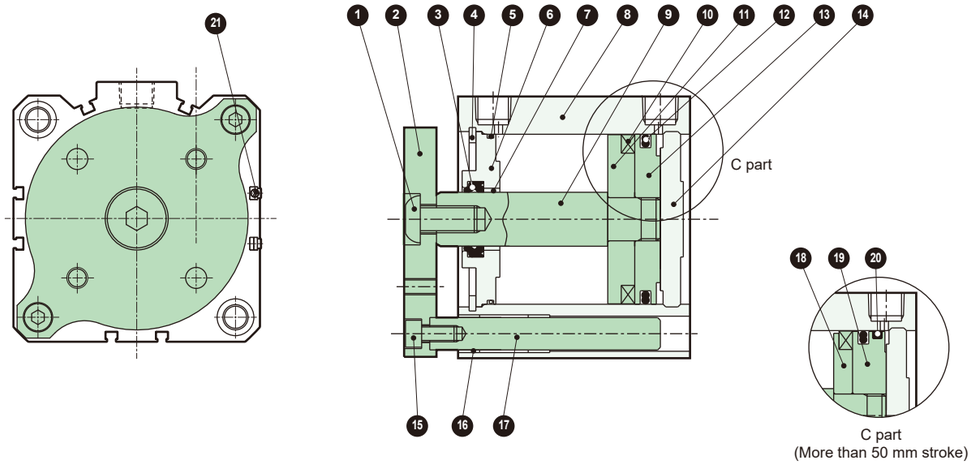
C part
(More than 50 mm stroke)

Do not disassemble

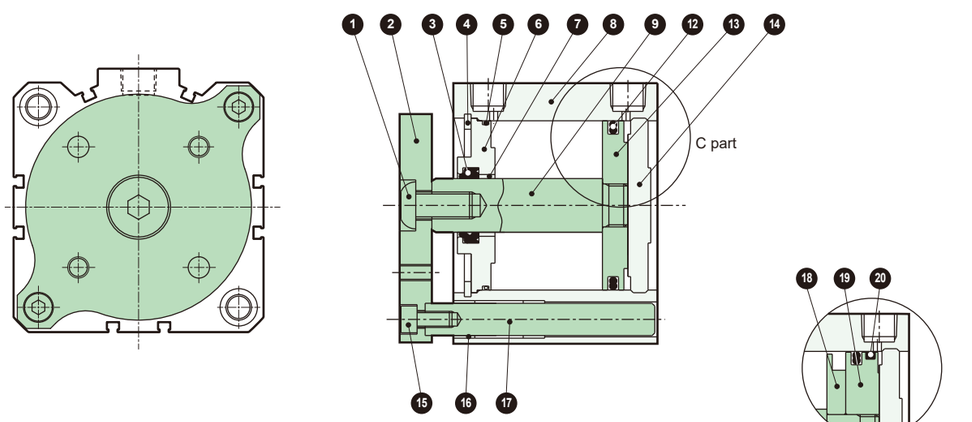
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hex socket bolt (ø12) Hex socket button head bolt (ø16 to 50)	Alloy Steel	Zinc Chromate	11	Magnet	Plastic	
				12	Piston Packing	Nitrile Rubber	
2	End plate	Aluminum Alloy	Alumite	13	Piston	Aluminum Alloy	Chromate
3	C-type retaining ring	Steel	Phosphate coating	14	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	Alumite
4	Rod Metal	Aluminum Alloy	Alumite				
5	O-ring	Nitrile Rubber		15	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
6	Rod Packing	Nitrile Rubber		16	Metal	Oil-Impregnated Bearing Alloy	
7	Cylinder Body	Aluminum Alloy	Hard Anodized	17	Guide rod	Stainless Steel	ø20 to ø50: Industrial chrome plating
8	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	18	Spacer	Aluminum Alloy	Chromate
				19	Piston	Aluminum Alloy	Chromate
9	Spacer washer	Stainless Steel	ø20 to 50 only	20	Wear Ring	Polyacetal	
10	Spacer	ø12: Aluminum alloy ø16 to ø50: Special resin	ø12: Chromate	With Switch			
				21	Switch		

Internal Structure Diagram/Material (Bore size: ø63 to ø100 without Cushion)

● SSG-L-63 to 100 (Double Acting Type with Switch)



● SSG-63 to 100 (Double Acting Type)

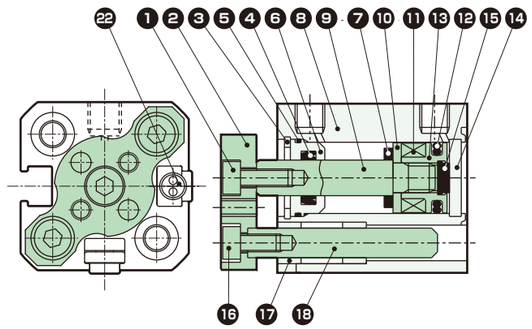


Do not disassemble

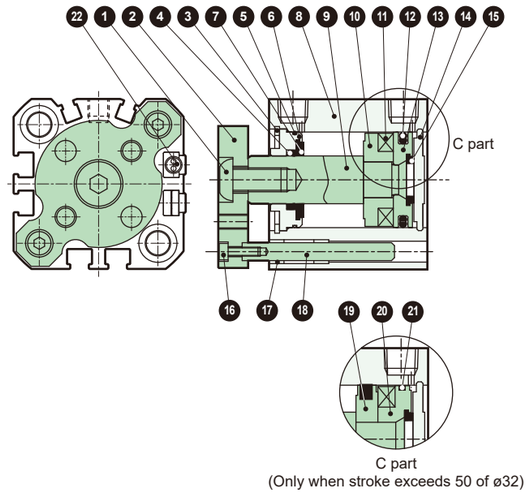
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hex Socket Button Head Bolt	Alloy Steel	Zinc Chromate	12	Piston Packing	Nitrile Rubber	
2	End plate	Aluminum Alloy	Alumite	13	Piston	Aluminum Alloy	Chromate
3	Rod Packing	Nitrile Rubber		14	Cover	Aluminum Alloy	Alumite
4	C-type retaining ring	Steel	Phosphate coating	15	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
5	O-ring	Nitrile Rubber		16	Metal	Oil-Impregnated Bearing Alloy	
6	Rod Metal	Aluminum Alloy	Chromate	17	Guide rod	Steel	Industrial Hard Chrome Plating
7	Bushing	Bearing Alloy		18	Spacer	Aluminum Alloy	Chromate
8	Cylinder Body	Aluminum Alloy	Hard Anodized	19	Piston	Aluminum Alloy	Chromate
9	Piston Rod	Steel	Industrial Hard Chrome Plating	20	Wear Ring	Polyacetal	
10	Magnet	Plastic		With Switch			
11	Spacer	Aluminum Alloy	Chromate	21	Switch		

Internal Structure Diagram/Material (Bore size: ø12 to ø32 with Rubber Cushion)

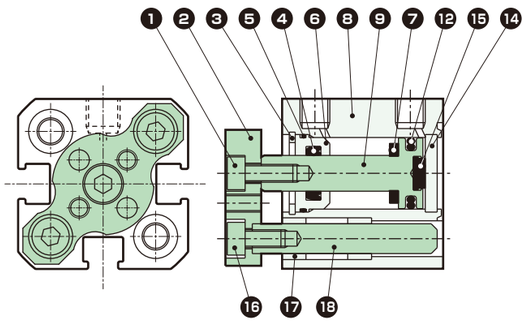
●SSG-L-12D (double acting with switch)



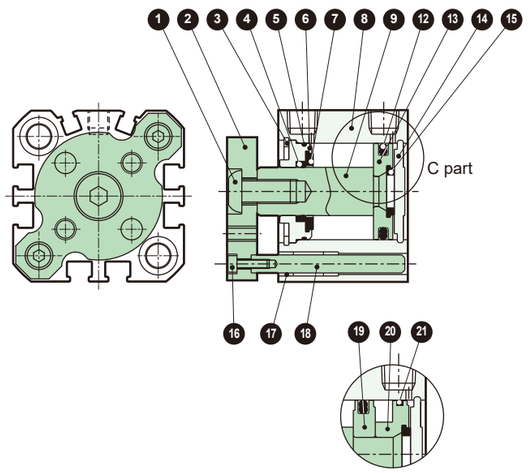
●SSG-L-16D to 32D (double acting with switch)



● SSG-12D (Double Acting Type)



● SSG-16D to 32D (Double Acting Type)

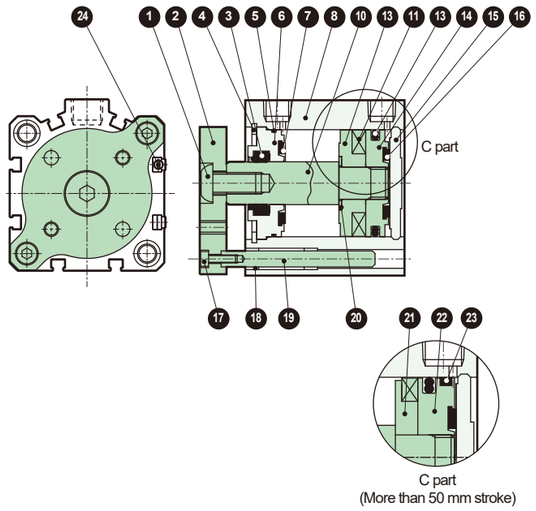


Do not disassemble

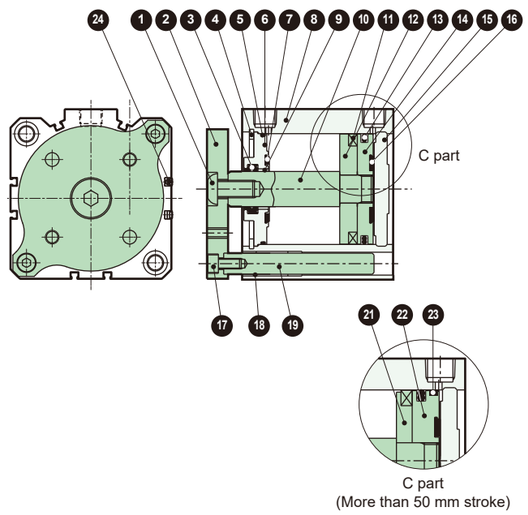
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hex socket bolt (ø12) Hex socket button head bolt (ø16 to ø32)	Alloy Steel	Zinc Chromate	12	Piston Packing	Nitrile Rubber	
				13	Piston	Aluminum Alloy	Chromate
2	End plate	Aluminum Alloy	Alumite	14	Cover	ø12 to ø25: Stainless steel ø32: Aluminum alloy	ø32: Alumite
3	C-type retaining ring	Steel	Phosphate coating				
4	Rod Packing	Nitrile Rubber		15	Cushion Rubber	Urethane Rubber	
5	O-ring	Nitrile Rubber		16	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
6	Rod Metal	Aluminum Alloy	Alumite	17	Metal	Oil-Impregnated Bearing Alloy	
7	Cushion Rubber	Urethane Rubber		18	Guide rod	Stainless Steel	ø20 to ø32: Industrial chrome plating
8	Cylinder Body	Aluminum Alloy	Hard Anodized	19	Spacer	Aluminum Alloy	Chromate
9	Piston Rod	ø12 to ø25: Stainless steel ø32: Steel	ø16 to ø32: Industrial chrome plating	20	Piston	Aluminum Alloy	Chromate
				21	Wear Ring	Polyacetal	
10	Spacer	Aluminum Alloy	Chromate	With Switch			
11	Magnet	Plastic		22	Switch		

Internal Structure Diagram/Material (Bore size: ø40 to ø100 with Rubber Cushion)

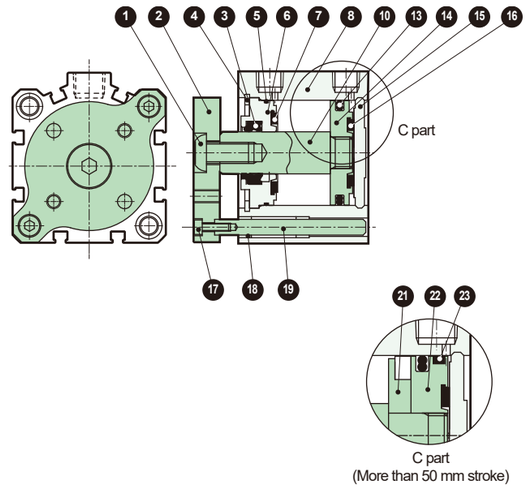
●SSG-L-40D, 50D (double acting with switch)



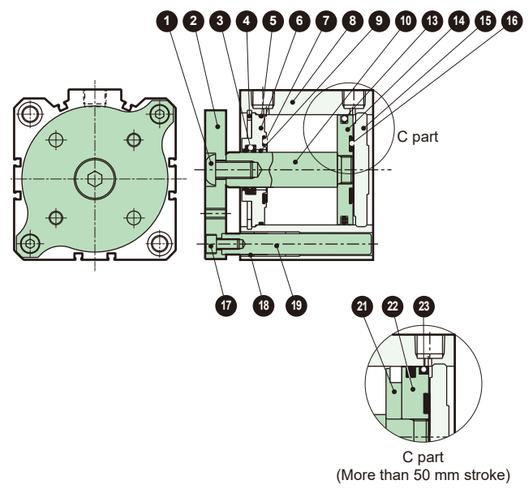
●SSG-L-63D to 100D (double acting with switch)



● SSG-40D, 50D (Double Acting Type)



● SSG-63D to 100D (Double Acting Type)

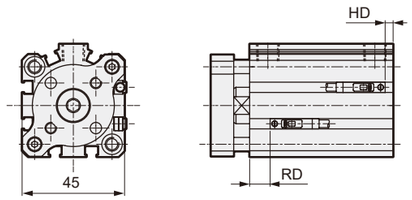


Do not disassemble

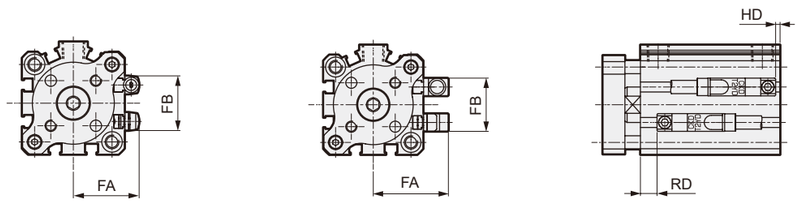
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hex Socket Button Head Bolt	Alloy Steel	Zinc Chromate	14	Piston	Aluminum Alloy	Chromate
2	End plate	Aluminum Alloy	Alumite	15	Cover	Aluminum Alloy	Alumite
3	Rod Packing	Nitrile Rubber		16	Cushion Rubber	Urethane Rubber	
4	C-type retaining ring	Steel	Phosphate coating	17	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
5	O-ring	Nitrile Rubber		18	Metal	Oil-Impregnated Bearing Alloy	
6	Rod Metal	Aluminum Alloy	ø40, ø50: Alumite ø63 to ø100: Chromate	19	Guide rod	ø40, ø50: Stainless steel ø63 to ø100: Steel	Industrial Hard Chrome Plating
7	Cushion Rubber	Urethane Rubber		20	Spacer washer	Stainless Steel	
8	Cylinder Body	Aluminum Alloy	Hard Anodized	21	Spacer	Aluminum Alloy	Chromate
9	Bushing	Bearing Alloy		22	Piston	Aluminum Alloy	Chromate
10	Piston Rod	Steel	Industrial Hard Chrome Plating	23	Wear Ring	Polyacetal	
11	Magnet	Plastic		With Switch			
12	Spacer	Aluminum Alloy	Chromate	24	Switch		
13	Piston Packing	Nitrile Rubber					

SSG Series Switch Attached Outline Dimension Drawing

● T0H/V, T5H/V, T2H/V, T3H/V, T2HR3/T2VR3, T3PH/V, T2WH/V, T3WH/V, T2WLH/V



● T8H/V, T2JH/V, T1H/V, T2YD, T2YDT



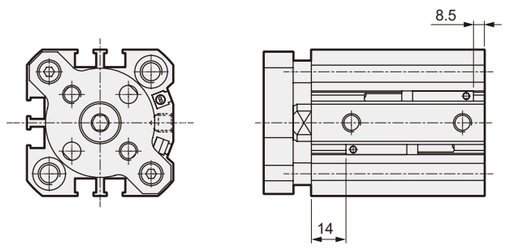
Code	T0, T5, T2, T2HR, T3, T3P		T2W, T3W, T2WL		T8				T2J				T1, T2YD, T2YDT			
Bore Size (mm)	RD *2, *3	HD *2, *3	RD *2, *3	HD *2, *3	FA	FB	RD *2, *3	HD *2, *3	FA	FB	RD *2, *3	HD *2, *3	FA	FB	RD *2, *3	HD *2, *3
ø12	2.5	0	4	7.5	-	-	-	-	18.8	8	1	4.5	23.8	8	1	4.5
ø16	2	0	3.5	7.5	-	-	-	-	20.8	8	0.5	4.5	25.8	8	0.5	4.5
ø20	6.5	3	8	4.5	-	-	-	-	24.3	16	5	1.5	29.3	16	5	1.5
ø25	9.5	3	11	4.5	-	-	-	-	26.3	17	8	1.5	31.3	17	8	1.5
ø32	9 (10.5)	3.5 (2)	10.5 (13)	5 (3.5)	-	-	-	-	28.8	24	7.5 (9)	2 (0.5)	33.8	24	7.5 (9)	2 (0.5)
ø40	12 (14.5)	7 (4.5)	13.5 (16)	8.5 (6)	32.3	31	6 (8.5)	1 (0)	32.3	31	10.5 (13)	5.5 (3)	37.3	31	10.5 (13)	5.5 (3)
ø50	12.5 (9.5)	7.5 (10.5)	14 (11)	9 (12)	38.3	32	6.5 (3.5)	1.5 (4.5)	38.3	32	11 (8)	6 (9)	43.3	32	11 (8)	6 (9)
ø63	13 (10)	12.5 (15.5)	14.5 (11.5)	14 (17)	44.8	32	7 (4)	6.5 (9.5)	44.8	32	11.5 (8.5)	11 (14)	49.8	32	11.5 (8.5)	11 (14)
ø80	15.5 (12)	17.5 (21)	17 (13.5)	19 (22.5)	55.3	32	9.5 (6)	11.5 (15)	55.3	32	14 (10.5)	16 (19.5)	60.3	32	14 (10.5)	16 (19.5)
ø100	19.5 (16)	23 (26.5)	21 (17.5)	24.5 (28)	64.8	32	13.5 (10)	17 (20.5)	64.8	32	18 (14.5)	21.5 (25)	69.8	32	18 (14.5)	21.5 (25)

*1: RD and HD dimensions for 5 strokes differ from these dimensions due to individual adjustment.
*2: Dimensions in ( ) for symbols RD and HD for ø32 to ø100 are values for 75 and 100 strokes.
*3: For RD and HD dimensions of ø16 with rubber cushion, refer to Table 1.

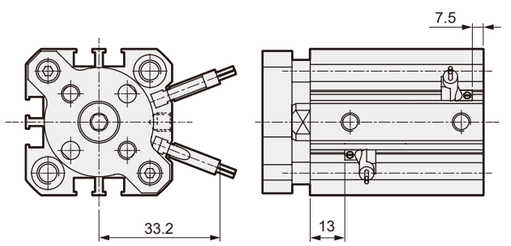
Table 1

	T0, T5, T2, T2HR, T3, T3P		T2W, T3W, T2WL		T2J		T1, T2YD, T2YDT	
	RD	HD	RD	HD	RD	HD	RD	HD
ø16	3.5	0	5	6	2	3	2	3

●F2H/V, F3H/V, F3PH/V, F2YH/V, F3YH/V



● F2S, F3S



Mounting Bolt Model Number Notation Method

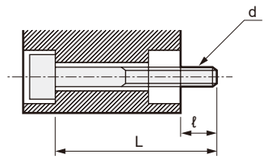
Model No. Notation Method

SSD - **BOLT** - **d×L** Refer to the following table for "d" and "L".

Mounting bolt size
("d", "L" refer to the table below)

Note) Shipped as a set of 4, but 2 are used for this product.

How to Read the List



Material: Steel
Treatment: Black Oxide

d: Mounting bolt screw diameter
L: Mounting bolt length
ℓ : Mating side screw-in possible length
(Note) Mounting bolts are indicated by d×L.

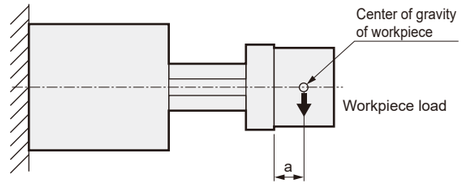
Example) For SSG-L-32D-30...SSD-BOLT-M5X65

Code / Bore	ℓ	d	L		
			50 strokes or less		75, 100 strokes
			Without Switch	With Switch	
ø12·16	6.5	M3	20 + Stroke	25 + Stroke (*1)	
ø20	6	M5	20 + Stroke	30 + Stroke	
ø25	8	M5	25 + Stroke	35 + Stroke	
ø32	7.5	M5	25 + Stroke	35 + Stroke	35 + Stroke
ø40	6	M5	30 + Stroke	40 + Stroke	40 + Stroke
ø50	11	M6	35 + Stroke	45 + Stroke	45 + Stroke
ø63	13	M8	40 + Stroke	50 + Stroke	50 + Stroke
ø80	17.5	M10	50 + Stroke	60 + Stroke	60 + Stroke
ø100	18	M10	60 + Stroke	70 + Stroke	70 + Stroke

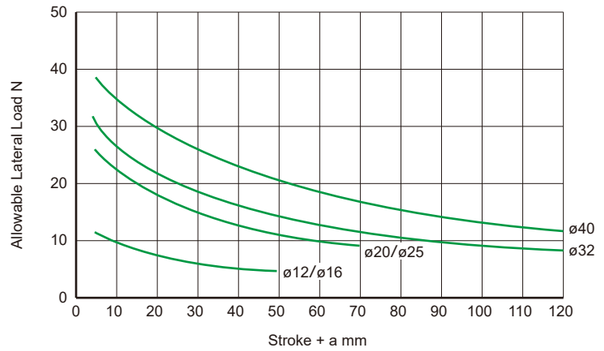
*1: For SSG-L1, it will be "30 + Stroke".

Technical Data

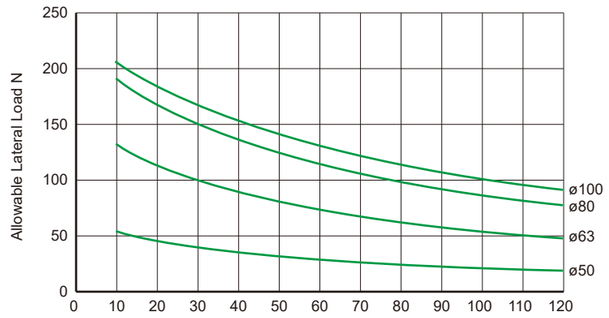
Allowable Lateral Load



ø12 to ø40

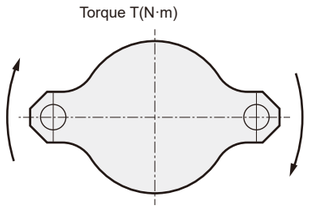


ø50 to ø100



The allowable lateral load value is the value when the load acts on the end face of the end plate.
If the center of gravity of the workpiece included to the end plate is offset, replace the offset amount with stroke for selection.

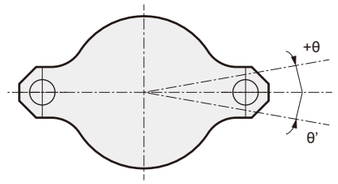
Allowable rotational torque



Unit: N·m

Bore Size (mm)	Stroke							
	5	10	20	30	40	50	75	100
12	0.12	0.10	0.080	0.066				
16	0.16	0.13	0.10	0.085				
20	0.40	0.35	0.28	0.23	0.20	0.17		
25	0.44	0.38	0.31	0.25	0.22	0.19		
32	0.69	0.62	0.51	0.43	0.38	0.33	0.26	0.21
40	1.1	0.99	0.83	0.72	0.63	0.57	0.45	0.37
50		1.9	1.6	1.4	1.2	1.1	0.87	0.73
63		4.3	3.7	3.3	2.9	2.6	2.1	1.8
80		7.9	6.9	6.2	5.6	5.1	4.2	3.6
100		12	11	9.9	9.0	8.3	6.9	5.9

Non-rotation accuracy (Reference value)



Bore size (mm)	Non-rotation Accuracy θ (degrees)
ø12·16	±0.2
ø20, 25, 32, 40	±0.1
ø50, 63, 80, 100	±0.08

(PULL time initial value)
Note: (Excluding guide rod deflection amount)

To Use This Product Safely

Be sure to read this before use.

For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

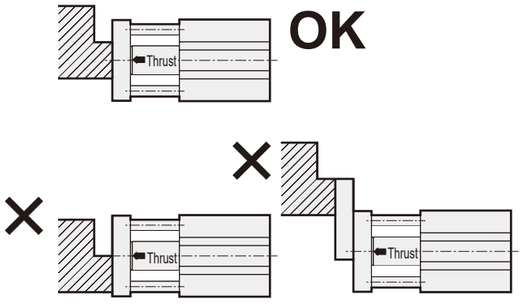
During Design / Selection

Caution

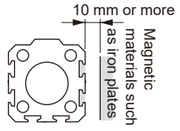
■ Use within the allowable load. Exceeding the allowable lateral load or allowable rotational torque may cause damage. Refer to the technical data on P. 345.

■ Do not use as a stopper. Use this product for applications such as pushers and lifters where impact lateral loads are not applied.

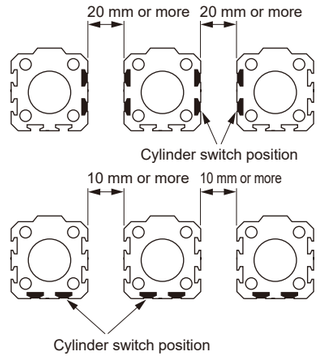
■ When used by pressing in the middle of the stroke, use it so that the thrust acting on the end plate is applied in the axial direction of the piston rod. When pressing in the middle of the stroke, such as with a clamp, thrust acts on the end plate, and pressing at an eccentric position may cause component damage. Use with the axis of the piston rod as shown in the diagram below.



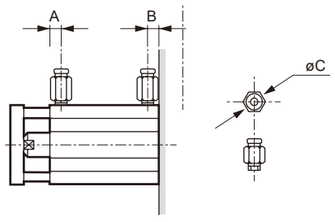
■ If there is a magnetic material such as an iron plate near the cylinder switch, it may cause malfunction. Maintain a distance of 10 mm or more from the cylinder surface. (Same for all bore sizes)



■ If cylinders are adjacent, it may cause cylinder switch malfunction. Maintain the following distance from the cylinder surface. (Same for all bore sizes)



■ Always use a speed controller when piping. There are restrictions on usable piping fittings. Refer to the following and use accordingly.



Item / Bore size (mm)	Port Size	Port position dimension A	Port position dimension B	Usable Fittings	Fitting outer diameter øC	Unusable Fittings
ø12	M5	5.5	5.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5	ø11 or less	GWS6-M5
ø16						
ø20		8	5.5			
ø25		11	6			
ø32	Rc1/8 *1	8	8	SC3W-6-4,6,8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less	GWS10-6 GWL8-6 GWL10-6
ø40		12	8.5			
ø50	Rc1/4	10.5	10.5	SC3W-8-6,8,10 GWS4-8 GWS6-8 GWS10-8 GWL4 to 12-8	ø21 or less	GWS12-8
ø63		13	11			
ø80	Rc3/8	16	13	SC3W-10-6,8,10 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø21 or less	-
ø100		23	15			

*1: For ø32 without switch, 5 strokes, the port diameter will be M5. For port position dimensions, refer to the outline dimension drawing.

■ Avoid making dents, scratches, etc., on the end plate surface that would impair its flatness. The flatness of the mating side included to the end plate should be 0.05 mm or less.

■ Allowable absorbed energy value
Use within the range of allowable absorbed energy. If used exceeding the allowable absorbed energy, provide a separate external shock absorber. For the allowable absorbed energy value, refer to the specifications section.

During Use

Caution

■ Do not disassemble this product. If disassembled, performance may no longer be maintained.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual .

Space-Saving Type

SSD
Compact Cylinder

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160



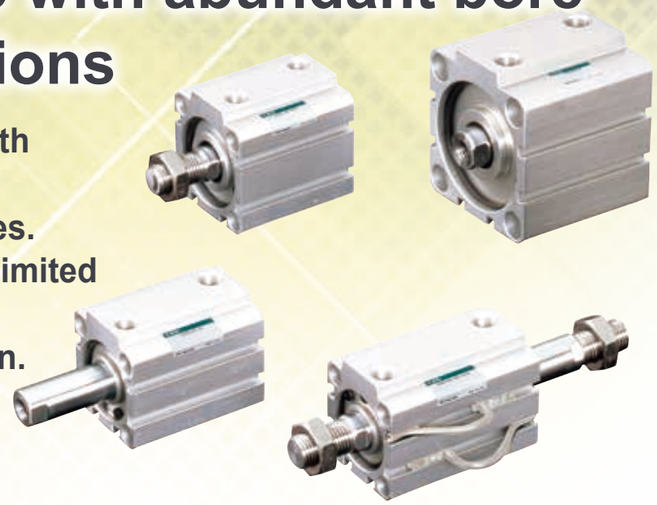
CONTENTS

Product Introduction	350
Series System Table	352
Variation / Option combinability table	356
● Double Acting, Single Rod Type (SSD)	362
● Double Acting, Single Rod, High Load Type (SSD-K)	388
● Single Acting, Push Type (SSD-X)	404
● Single Acting, Retracting Type (SSD-Y)	404
● Double Acting, Heat Resistant Type (SSD-T)	426
● Double Acting with Heat Resistant Cylinder Switch (SSD-T1L)	432
● Double Acting, High Load Type with Rubber Air Cushion (SSD-K-*C)	446
● Double Acting, Fall Prevention Type (SSD-Q)	456
● Double Acting, Creep Speed Type (SSD-F, SSD-KF)	474
● Double Acting, Low Speed Type (SSD-O)	480
● Double Acting, High Load, Low Friction Type (SSD-KU)	486
● Double Acting, Double Rod Type (SSD-D)	490
● Double Acting, Back-to-Back Type (SSD-B)	506
● Double Acting, Tandem Type (SSD-W)	516
● Double Acting, Non-rotating Type (SSD-M)	526
● Double Acting, Cutting Oil Resistant Type (SSD-G2·G3)	540
● Double Acting, High Load, Cutting Oil Resistant Type (SSD-KG2·KG3)	550
● Double Acting, Coil Scraper Type (SSD-G1) / Spatter Adhesion Prevention Type (SSD-G4)	560
● Double Acting, High Load, Coil Scraper Type (SSD-KG1) / Spatter Adhesion Prevention Type (SSD-KG4)	574
● Double Acting, Double Rod, Coil Scraper Type (SSD-DG1) / Spatter Adhesion Prevention Type (SSD-DG4)	590
● Double Acting, Single Rod, Environmentally Resistant Scraper Type (SSD-G5)	604
● Double Acting, High Load, Environmentally Resistant Scraper Type (SSD-KG5)	618
● Double Acting, Single Rod Type with Strong Magnetic Field Resistant Switch (SSD-L4)	634
● Double Acting, High Load Type with Strong Magnetic Field Resistant Switch (SSD-KL4)	644
● Double Acting, Single Rod Type, Strong Magnetic Field Resistant Switch with Coil Scraper (SSD-G1L4)	654
● Double Acting, High Load Type, Strong Magnetic Field Switch with Coil Scraper (SSD-KG1L4)	664
External Dimensions Diagram with Switch	674
Accessories Outline Dimension Drawing	379
Mounting Bolt List	682
Custom Products	690
⚠Precautions for Use	696

SSD Series

Compact type with abundant bore sizes and options

Space-saving cylinder with a compact overall length compared to general types. Can be installed even in limited spaces, contributing to equipment miniaturization.



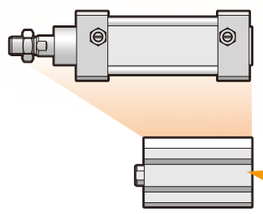
Compact overall length

Size comparison **SCA2**: SCA2-00-40B-50
SSD: SSD-L-40-50

SCA2
200.5 mm

SSD2
96.5 mm

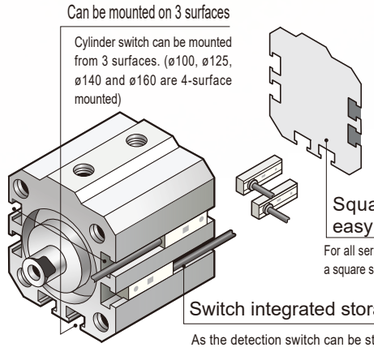
50% Down



Switch mountable on 3 surfaces

Can be mounted on 3 surfaces

Cylinder switch can be mounted from 3 surfaces. (ø100, ø125, ø140 and ø160 are 4-surface mounted)



Square form for easy design

For all series, cross-section has a square shape. Easy design.

Switch integrated storage

As the detection switch can be stored and installed in the groove of the body, there is no projection and neat space saving is realized. (excluding T2Y□ and T3Y□)

Shorter overall length with dedicated body

Supports stroke increments of 1 mm without using spacers. (Basic type only, ø125 to ø160 standard, ø12 to ø100 optional)

Same dimensions even with rubber cushion

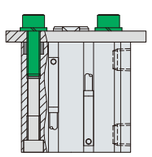
Even if rubber cushion is selected, the overall length dimension is the same.

Through hole + taps on both ends equipped as standard

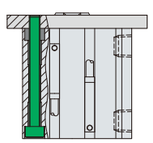
Mounting direction does not need to be selected when choosing the model No.. Contributes to reduction in design man-hours and spare parts.

Rod Side Mounting

Screw-in mounting

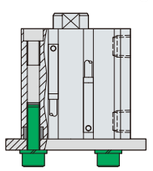


Through-bolt mounting

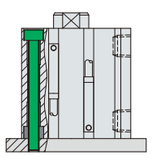


Head Side Mounting

Screw-in mounting

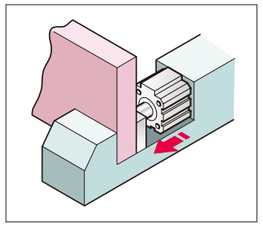


Through-bolt mounting

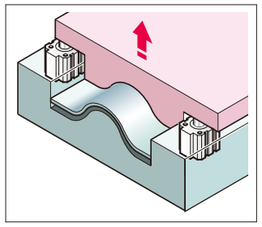


Application Examples

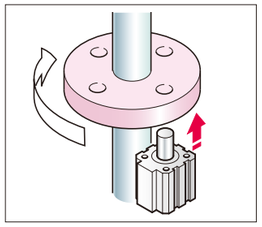
● Clamp



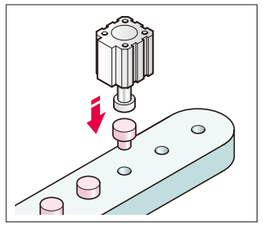
● Mold push-up



● Positioning



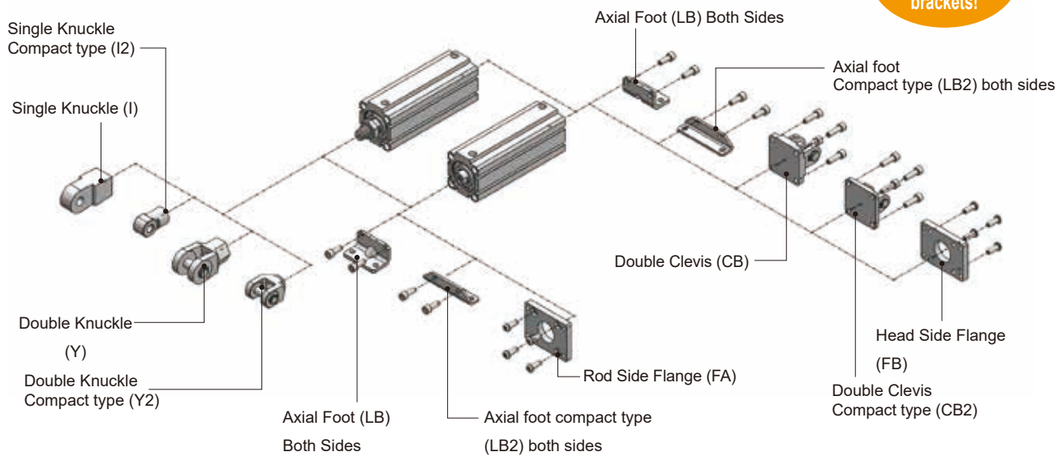
● Press-fitting



Abundant Mounting Brackets

Achieves high design flexibility with a wide variety of mounting brackets.

Compatible with various mounting brackets!



SSD Series Product System

Series		Bore size (mm)
Single rod	SSD	ø12 to ø160
Single rod high load	SSD-K	ø12 to ø100
Single Acting, Push Type	SSD-X	ø12 to ø50
Single acting, Pull Type	SSD-Y	ø12 to ø50
Heat resistance	SSD-T	ø12 to ø100
With heat resistant cylinder switch	SSD-T1L	ø16 to ø63
High load with rubber-air cushioned	SSD-K-□C	ø20 to ø100
Position locking	SSD-Q	ø16 to ø100
Fine speed	SSD-F	ø12 to ø100
High load/fine speed	SSD-KF	ø12 to ø100
Low speed	SSD-O	ø12 to ø100
High load/low friction	SSD-KU	ø20 to ø100
Double rod	SSD-D	ø12 to ø160
Back to back	SSD-B	ø12 to ø100

Series		Bore size (mm)
Two-stage	SSD-W	ø12 to ø100
rotation-stop	SSD-M	ø12 to ø63
Coolant proof	SSD-G2/G3	ø16 to ø100
High load/coolant proof	SSD-KG2/G3	ø16 to ø100
Anti-spatter adherence	SSD-G1/G4	ø25 to ø100
High load, anti-spatter adherence	SSD-KG1/G4	ø25 to ø100
Double rod, anti-spatter adherence	SSD-DG1/G4	ø25 to ø100
Environment-resistant scraper	SSD-G5	ø20 to ø100
High load/environment-resistant scraper	SSD-KG5	ø20 to ø100
With strong magnetic field proof switch	SSD-L4	ø40 to ø100
With strong magnetic field proof switch and coil scraper	SSD-G1L4	ø40 to ø100
High load strong magnetic field proof with switch	SSD-KL4	ø40 to ø100
High load with strong magnetic field proof switch and coil scraper	SSD-KG1L4	ø40 to ø100

System Table

Compact Cylinder SSD Series

*For high load type with strong magnetic field resistant switch, refer to P. 354.

●: Standard, ◎: Option, ○: Custom Products, △: Available depending on conditions (Contact CKD) : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Standard Stroke (mm) 5	10	15	20	25	30	40	50	60	70	80	90	100	Min. Stroke (mm)	Max. Stroke (mm)	Intermediate Stroke (per mm)	Option: Rod end male thread N	Option: Dedicated body for intermediate stroke S	Mounting bracket: Axial foot LB	Axial foot (Compact type) LB2	Double Clevis CB	Double Clevis (Compact type) CB2	Rod Side Flange FA	Head Side Flange FB	Switch	Page
Double Acting, Single Rod Type with Switch Off-delay/T1□ switch	SSD SSD-L SSD-L1	ø12, ø16	●	●	●	●	●	●								1	30	1	◎	◎	◎	◎	◎	◎	◎	◎	◎	362
		ø20, ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎	◎	◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎	◎	◎	◎	◎	◎	◎	◎		
		ø125, ø140, ø160		●		●		●	●	●	●	●	●	●	●		300		◎	●	◎	△	◎	△	△	△		
Single Acting, Push Type with Switch Off-delay/T1□ switch	SSD-X SSD-XL SSD-XL1	ø12, ø16, ø20	●	●												5	10	–	◎		◎	◎	◎	◎	◎	◎	◎	404
		ø25, ø32	●	●													10		◎		◎	◎	◎	◎	◎	◎		
		ø40, ø50		●		●											20		◎		◎	◎	◎	◎	◎	◎		
Single Acting, Retracting Type with Switch Off-delay/T1□ switch	SSD-Y SSD-YL SSD-YL1	ø12, ø16, ø20	●	●												5	10	–	◎		◎	◎	◎	◎	◎	◎	◎	404
		ø25, ø32	●	●													10		◎		◎	◎	◎	◎	◎	◎		
		ø40, ø50		●		●											20		◎		◎	◎	◎	◎	◎	◎		
Double Acting/ Heat Resistant Type	SSD-T	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎		◎	◎	◎	◎	◎	◎	◎	426
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting with Heat Resistant Cylinder Switch	SSD-T1L	ø16		●	●	●	●	●								10	30	1	◎		◎	◎	◎	◎	◎	◎	◎	432
		ø20			●	●	●	●								15			◎		◎	◎	◎	◎	◎	◎		
		ø25			●	●	●	●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
		ø32, ø40, ø50		●	●	●	●	●	●	●						10			◎		◎	◎	◎	◎	◎	◎		
		ø63		●		●		●	●	●									◎		◎	◎	◎	◎	◎	◎		
Double Acting, Fall Prevention Type with Switch	SSD-Q SSD-QL	ø16, ø20	●	●	●	●	●	●	●	●						5	100	1	◎		◎	◎	◎	◎	◎	◎	◎	456
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		200		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		300		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Creep Speed Type with Switch Off-delay/T1□ switch	SSD-F SSD-LF SSD-L1F	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎		◎	◎	◎	◎	◎	◎	◎	474
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Low Speed Type with Switch Off-delay/T1□ switch	SSD-O SSD-OL SSD-OL1	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎		◎	◎	◎	◎	◎	◎	◎	480
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Double Rod Type with Switch	SSD-D SSD-DL	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎		◎	◎			◎		◎	490
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		◎	◎			◎			
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎			◎			
		ø125, ø140, ø160		●		●		●	●	●	●	●	●	●	●	10	300		◎		◎	△			△			
Double Acting, Back-to-Back Type with Switch Off-delay/T1□ switch	SSD-B SSD-BL SSD-BL1	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎								◎	506
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎									
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎									
Double Acting, Tandem Type with Switch Off-delay/T1□ switch	SSD-W SSD-WL SSD-WL1	ø12, ø16, ø20	●	●	●	●	●	●								1	30	1	◎								◎	516
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎									
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎									
Double Acting, Non-rotating Type with Switch Off-delay/T1□ switch	SSD-M SSD-ML SSD-ML1	ø12, ø16, ø20, ø25	●	●	●	●	●	●								1	30	1	◎		◎	◎	◎	◎	◎	◎	◎	526
		ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
		ø63	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Cutting Oil Resistant Type with Switch	SSD-G2·G3 SSD-G2L·G3L	ø16, ø20	●	●	●	●	●	●								1	30	1	◎		△*1	△*1	◎	◎	△*1	◎	◎	540
		ø25, ø32, ø40, ø50	●	●	●	●	●	●	●	●							50		◎		△*1	△*1	◎	◎	△*1	◎		
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Spatter Adhesion Prevention Type with Switch	SSD-G1/G4 SSD-G1L/G4L	ø25, ø32 ø40, ø50	●	●	●	●	●	●	●	●						1	50	1	◎		◎	◎	◎	◎	◎	◎	◎	560
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Double Rod Spatter Adhesion Prevention Type with Switch	SSD-DG1/DG4 SSD-DG1L/DG4L	ø25, ø32 ø40, ø50	●	●	●	●	●	●	●	●						1	50	1	◎		◎	◎			◎		◎	590
		ø63, ø80, ø100	●	●		●		●	●	●							50		◎		◎	◎			◎			
Double Acting, Environmentally Resistant Scraper Type with Switch	SSD-G5 SSD-G5L	ø20, ø25, ø32 ø40, ø50	○	○	○	○	○	○	○	○						1	50	1	○		○	○	○	○	○	○	○	604
		ø63, ø80, ø100	○	○		○		○	○	○							50		○		○	○	○	○	○	○		

*1: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.

[High Load Type]

●: Standard, ◎: Option, ○: Custom Products, △: Available depending on conditions (Contact CKD) : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Standard Stroke (mm) 5	10	15	20	25	30	40	50	60	Standard Stroke (mm) 70	80	90	100	Min. Stroke (mm)	Max. Stroke (mm)	Intermediate Stroke (per mm)	Option: Rod end male thread N	Option: Dedicated body for intermediate stroke S	Mounting bracket: Axial foot LB	Axial foot (Compact type) LB2	Double Clevis CB	Double knuckle clevis (Compact type) CB2	Rod Side Flange FA	Head Side Flange FB	Switch	Page
Double Acting, High Load Type with Switch	SSD-K SSD-KL	ø12, ø16	●	●	●	●	●	●	●	●						1	100	1	◎	◎	◎	◎	◎	◎	◎	◎	◎	388
		ø20	●	●	●	●	●	●	●	●							200		◎	◎	◎	◎	◎	◎	◎	◎		
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		300		◎	◎	◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		300		◎	◎	◎	◎	◎	◎	◎	◎		
(Double Acting, High Load Type with Rubber Air Cushion)	SSD-K-□C	ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	5	200	1	◎		◎	◎	◎	◎	◎	◎	◎	446
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		300		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●	10	300		◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type, Creep Speed Type with Switch	SSD-KF SSD-KLF	ø12, ø16, ø20	●	●	●	●	●	●	●	●						1	100	1	◎		◎	◎	◎	◎	◎	◎	◎	474
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		150		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		200		◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type, Low Friction Type with Switch	SSD-KU SSD-KUL	ø20	●	●	●	●	●	●	●	●						5	200	1	◎		◎	◎	◎	◎	◎	◎	◎	486
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		300		◎		◎	◎	◎	◎	◎	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		300		◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type, Cutting Oil Resistant Type with Switch	SSD-KG2/KG3 SSD-KG2L/KG3L	ø16, ø20	●	●	●	●	●	●	●	●						1	100	1	◎		△*1	△*1	◎	◎	△*1	◎	◎	550
		ø25, ø32, ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●		150		◎		△*1	△*1	◎	◎	△*1	◎		
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		200		◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type, Spatter Adhesion Prevention Type with Switch	SSD-KG1/KG4 SSD-KG1L/KG4L	ø25, ø32 ø40, ø50		●	●	●	●	●	●	●	●	●	●	●	●	1	300	1	◎		◎	◎	◎	◎	◎	◎	◎	574
		ø63, ø80, ø100		●		●		●	●	●	●	●	●	●	●		300		◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type, Environmentally Resistant Scraper Type with Switch	SSD-KG5 SSD-KG5L	ø20	○	○	○	○	○	○	○	○						1	200	1	○		○	○	○	○	○	○	○	618
		ø25, ø32, ø40, ø50		○	○	○	○	○	○	○	○	○	○	○	○		300		○		○	○	○	○	○	○		
		ø63, ø80, ø100		○		○		○	○	○	○	○	○	○	○		300		○			○	○	○	○	○		

*Length measurement function (Cylinder with Linear Norm Sensor, Super Compact Type LN-A□ Series) is also available. For details, refer to "Pneumatic Cylinder ④" (No. RJ-005AA).

*1: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.

[With Strong Magnetic Field Resistant Switch]

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Standard Stroke (mm) 5	10	15	20	25	30	40	50	60	Standard Stroke (mm) 70	80	90	100	Min. Stroke (mm)	Max. Stroke (mm)	Intermediate Stroke (per mm)	Option: Rod end male thread N	Option: Dedicated body for intermediate stroke S	Mounting bracket: Axial foot LB	Axial foot (Compact type) LB2	Double Clevis CB	Double knuckle clevis (Compact type) CB2	Rod Side Flange FA	Head Side Flange FB	Switch	Page
Double Acting, Single Rod Type With Strong Magnetic Field Resistant Switch	SSD-L4	ø40, ø50				●		●	●	●						20	50	1	◎		◎	◎	◎	◎	◎	◎	◎	634
		ø63, ø80, ø100				●		●	●	●									◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type With Strong Magnetic Field Resistant Switch	SSD-KL4	ø40, ø50				●		●	●	●	●	●	●	●	●	20	150	1	◎		◎	◎	◎	◎	◎	◎	◎	644
		ø63, ø80, ø100				●		●	●	●	●	●	●	●	●		200		◎		◎	◎	◎	◎	◎	◎		
Double Acting, Single Rod Type With Strong Magnetic Field Resistant Switch With Coil Scraper	SSD-G1L4	ø40, ø50				●		●	●	●						20	50	1	◎		◎	◎	◎	◎	◎	◎	◎	654
		ø63, ø80, ø100				●		●	●	●									◎		◎	◎	◎	◎	◎	◎		
Double Acting, High Load Type With Strong Magnetic Field Resistant Switch With Coil Scraper	SSD-KG1L4	ø40, ø50				●		●	●	●	●	●	●	●	●	20	150	1	◎		◎	◎	◎	◎	◎	◎	◎	664
		ø63, ø80, ø100				●		●	●	●	●	●	●	●	●		200		◎		◎	◎	◎	◎	◎	◎		

Combination Availability Table for Variations and Option Items

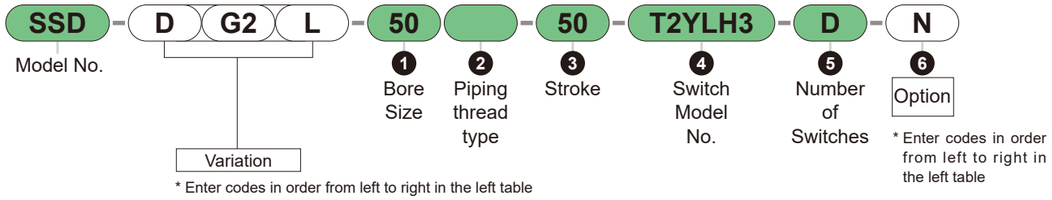
SSD (ø100 or less)

◎ Symbol: Option
○ Symbol: Custom Products
△ Symbol: Manufacturable depending on conditions (Please consult)
× Symbol: Not manufacturable

Category		Category	Variation																								Piping thread			Option	
			Double Acting Single Rod Type	Single Acting, Push Type	Single Acting, Retracting Type	Double Acting Double Rod Type	Back-to-Back Type	Two-Stage Type	With Fall Prevention	Non-Rotating Type	Heat resistant type (120°C)	Low Speed Type	With Heavy-duty Scraper	With Metal Scraper	With Cutting Oil Resistant Scraper (NBR)	With Cutting Oil Resistant Scraper (FKM)	Sputter adhesion prevention type	With Environmentally Resistant Scraper	With Cylinder Switch	With Cylinder Switch (For Strong Magnetic Field)	With Cylinder Switch (For Heat Resistance)	Low speed type	NPT (ø32 to ø100)	G (ø32 to ø100)		Piston Rod Material (Stainless Steel)	Piston Rod End Male Thread
		Code	None	X	Y	D	B	W	Q	M	T	O	G	G1	G2	G3	G4	G5	L	L4	T1L	F	NN	GN		M	N
Variation	Double Acting Single Rod Type	Blank																								◎	◎
	Single Acting, Push Type	X				×	△	○	×	×	△	○	×	△	△	△	△	△	◎	○	○	×	○	○		◎	◎
	Single Acting, Retracting Type	Y				×	○	×	×	△	○	×	△	△	△	△	△	△	◎	○	○	×	○	○		◎	◎
	Double Acting Double Rod Type	D					×	×	○	○	○	○	○	○	○	○	○	○	◎	○	○	○	○	○		◎	◎
	Back-to-Back Type	B						×	○	○	○	○	○	○	○	○	○	○	◎	○	○	○	○	○		◎	◎
	Two-Stage Type	W							×	○	○	○	△	△	△	△	△	△	◎	○	○	○	○	○		◎	◎
	With Fall Prevention	Q								△	×	△	△	△	△	△	△	△	◎	○	×	△	○	○		○	◎
	Non-Rotating Type	M									×	○	×	×	×	×	×	×	◎	○	×	○	○	○		*5	◎
	Heat resistant type (120°C)	T										×	×	○	×	×	×	×	×	×	*2	×	○	○		◎	◎
	Low Speed Type	O											×	×	×	×	×	×	◎	○	×	×	○	○		◎	◎
	With Heavy-duty Scraper	G												×	×	×	×	×	○	○	×	×	○	○		○	○
	With Metal Scraper	G1													×	×	*3	×	◎	○	○	×	○	○		○	○
	With Cutting Oil Resistant Scraper (NBR)	G2														×	×	×	◎	×	×	×	○	○		*1	◎
	With Cutting Oil Resistant Scraper (FKM)	G3															×	×	◎	×	×	×	○	○		*1	◎
	Sputter adhesion prevention type	G4																×	○	○	×	×	○	○		○	○
	With Environmentally Resistant Scraper	G5																	○	○	×	×	○	○		○	○
	With Cylinder Switch	L																		×	×	◎	○	○		◎	◎
	With Cylinder Switch (For Strong Magnetic Field)	L4																			×	○	○	○		○	◎
	With Cylinder Switch (For Heat Resistance)	T1L																				×	○	○		○	◎
	Low speed type	F																					○	○		○	◎
Piping thread	NPT (ø32 to ø100)	NN																						×		×	○
	G (ø32 to ø100)	GN																								×	○
Option	Piston rod material (stainless steel) (including C-ring)	M																									◎
	Piston Rod End Male Thread	N																									
Mounting bracket	Cylinder Switch	Separately Shown	◎	◎	◎	◎	◎	◎	◎	×	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Axial Foot Type	LB	◎	◎	◎	◎	△	△	◎	◎	◎	○	◎	*4	*4	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Axial foot type (Compact)	LB2	◎	◎	◎	◎	△	△	◎	◎	◎	○	◎	*4	*4	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Rod Side Flange Type	FA	◎	◎	◎	◎	○	○	◎	◎	◎	○	◎	*4	*4	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Head Side Flange Type	FB	◎	◎	◎	×	×	×	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Double Clevis Type	CB	◎	◎	◎	×	×	△	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Double knuckle clevis type (Compact)	CB2	◎	◎	◎	×	×	△	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○		◎	◎
	Mounting Bolt	Separately Shown	◎	◎	◎	◎	×	×	◎	◎	◎	○	◎	△	△	◎	◎	◎	◎	◎	◎	○	○		△	◎

For outline dimensions when combining variations and options, please consult separately.
*1: For "G2", "G3", the material of the piston rod and C-ring is stainless steel. The "M" code is not necessary.
*2: "T1L" is a heat-resistant specification.
*3: "G4" type has a structure including a metal scraper.
*4: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.
*5: ø12 to ø25 are options, ø32 to ø63 are custom products.

[Model Number Notation Example]



Model No. Compact Cylinder
Variation Double rod/coolant proof scraper with switch
❶Bore size: ø50 mm
❷Port Thread Type: Rc Thread
❸Stroke: 50 mm
❹Switch Model No.: Coolant proof switch, 3 m lead wire
❺Number of Switches: 2 pcs
❻Option: Rod end male thread

*1: Back-to-back type has two cylinders. When indicating each variation, use the following method.
If only S1 has a variation, enter the variation code before the S1 stroke.
(Example) SSD-B-32- = M10-30: Only S1 is non-rotating type.
If only S2 has a variation, enter the variation code before the S2 stroke.
(Example) SSD-B-32-10- = M30: Only S2 is non-rotating type.
If S1 and S2 have the same variation, enter the variation code before the bore size.
(Example) SSD- = MB-32-10-30: Both S1 and S2 are non-rotating type.

Combination Availability Table for Variations and Option Items

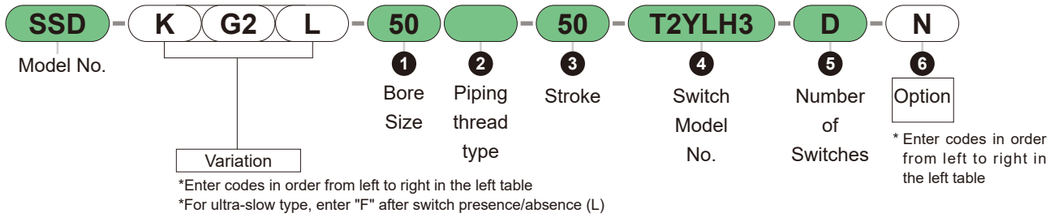
High Load Type SSD-K (ø100 or less)

◎ Symbol: Option
○ Symbol: Custom Products
△ Symbol: Manufacturable depending on conditions (Please consult)
× Symbol: Not manufacturable

Category		Code	Double Acting, High Load Type K	Double Acting Double Rod Type D	Back-to-Back Type B	Two-Stage Type W	Non-Rotating Type M	Heat resistant type (120°C) T	Low Speed Type 0	Low Friction Type U	With Heavy-duty Scraper G	With Metal Scraper G1	With Cutting Oil Resistant Scraper (NBR) G2	With Cutting Oil Resistant Scraper (FKM) G3	Sputter adhesion prevention type G4	With Cylinder Switch L	With Cylinder Switch (For Strong Magnetic Field) L4	With Cylinder Switch (For Heat Resistance) T1L	Low speed type F	NPT (ø32 to ø100) NN	G (ø32 to ø100) GN		With Rubber Air Cushion C			Piston Rod Material (Stainless Steel) M	Piston Rod End Male Thread N
Variation	Double Acting, High Load Type	K	\	○	○	○	○	○	○	◎	○	◎	◎	◎	◎	◎	◎	○	○	○	○		◎			◎	◎
	Double Acting Double Rod Type	D		\	×	×	○	○	○	×	○	○	○	○	○	○	○	○	○	○	○		○			○	○
	Back-to-Back Type	B			\	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○			○	○
	Two-Stage Type	W				\	○	○	○	×	△	△	△	△	△	○	○	○	○	○	○		×			○	○
	Non-Rotating Type	M					\	×	○	×	×	×	×	×	×	○	○	×	○	○	○		○			*8	○
	Heat resistant type (120°C)	T						\	×	×	×	○	×	×	×	×	×	*2	×	○	○		×			○	○
	Low Speed Type	O							\	×	×	×	×	×	×	○	○	×	×	○	○		○			○	○
	Low Friction Type	U								\		×	×	×	×	◎	◎	×	×	○	○		×			○	◎
	With Heavy-duty Scraper	G									\	×	×	×	×	○	○	×	×	○	○		×			○	○
	With Metal Scraper	G1										\	×	×	*6	◎	○	○	○	○	○		○			○	○
	With Cutting Oil Resistant Scraper (NBR)	G2											\	×	×	◎	×	×	×	○	○		○			*1	◎
	With Cutting Oil Resistant Scraper (FKM)	G3												\	×	◎	×	×	×	○	○		×			*1	◎
	Sputter adhesion prevention type	G4													\	×	×	×	×	○	○		○			○	○
	With Cylinder Switch	L														\	×	×	◎	○	○		◎			◎	◎
	With Cylinder Switch (For Strong Magnetic Field)	L4															\	×	○	○	○		○			○	○
	With Cylinder Switch (For Heat Resistance)	T1L																\	×	○	○		×			○	○
	Low speed type	F																	\	○	○		○			○	○
Piping thread	NPT (ø32 to ø100)	NN																		\	×		○			○	○
	G (ø32 to ø100)	GN																			\		○			○	○
Cushion	With Rubber Air Cushion	C																					\			○	◎
Option	Piston Rod Material (Stainless Steel)	M																								\	◎
	Piston Rod End Male Thread	N																									\
Mounting bracket	Cylinder Switch	Separately Shown	◎	○	○	○	○	×	○	◎	○	◎	◎	◎	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Axial Foot Type	LB	◎	○	△	△	○	○	○	◎	○	◎	*7	*7	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Axial foot type (Compact)	LB2	◎	○	△	△	○	○	○	◎	○	◎	*7	*7	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Rod Side Flange Type	FA	◎	○	○	○	○	○	○	◎	○	◎	*7	*7	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Head Side Flange Type	FB	◎	×	×	×	○	○	○	◎	○	◎	◎	◎	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Double Clevis Type	CB	◎	×	×	△	○	○	○	◎	○	◎	◎	◎	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Double knuckle clevis type (Compact)	CB2	◎	×	×	△	○	○	○	◎	○	◎	◎	◎	◎	◎	◎	○	◎	○	○		◎			◎	◎
	Mounting Bolt	Separately Shown	◎	○	×	×	○	○	○	◎	○	◎	△	◎	◎	◎	◎	○	◎	○	○		◎			△	◎

For outline dimensions when combining variations and options, please consult separately.
*1: For "G2", "G3", the material of the piston rod and C-ring is stainless steel. The "M" code is not necessary.
*2: "T1L" is a heat-resistant specification.
*3: Heat-resistant type does not have rubber cushion.
*4: Double rod type can also be handled with standard double rod type instead of high load type even when exceeding standard stroke.
*5: For tandem type, only the S1 side cylinder is high load type.
*6: "G4" type has a structure including a metal scraper.
*7: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is a custom order.
*8: ø12 to ø25 are options, ø32 to ø63 are custom products.

[Model Number Notation Example]



Model No. Compact Cylinder
Variation High load/coolant proof scraper with switch
❶Bore size: ø50 mm
❷Port Thread Type: Rc Thread
❸Stroke: 50 mm
❹Switch Model No.: Coolant proof switch, 3 m lead wire
❺Number of Switches: 2 pcs
❻Option: Rod end male thread

*1: Back-to-back type has two cylinders. When indicating each variation, use the following method.
If only S1 has a variation, enter the variation code before the S1 stroke.
(Example) SSD-B-32- = K100-30: Only S1 is high load type.
If only S2 has a variation, enter the variation code before the S2 stroke.
(Example) SSD-B-32-30- = K100: Only S2 is high load type.
If S1 and S2 have the same variation, enter the variation code before the bore size.
(Example) SSD- = KB-32-30-100: Both S1 and S2 are high load type.

Combination Availability Table for Variations and Option Items

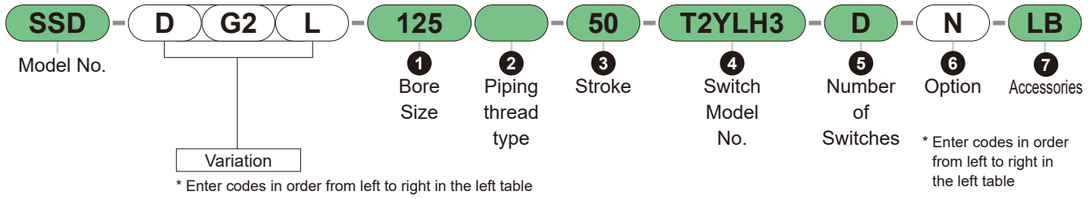
SSD (ø125 or more)

◎ Symbol: Option
○ Symbol: Custom Products
△ Symbol: Manufacturable depending on conditions (Please consult)
× Symbol: Not manufacturable

Category		Category	Variation													Piping thread			Option		
			Double Acting Single Rod Type	Double Acting Double Rod Type	Back-to-Back Type	Two-Stage Type	Heat resistant type (120°C)	Low Speed Type	With Heavy-duty Scraper	With Metal Scraper	With Cutting Oil Resistant Scraper (NBR)	With Cutting Oil Resistant Scraper (FKM)	With Cylinder Switch	Low speed type		NPT	G		Piston Rod Material (Stainless Steel)	Piston rod/C-ring material (stainless steel)	Piston Rod End Male Thread
		Code	None	D	B	W	T	O	G	G1	G2	G3	L	F		NN	GN		M	M1	N
Variation	Double Acting Single Rod Type	Blank														○	○		○	○	◎
	Double Acting Double Rod Type	D			×	×	○	○	○	○	○	○	◎	○		○	○		○	○	◎
	Back-to-Back Type	B				×	○	○	○	○	○	○	○	○		○	○		○	○	○
	Two-Stage Type	W					○	○	△	△	△	△	○	○		○	○		○	○	○
	Heat Resistant Type (120°C)	T						×	×	○	×	×	×	×		○	○		○	○	○
	Low Speed Type	O							×	×	×	×	○	×		○	○		○	○	○
	With Heavy-duty Scraper	G								×	×	×	○	×		○	○		○	○	○
	With Metal Scraper	G1									×	×	○	×		○	○		○	○	○
	With Cutting Oil Resistant Scraper (NBR)	G2										×	○	×		○	○		*1	○	○
	With Cutting Oil Resistant Scraper (FKM)	G3											○	×		○	○		*1	○	○
	With Cylinder Switch	L												○		○	○		○	○	◎
	Low speed type	F														○	○		○	○	○
Piping thread	NPT	NN															×		○	○	○
	G	GN																	○	○	○
Option	Piston Rod Material (Stainless Steel)	M																	×	○	○
	Piston rod/C-ring material (stainless steel)	M1																			○
	Piston Rod End Male Thread	N																			
Mounting bracket	Cylinder Switch	Separately Shown	◎	◎	○	○	×	○	○	○	○	○	◎	○	○	○		○	○	◎
	Axial Foot Type	LB	◎	○	△	△	○	○	○	○	△	△	◎	○	○	○		○	○	◎
	Double Clevis Type	CB	◎	×	×	△	○	○	○	○	△	△	◎	○	○	○		○	○	◎
	Mounting Bolt	Separately Shown	◎	○	×	×	○	○	○	○	△	△	◎	○	○	○		△	△	◎

For outline dimensions when combining variations and options, please consult separately.
*1: For "G2", "G3", the piston rod material is stainless steel. The "M" code is not necessary.

[Model Number Notation Example]



Model No. Compact Cylinder
● Variation Double rod/coolant proof scraper with switch
❶Bore size: ø125 mm
❷Port Thread Type: Rc Thread
❸Stroke: 50 mm
❹Switch Model No. Proximity coolant proof switch, 3 m lead wire
❺Number of Switches: 2 pcs
❻Option: Rod end male thread
❼Accessories: Axial foot

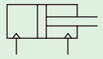
*1: Back-to-back type has two cylinders. When indicating each variation, use the following method.
If only S1 has a variation, enter the variation code before the S1 stroke.
(Example) SSD-B-125-010-30: Only S1 is low speed type.
If only S2 has a variation, enter the variation code before the S2 stroke.
(Example) SSD-B-125-10-030: Only S2 is low speed type.
If S1 and S2 have the same variation, enter the variation code before the bore size.
(Example) SSD-B0-125-10-30: Both S1 and S2 are low speed type.



Compact Cylinder Double Acting, Single Rod Type

SSD Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch)

SSD - 12 - [ ] - [ ] - 5 ——— N - LB - I

With Switch (Built-in magnet for switch)

SSD-L - 12 - [ ] - [ ] - 5 - T0H - R - N - LB - I

Off-delay with T1□ switch (ø12, ø16 only)

SSD-L1 - 12 - [ ] - [ ] - 10 - T2JH - R - N - LB - I

1	2	3	4	5	6	7	8	9	10
Model No.	Bore Size	Piping thread type	Cushion	Stroke	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

❶Model No.

Code	Content
SSD	Double Acting/Single Rod Type
SSD-L	Double-acting, Single rod type with switch
SSD-L1	Double Acting, Single Rod Type, Off-Delay Type with T1□ Switch (ø12, ø16)

❷Bore Size (mm)

Code	Content	Code	Content
12	ø12	63	ø63
16	ø16	80	ø80
20	ø20	100	ø100
25	ø25	125	ø125
32	ø32	140	ø140
40	ø40	160	ø160
50	ø50		

❸Port Thread Type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø160)
N	NPT thread (Custom product) (ø32 to ø160)
G	G thread (Custom product) (ø32 to ø160)

❹Cushion

Code	Content
Blank	Without cushion (ø12 to ø100) (With rubber cushion (ø125 to ø160))
D	With rubber cushion (ø12 to ø100)

❺Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16	1 to 30	Every 1 mm
ø20 to ø50	1 to 50	
ø63 to ø100	1 to 50	
ø125 to ø160	1 to 300	

Note: For details on stroke, please refer to P. 364.

❻Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	*7
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
5: T8 switches cannot be mounted on ø12 to ø32.
*6: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❼Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❽Option

	Code	Content	
	Blank	Rod end female thread	
	N	Rod end male thread	
*1, *4	S	Dedicated body for intermediate stroke (ø12 to ø100)	
*2, *3	M	Piston Rod Material (Stainless Steel)	

*1: For ø125 to ø160, option "S" is standard.
*2: Piston rod of ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.
*3: ø125 to ø160 are custom products.
*4: For intermediate stroke, refer to P. 365.

❾Mounting type Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type) (ø12 to ø100)	
*1	FA	Rod side flange type (ø12 to ø100)	
	FB	Head side flange type (ø12 to ø100)	
	CB	Double Clevis Type (Pin and retaining ring included)	
	CB2	Double knuckle clevis type (Compact type) (ø12 to ø100) (Pin and retaining ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 369, 370, 373, 374. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❿Accessories

	Code	Content	
	I	Single Knuckle	
	I2	Rod eye (compact)	
	Y	Double Knuckle (pin and retaining ring included)	
	Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1,R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD - ..... - XP5

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

SSD - ..... - P4*

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW - T0H

6 Switch Model No.

Specifications

Item		SSD SSD-L (With Switch)												
Bore size mm		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Actuation method		Double Acting Type												
Operating Fluid		Compressed Air												
Max. Operating Pressure MPa		1.0												
Min. Operating Pressure MPa		0.1							0.05					
Proof pressure MPa		1.6												
Ambient Temperature °C		-10 to 60 (No freezing)												
Port Size		M5				Rc 1/8		Rc 1/4		Rc 3/8				
Stroke tolerance mm	With Rubber Cushion	$^{+2.0}_{0}$												
	Without Cushion	$^{+1.0}_{0}$										–		
Operating Piston Speed mm/s		50 to 500							50 to 300					
Cushion		Rubber cushion available/unavailable selectable										With rubber cushion (Standard)		
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)												
Allowable Absorbed Energy J	With Rubber Cushion	0.03	0.05	0.10	0.16	0.16	0.44	0.75	0.78	2.51	3.92	6.52	6.52	7.78
	Without Cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	–		

Stroke Table

Stroke (mm)		Applicable Bore												
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●			
	10	●	●	●	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●						
	20	●	●	●	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●						
	30	●	●	●	●	●	●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●	●	●	●
	60											●	●	●
	70											●	●	●
	80											●	●	●
	90											●	●	●
	100											●	●	●
Minimum Stroke (mm) *1, 3		1												
Maximum Stroke (mm)		30		50								300		
Intermediate Stroke *2		Every 1 mm												

When exceeding standard stroke, it becomes high load type (K) (ø12 to ø100). For specifications, refer to P. 388, and for outline dimensions, refer to P. 392 to P. 400.

***1: For the number of switches attachable and minimum stroke, refer to the table below.**

*2: The handling method for intermediate strokes differs for ø12 to ø100 and ø125 to ø160 as follows. For details, refer to the next section.

[ø12 to ø100]

The overall length dimension for intermediate stroke is the same as the standard stroke above it.

[ø125 to ø160]

The overall length dimension for intermediate stroke will be handled with a length dedicated to intermediate stroke.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 369, P. 373.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15
ø125	5	5	10	15
ø140	5	5	10	15
ø160	5	5	10	15

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

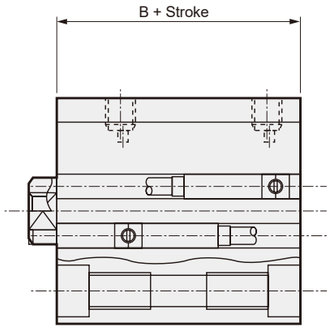
About Intermediate Stroke

● SSD Series

Item	Standard Product		Optional Product	
	Spacer type on standard stroke body		Dedicated Body Type (-S)	
Model number indication	Refer to model No. indication method.		Indicates the "Option" symbol -S in the model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.		A dedicated body is manufactured for the specified stroke.	
Stroke Range	Bore Size	Stroke Range	Bore Size	Stroke Range
	12, 16	1 to 29	12, 16	6 (11) to 29 *1
	20 to 50	1 to 49	20 to 50	6 to 49
	63 to 100	1 to 49	63 to 100	6 to 49
	125 to 160	1 to 299 *2	125 to 160	1 to 299 *2
Model Number Notation Example	Model No. SSD-32-38A +2 mm spacer is added to the standard cylinder SSD-32-40 to make it 38 mm. B + Stroke = 23 + 40 = 63		Model No. SSD-32-38-S A dedicated body for 38 strokes is manufactured. B + Stroke = 23 + 38 = 61	

*1: ( ) indicates when equipped with a switch.

*2: For ø125 to ø160, the dedicated body type is standard.



Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

● ø12 to ø100 (Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-
ø20	63	138	75	150	88	163	101	176	113	188	126	201	151	226	176	251
ø25	87	178	102	193	118	209	134	225	150	241	165	256	197	288	228	319
ø32	122	236	144	258	166	280	188	302	209	323	231	345	275	389	318	432
ø40	183	326	210	353	236	379	263	406	290	433	316	459	369	512	422	565
ø50	299	493	341	535	383	577	425	619	467	661	510	704	594	788	678	872
ø63	452	731	507	786	-	-	617	896	-	-	727	1006	838	1117	948	1227
ø80	841	1254	928	1341	-	-	1101	1514	-	-	1274	1687	1448	1861	1621	2034
ø100	1319	1886	1433	2,000	-	-	1660	2227	-	-	1888	2455	2115	2682	2343	2910

● ø125 to ø160 (Unit: kg)

Stroke (mm) / Bore Size (mm)	10		20		30		40		50		60		70		80		90		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	4.35	4.45	4.62	4.72	4.88	4.98	5.15	5.25	5.41	5.51	5.68	5.78	5.94	6.04	6.21	6.31	6.47	6.57	6.74	6.84
ø140	6.33	6.44	6.63	6.74	6.94	7.05	7.24	7.35	7.55	7.66	7.85	7.96	8.16	8.27	8.46	8.57	8.77	8.88	9.07	9.18
ø160	8.64	8.76	9.02	9.14	9.4	9.52	9.78	9.9	10.16	10.28	10.54	10.66	10.92	11.04	11.3	11.42	11.68	11.8	12.06	12.18

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^3	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3
ø125	Push	6.13×10^2	1.23×10^3	1.84×10^3	2.45×10^3	3.68×10^3	4.91×10^3	6.14×10^3	7.36×10^3	8.59×10^3	9.82×10^3	1.10×10^4	1.23×10^4
	Pull	5.65×10^2	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
ø140	Push	7.69×10^2	1.54×10^3	2.31×10^3	3.08×10^3	4.62×10^3	6.16×10^3	7.70×10^3	9.24×10^3	1.08×10^4	1.23×10^4	1.39×10^4	1.54×10^4
	Pull	7.21×10^2	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4
ø160	Push	10.1×10^3	2.01×10^3	3.02×10^3	4.02×10^3	6.03×10^3	8.04×10^3	1.01×10^4	1.21×10^4	1.41×10^4	1.61×10^4	1.81×10^4	2.01×10^4
	Pull	9.42×10^2	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50
Bore Size (mm) / Mounting bracket	**ø63**	**ø80**	**ø100**	**ø125**	**ø140**	**ø160**	
Foot (LB)	SSD-LB-63	SSD-LB-80	SSD-LB-100	SSD-LB-125	SSD-LB-140	SSD-LB-160	
Foot (LB2)	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100	–	–	–	
Flange (FA/FB)	SSD-FA-63	SSD-FA-80	SSD-FA-100	–	–	–	
Double Clevis (CB)	SSD-CB-63	SSD-CB-80	SSD-CB-100	SSD-CB-125	SSD-CB-140	SSD-CB-160	
Double knuckle clevis (CB2)	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100	–	–	–	

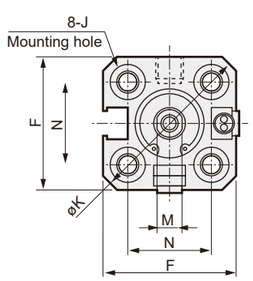
*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model No. indication method (P. 682).

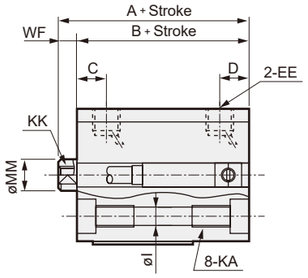
MEMO

Outline Dimension Drawing (Bore size: ø12 to ø25)

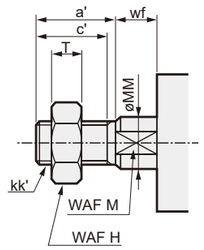
● SSD-(L)-12 to 25

ø12, ø16

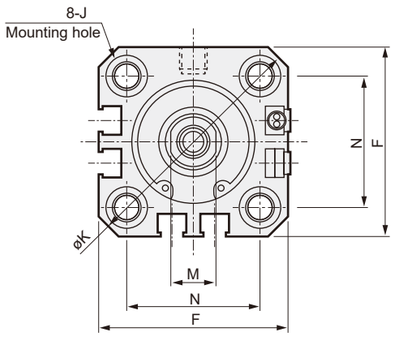


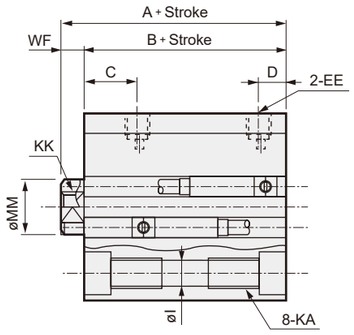


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	25.5	22	20.5	17	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	25.5	22	20.5	17	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	34	29.5	24	19.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	37.5	32.5	27.5	22.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

● For 5 mm stroke with switch, the dimensions are as follows.

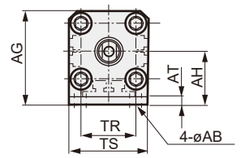
Bore	A + Stroke	B + Stroke
ø12	35.5	32
ø16	35.5	32

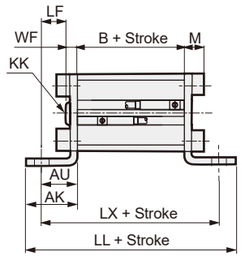
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

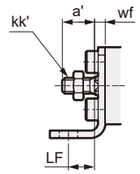
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)





● For rod end male thread



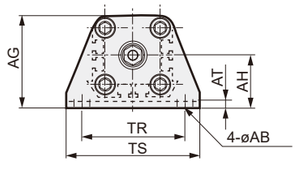
Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch *1 B	LL	LX	Without Switch B	LL	LX	For male thread a'	kk'	wf	LF
ø12	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	8.5	22	58	46	17	53	41	10.5	M5	3.5	8.5
ø16	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	22	58	46	17	53	41	12	M6	3.5	8.5
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	29.5	77.5	61.5	19.5	67.5	51.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	32.5	80.5	64.5	22.5	70.5	54.5	17.5	M10×1.25	5	11

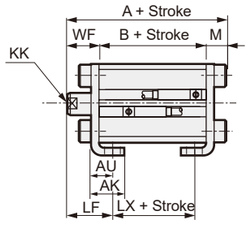
*1: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread B	LL	LX
ø12	27	63	51
ø16	27	63	51

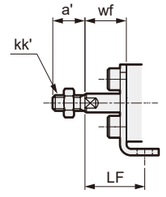
*2: LB cannot be selected when B + stroke is at or less than the stroke below.
ø20: 27 or less

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch *1 A	B	LX	Without Switch A	B	LX	For male thread a'	kk'	wf	LF
ø12	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	41.5	22	10	36.5	17	5	10.5	M5	13.5	19.5
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	41.5	22	10	36.5	17	5	12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	53.2	29.5	17.5	43.2	19.5	7.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	56.7	32.5	17.5	46.7	22.5	7.5	17.5	M10×1.25	15	22.5

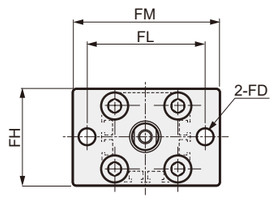
*1: For 5 strokes with switch, the dimensions are as follows.

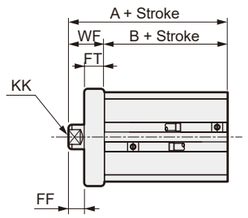
Bore Size	For female thread A	B	LX
ø12	46.5	27	15
ø16	46.5	27	15

*2: If B + Stroke is less than or equal to the values below, LB2 cannot be selected.
ø20: 27 or less

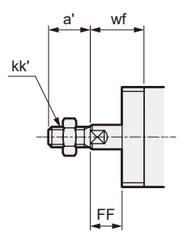
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)





● For rod end male thread

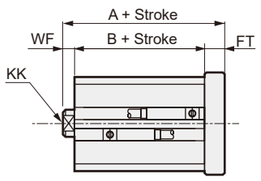


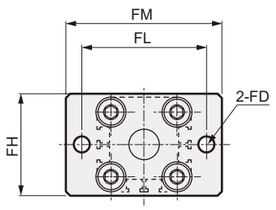
Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch *1 A	With Switch *1 B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø12	4.5	25	45	55	5.5	8	M3 depth 6	13.5	35.5	22	30.5	17	8	10.5	M5	13.5
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	35.5	22	30.5	17	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	44	29.5	34	19.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	47.5	32.5	37.5	22.5	7	17.5	M10×1.25	15

*1: For 5 strokes with switch, the dimensions are as follows.

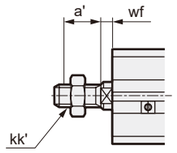
Bore Size	For female thread A	B
ø12	40.5	27
ø16	40.5	27

● Head Side Flange Type (FB)





● For rod end male thread



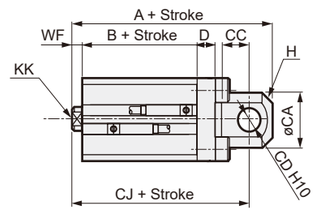
Code / Bore Size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread KK	WF	With Switch *1 A	With Switch *1 B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø12	4.5	25	45	55	5.5	M3 depth 6	3.5	31	22	26	17	10.5	M5	3.5
ø16	4.5	30	45	55	5.5	M4 depth 8	3.5	31	22	26	17	12	M6	3.5
ø20	6.6	39	48	60	8	M5 depth 7	4.5	42	29.5	32	19.5	14	M8	4.5
ø25	6.6	42	52	64	8	M6 Depth 12	5	45.5	32.5	35.5	22.5	17.5	M10×1.25	5

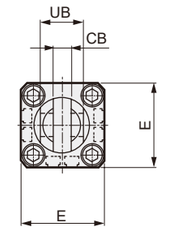
*1: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread A	B
ø12	36	27
ø16	36	27

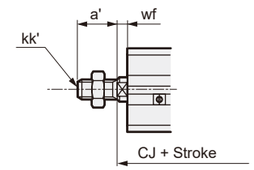
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

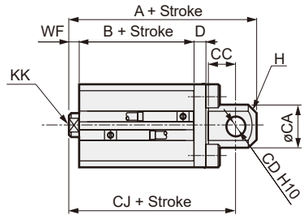


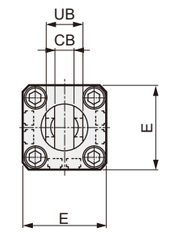
Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch *1 A	With Switch *1 B	With Switch *1 CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch *1 CJ	Without Switch CJ
ø12	13.5	6.5 +0.4 +0.1	7	5	5	25	C1.5	12 -0.1 -0.4	M3 depth 6	3.5	45.5	22	39.5	40.5	17	34.5	10.5	M5	3.5	39.5	34.5
ø16	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	46.5	22	40.5	41.5	17	35.5	12	M6	3.5	40.5	35.5
ø20	24	8 +0.4 +0.1	12	10	8	36	C4	19 -0.1 -0.4	M5 depth 7	4.5	67	29.5	57	57	19.5	47	14	M8	4.5	57	47
ø25	27.5	10 +0.4 +0.1	16	12	8	40	C5	21 -0.1 -0.4	M6 Depth 12	5	76.5	32.5	64.5	66.5	22.5	54.5	17.5	M10×1.25	5	64.5	54.5

*1: For 5 strokes with switch, the dimensions are as follows.

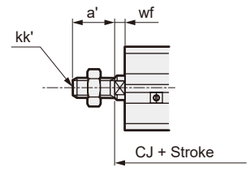
Bore Size	For female thread A	B	CJ	For male thread CJ
ø12	50.5	27	44.5	44.5
ø16	51.5	27	45.5	45.5

● Double clevis type (compact type) (CB2)





● For rod end male thread



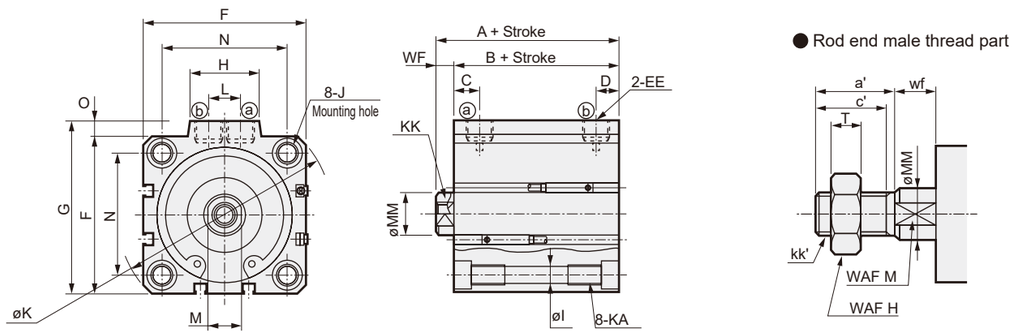
Code / Bore Size (mm)	Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch *1 A	With Switch *1 B	With Switch *1 CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch *1 CJ	Without Switch CJ
ø12	12	5 +0.4 +0.1	7	5	4	25	C1.5	10 -0.1 -0.3	M3 depth 6	3.5	45.5	22	39.5	40.5	17	34.5	10.5	M5	3.5	39.5	34.5
ø16	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	46.5	22	40.5	41.5	17	35.5	12	M6	3.5	40.5	35.5
ø20	20	8 +0.4 +0.1	12	8	5	36	C4	16 -0.1 -0.3	M5 depth 7	4.5	61	29.5	52	51	19.5	42	14	M8	4.5	52	42
ø25	24	10 +0.4 +0.1	14	10	5	40	C5	20 -0.1 -0.3	M6 Depth 12	5	67.5	32.5	57.5	57.5	22.5	47.5	17.5	M10×1.25	5	57.5	47.5

*1: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread A	B	CJ	For male thread CJ
ø12	50.5	27	44.5	44.5
ø16	51.5	27	45.5	45.5

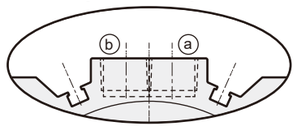
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-(L)-32 to 100



● Rod end male thread part

[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	40	33	30	23	8	8	Rc 1/8	45	49.5	24	5.5	9 Counterbore Depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	46.5	39.5	36.5	29.5	12	8.5	Rc 1/8	52	57	24	5.5	9 Counterbore Depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	48.5	40.5	38.5	30.5	10.5	10.5	Rc 1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	54	46	44	36	13	11	Rc 1/4	77	84	33	8.7	14 Counterbore Depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	63.5	53.5	53.5	43.5	16	13	Rc 3/8	98	104	38	10.5	17.5 Counterbore Depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	75	63	65	53	23	15	Rc 3/8	117	123.5	38	10.5	17.5 Counterbore Depth 11	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For dimensions with each switch, refer to P. 674 to 681.**

***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

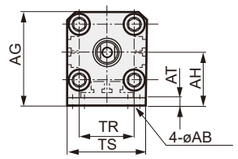
● Rod end male thread part

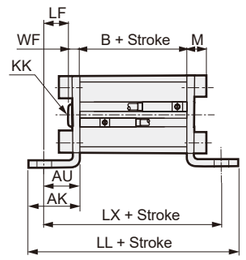
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

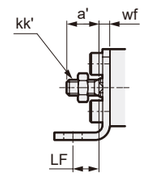
● Axial Foot Type (LB)

· ø32

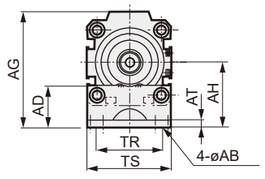


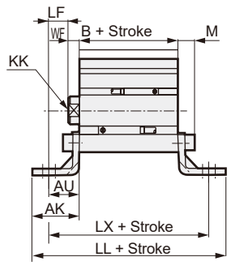


● For rod end male thread

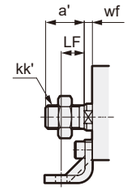


· ø40 to ø100





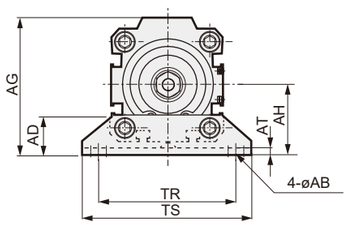
● For rod end male thread

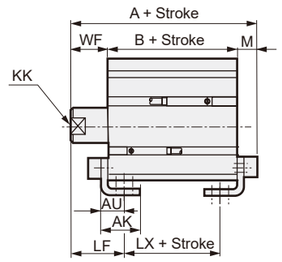


Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	33	81	65	23	71	55	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	39.5	97.5	77.5	29.5	87.5	67.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	40.5	108.5	84.5	30.5	98.5	74.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	46	126	96	36	116	86	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	53.5	153.5	123.5	43.5	143.5	113.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	63	163	133	53	153	123	35.5	M26×1.5	8	27

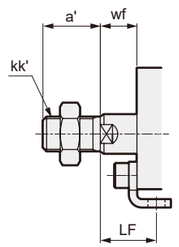
Note: LB cannot be selected when B + stroke is at or less than the stroke value below. ø63: 42 or less, ø80/ø100: 69 or less

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

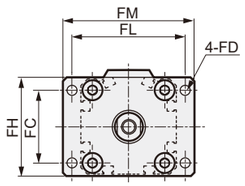


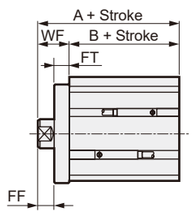
Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	59.2	33	17	49.2	23	7	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	65.7	39.5	23.5	55.7	29.5	13.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	69.7	40.5	17.5	59.7	30.5	7.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	77.2	46	20	67.2	36	10	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	90	53.5	23.5	80	43.5	13.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	103	63	29	93	53	19	35.5	M26×1.5	18	35

Note: LB2 cannot be selected when B + stroke is at or less than the value below.
ø63: 45 or less, ø80: 72 or less, ø100: 69 or less

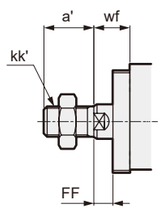
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)



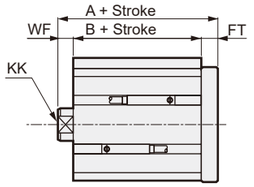


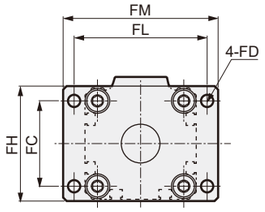
● For rod end male thread



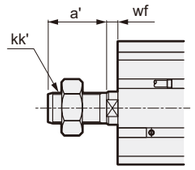
Code / Bore Size (mm)	Common dimension						For female thread							For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	50	33	40	23	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	56.5	39.5	46.5	29.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	58.5	40.5	48.5	30.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	64	46	54	36	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	73.5	53.5	63.5	43.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	85	63	75	53	7	35.5	M26×1.5	18

● Head Side Flange Type (FB)





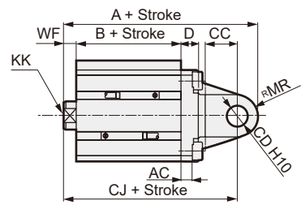
● For rod end male thread

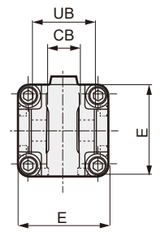


Code / Bore Size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	
ø32	34	5.5	48	56	65	8	M8 depth 13	7	48	33	38	23	23.5	M14×1.5	5	
ø40	40	5.5	54	62	72	8	M8 depth 13	7	54.5	39.5	44.5	29.5	23.5	M14×1.5	5	
ø50	50	6.6	67	76	89	9	M10 depth 15	8	57.5	40.5	47.5	30.5	28.5	M18×1.5	5	
ø63	60	9	80	92	108	9	M10 depth 15	8	63	46	53	36	28.5	M18×1.5	5	
ø80	77	11	99	116	134	11	M16 depth 21	10	74.5	53.5	64.5	43.5	35.5	M22×1.5	8	
ø100	94	11	117	136	154	11	M20 depth 27	12	86	63	76	53	35.5	M26×1.5	8	

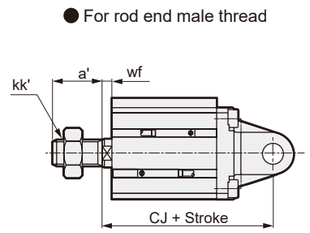
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)





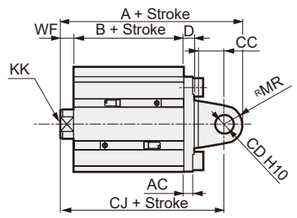
● For rod end male thread

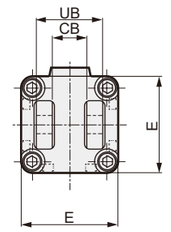


Code / Bore Size (mm)	Common dimension								For female thread							For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch *1 CJ	Without Switch CJ
ø32	9.5	10 +0.4 +0.1	16	12	10	45	12	21 -0.1 -0.4	M8 depth 13	7	82	33	70	72	23	60	23.5	M14×1.5	5	68	58
ø40	6.5	18 +0.4 +0.1	18	12	10	52	12	36 -0.1 -0.4	M8 depth 13	7	90.5	39.5	78.5	80.5	29.5	68.5	23.5	M14×1.5	5	76.5	66.5
ø50	6.5	18 +0.4 +0.1	18	12	10	64	12	36 -0.1 -0.4	M10 depth 15	8	92.5	40.5	80.5	82.5	30.5	70.5	28.5	M18×1.5	5	77.5	67.5
ø63	7.5	20 +0.4 +0.1	24	14	10	77	16	40 -0.1 -0.4	M10 depth 15	8	107	46	91	97	36	81	28.5	M18×1.5	5	88	78
ø80	10.5	28 +0.4 +0.1	30	20	14	98	20	56 -0.1 -0.3	M16 depth 21	10	135.5	53.5	115.5	125.5	43.5	105.5	35.5	M22×1.5	8	113.5	103.5
ø100	10.5	28 +0.4 +0.1	30	20	16	118	20	56 -0.1 -0.3	M20 depth 27	12	147	63	127	137	53	117	35.5	M26×1.5	8	123	113

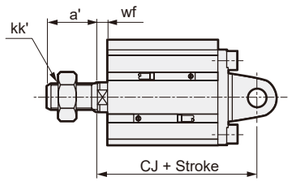
*1: Pin and retaining ring are included.

● Double clevis type (compact type) (CB2)





● For rod end male thread

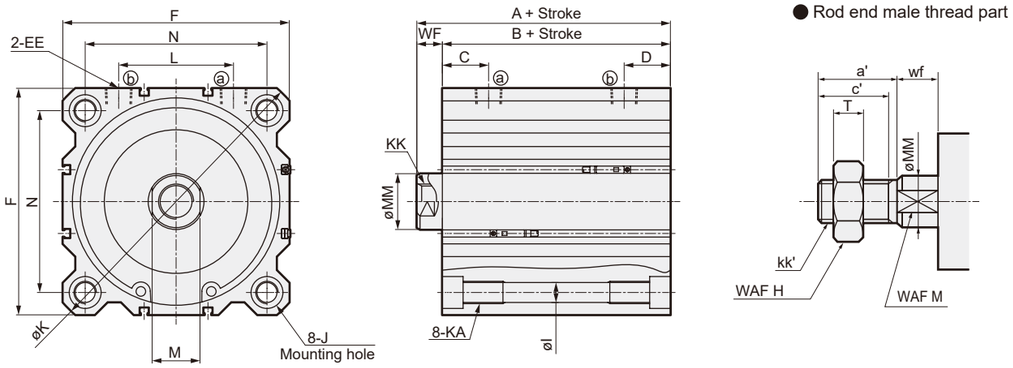


Code / Bore Size (mm)	Common dimension								For female thread							For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch *1 CJ	Without Switch CJ
ø32	4.5	18 +0.4 +0.1	14	10	5	45	10	36 -0.1 -0.3	M8 depth 13	7	70	33	60	60	23	50	23.5	M14×1.5	5	58	48
ø40	5	18 +0.4 +0.1	14	10	6	52	10	36 -0.1 -0.4	M8 depth 13	7	78.5	39.5	68.5	68.5	29.5	58.5	23.5	M14×1.5	5	66.5	56.5
ø50	6	22 +0.4 +0.1	20	14	7	64	14	44 -0.1 -0.3	M10 depth 15	8	90.5	40.5	76.5	80.5	30.5	66.5	28.5	M18×1.5	5	73.5	63.5
ø63	7	22 +0.4 +0.1	20	14	8	77	14	44 -0.1 -0.3	M10 depth 15	8	98	46	84	88	36	74	28.5	M18×1.5	5	81	71
ø80	9	28 +0.4 +0.1	27	18	10	98	18	56 -0.1 -0.3	M16 depth 21	10	119.5	53.5	101.5	109.5	43.5	91.5	35.5	M22×1.5	8	99.5	89.5
ø100	12	32 +0.4 +0.1	31	22	13	117	22	64 -0.1 -0.3	M20 depth 27	12	142	63	120	132	53	110	35.5	M26×1.5	8	116	106

*1: Pin and retaining ring are included.

Outline Dimension Drawing (Bore size: ø125 to ø160)

● SSD-(L)-125 to 160



● Rod end male thread part

Code / Bore Size (mm)	Common dimension											
	A	B	C	D	EE	F	I	J	K	KA	KK
ø125	88	72	23.5	23.5	Rc3/8	142	12.5	20 Counterbore Depth 13	190	M14 depth 25	M22 depth 30
ø140	98	82	27	27	Rc3/8	158	12.5	20 Counterbore Depth 13	210	M14 depth 25	M22 depth 30
ø160	108	91	30	30	Rc3/8	178	14.7	23 Counterbore depth 15.2	238	M16 depth 28	M24 depth 33

Switch dimension / Bore Size (mm)	L	M	MM	N	WF
ø125	72	30	35	114	16
ø140	80	30	35	128	16
ø160	90	36	40	144	17

***1: For dimensions with each switch, refer to P. 674 to 681.**
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

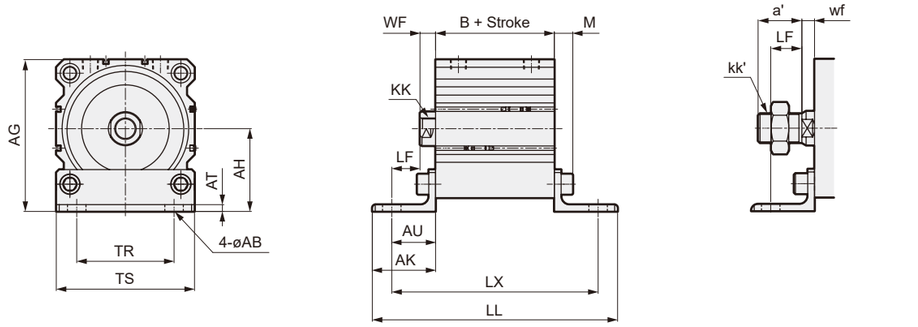
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø125	45	42	46	M30×1.5	30	35	18	13
ø140	45	42	46	M30×1.5	30	35	18	13
ø160	50	47	55	M36×1.5	36	40	21	14

Outline Dimension Drawing (Bore size: ø125 to ø160)

● Axial Foot Type (LB)

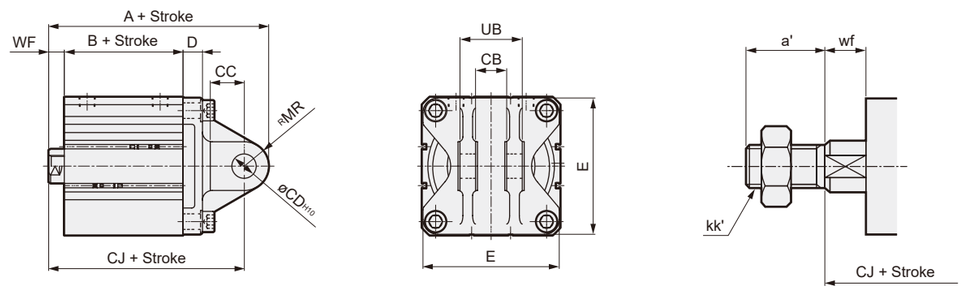
● For rod end male thread



Code / Bore Size (mm)	Common dimension										For female thread						For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	B	LL	LX	a'	kk'	wf	LF
ø125	19	43	156	85	65	7	45	100	142	21	M22 depth 30	16	29	72	202	162	45	M30×1.5	13	32
ø140	19	51	179	100	70	8	50	112	158	22	M22 depth 30	16	34	82	222	182	45	M30×1.5	13	37
ø160	19	52	195	106	73	10	53	118	178	26	M24 depth 33	17	36	91	237	197	50	M36×1.5	14	39

● Double Knuckle Clevis Type (CB)

● For rod end male thread



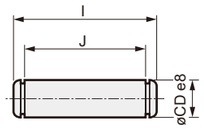
Code / Bore Size (mm)	Common dimension								For female thread					For male thread			
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	CJ
ø125	18	$32^{+0.1}_{+0.1}$	35	25	20	140	25	64	M22 depth 30	16	176	72	151	45	M30×1.5	13	148
ø140	20	$36^{+0.1}_{+0.1}$	40	28	22	154	28	72	M22 depth 30	16	201	82	173	45	M30×1.5	13	170
ø160	22	$40^{+0.1}_{+0.1}$	40	32	24	174	32	80	M24 depth 33	17	215	91	183	50	M36×1.5	14	180

Outline Dimension Drawing

● Double Knuckle Clevis (CB) Attached Pin

· ø12 to ø100

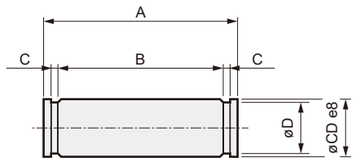
Material: Steel
Zinc Chromate



Model No.	Applicable Bore Size	I	J	CD	Retaining Ring to Use	Weight (g)
SSD-P-12	ø12	18	13	5	E-type 4	2.8
SSD-P-16	ø16	18	13	5	E-type 4	2.8
SSD-P-20	ø20	25	20	10	E-type 9	17
SSD-P-25	ø25	27	22	12	E-type 9	25
SSD-P-32	ø32	27	22	12	E-type 9	25
SSD-P-40	ø40	43.5	36.2	12	Shaft C-type 12	39
SSD-P-50	ø50	43.5	36.2	12	Shaft C-type 12	39
SSD-P-63	ø63	47.5	40.2	14	Shaft C-type 14	58
SSD-P-80	ø80	64	56.2	20	Shaft C-type 20	156
SSD-P-100	ø100	64	56.2	20	Shaft C-type 20	156

· ø125 to ø160

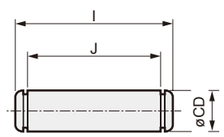
Material: Steel
Zinc Chromate



Model No.	Applicable Bore Size	A	B	C	CD	D	Retaining Ring to Use	Weight (g)
SSD-P-125	ø125	75	66.3	1.35	25	23.9	Shaft C-type 25	250
SSD-P-140	ø140	84	74.7	1.65	28	26.6	Shaft C-type 28	400
SSD-P-160	ø160	92	82.7	1.65	32	30.3	Shaft C-type 32	500

● Double Knuckle Clevis (CB2) Attached Pin (P2)

Material: Steel
Zinc Chromate



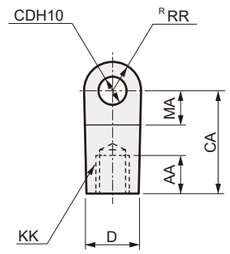
Model No.	Applicable Bore Size	I	J	CD	Retaining Ring to Use	Weight (g)
SSD-P2-12	ø12	15.2	10.2	$5^{0.01}_{0.028}$	E-type 4	2.4
SSD-P2-16	ø16	18	13	$5^{0.01}_{0.028}$	E-type 4	2.8
SSD-P2-20	ø20	21	16.2	$8^{0.025}_{0.047}$	Shaft C-type 8	8.2
SSD-P2-25	ø25	25.6	20.2	$10^{0.025}_{0.047}$	Shaft C-type 10	16
SSD-P2-32	ø32, ø40	41.6	36.2	$10^{0.025}_{0.047}$	Shaft C-type 10	25
SSD-P2-50	ø50, ø63	50.6	44.2	$14^{0.032}_{0.059}$	Shaft C-type 14	60
SSD-P2-80	ø80	64	56.2	$18^{0.032}_{0.059}$	Shaft C-type 18	124
SSD-P2-100	ø100	72	64.2	$22^{0.04}_{0.083}$	Shaft C-type 22	213

Outline Dimension Drawing

● Single Knuckle (I)

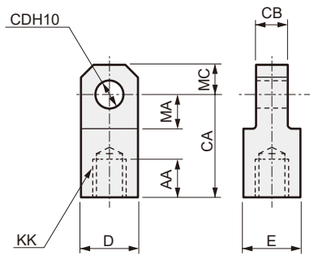
· ø12, ø16, ø40, ø50, ø63, ø80, ø100

Material: ø12 to ø25 Steel
ø32 to ø160 Cast iron
ø12 to ø32 Zinc Chromate
ø40 to ø100 Painted



· ø20, ø25, ø32, ø125, ø140, ø160

Material: ø12 to ø25 Steel
ø32 to ø160 Cast iron
ø12 to ø32 Zinc Chromate
ø40 to ø100 Painted



Model No.	Applicable Bore size (mm)	AA	CA	CB	CD	D	E	KK	MA	MC	RR	Weight (g)
P2-I-16	12	8	25	$6.4^{0}_{-0.1}$	$5^{-0.048\ 0}$	12	12	M5	14	–	10	21
SSD-I-16	16	8	25	$6.5^{-0.1}_{-0.2}$	$5^{-0.048\ 0}$	12	12	M6	14	–	10	21
SSD-I-20	20	13.5	30	$8^{-0.1}_{-0.2}$	$10^{-0.058\ 0}$	19	19	M8	13	10	–	65
M1-I-30	25	14	36	$10^{-0.1}_{-0.2}$	$12^{-0.070}_{0}$	25	19	M10×1.25	16	12	–	106
SSD-I-32	32	15	36	$10^{-0.1}_{-0.2}$	$12^{-0.070}_{0}$	25	19	M14×1.5	16	12	–	106
SSD-I-40	40	20	50	$18^{-0.1}_{-0.4}$	$12^{-0.070}_{0}$	27	27	M14×1.5	21	–	16	260
SSD-I-50	50	21	50	$18^{-0.1}_{-0.4}$	$12^{-0.070}_{0}$	27	27	M18×1.5	21	–	16	240
SSD-I-63	63	21	50	$20^{-0.1}_{-0.4}$	$14^{-0.070}_{0}$	27	27	M18×1.5	21	–	16	250
SSD-I-80	80	30	70	$28^{-0.1}_{-0.4}$	$20^{-0.084}_{0}$	46	41	M22×1.5	30	–	25	880
SSD-I-100	100	30	70	$28^{-0.1}_{-0.4}$	$20^{-0.084}_{0}$	46	41	M26×1.5	30	–	25	840
SSD-I-125	125·140	50	85	$32^{-0.1}_{-0.4}$	$25^{-0.084}_{0}$	55	55	M30×1.5	32	27.5	–	1250
SSD-I-160	160	60	105	$40^{-0.1}_{-0.4}$	$32^{-0.100}_{0}$	70	70	M36×1.5	40	35	–	2550

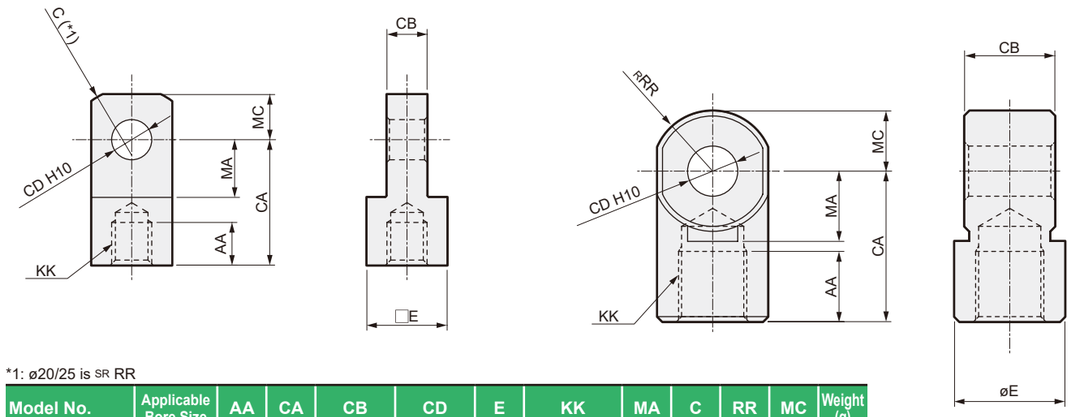
● Single Knuckle (Compact Type) (I2)

· ø12 to ø25

Material: Steel
Zinc Chromate

· ø32 to ø100

Material: Cast Iron
ø32 Zinc chromate
ø40 to ø100 Painted



*1: ø20/25 is SR RR

Model No.	Applicable Bore Size	AA	CA	CB	CD	E	KK	MA	C	RR	MC	Weight (g)
SSD-I2-12	ø12	6	16	$5^{-0.2}_{-0.4}$	$5^{+0.048\ 0}$	□10	M5×0.8	7	2	–	5.5	9
SSD-I2-16	ø16	8	25	$6.5^{-0.2}_{-0.4}$	$5^{+0.048\ 0}$	□12	M6×1	14	2	–	7	21
SSD-I2-20	ø20	8.5	25	$8^{-0.2}_{-0.4}$	$8^{+0.058\ 0}$	□16	M8×1.25	11.5	–	13.4	9	38
SSD-I2-25	ø25	10.5	30	$10^{-0.2}_{-0.4}$	$10^{+0.058\ 0}$	□20	M10×1.25	14	–	17.1	11	71
SSD-I2-32	ø32, ø40	14	30	$18^{-0.3}_{-0.5}$	$10^{+0.058\ 0}$	ø22	M14×1.5	14	–	12	12	74
SSD-I2-50	ø50, ø63	18	40	$22^{-0.3}_{-0.5}$	$14^{+0.070}_{0}$	ø28	M18×1.5	20	–	16	16	155
SSD-I2-80	ø80	21	50	$28^{-0.3}_{-0.5}$	$18^{+0.070}_{0}$	ø38	M22×1.5	27	–	21	21	380
SSD-I2-100	ø100	21	55	$32^{-0.3}_{-0.5}$	$22^{+0.084}_{0}$	ø44	M26×1.5	31	–	24	24	550

Outline Dimension Drawing

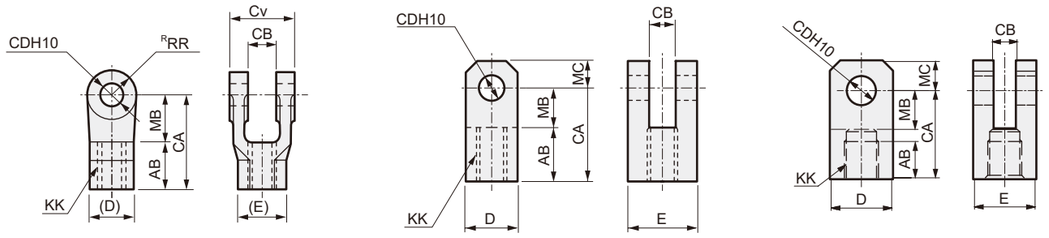
● Double Knuckle (Y)

· ø12, ø16, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160

· ø20, ø25 Material: ø12 to ø32 Steel
ø40 to ø100 Cast iron
ø12 to ø25 Zinc Chromate
ø32 to ø100 Painted

*1: Pins and retaining rings are included.
*2: AB is thread depth

· ø32

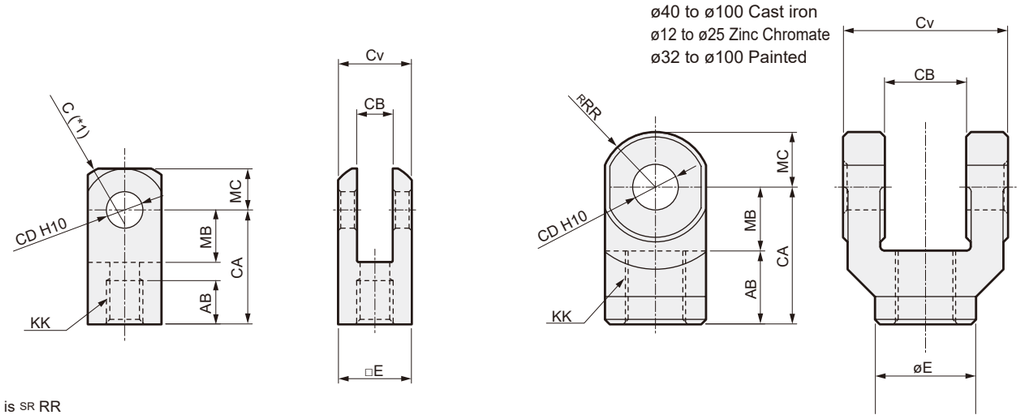


Model No.	Applicable Bore size (mm)	AB	CA	CB	CD	Cv	D	E	KK	MB	MC	RR	Weight (g)
P2-Y-16	12	11	21	6.5 $^{+0.2}_{+0.1}$	5 $^{-0.048}_{0}$	12	12	12	M5	10	–	10	20
SSD-Y-16	16	11	21	6.5 $^{+0.2}_{+0.1}$	5 $^{-0.048}_{0}$	12	12	12	M6	10	–	10	20
SSD-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 $^{-0.058}_{0}$	19	19	19	M8	13	10	–	100
M1-Y-30	25	20	36	10 $^{+0.3}_{+0.1}$	12 $^{-0.070}_{0}$	25	25	25	M10×1.25	16	12	–	197
SSD-Y-32	32	15	36	10 $^{+0.3}_{+0.1}$	12 $^{-0.070}_{0}$	25	25	25	M14×1.5	16	12	–	197
SSD-Y-40	40	24	50	18 $^{+0.4}_{+0.1}$	12 $^{-0.070}_{0}$	36	(27)	31.2	M14×1.5	26	–	16	250
SSD-Y-50	50	24	50	18 $^{+0.4}_{+0.1}$	12 $^{-0.070}_{0}$	36	(27)	31.2	M18×1.5	26	–	16	240
SSD-Y-63	63	24	50	20 $^{+0.4}_{+0.1}$	14 $^{-0.070}_{0}$	40	(27)	31.2	M18×1.5	26	–	16	260
SSD-Y-80	80	35	70	28 $^{+0.4}_{+0.1}$	20 $^{-0.084}_{0}$	56	(41)	47.3	M22×1.5	35	–	25	900
SSD-Y-100	100	35	70	28 $^{+0.4}_{+0.1}$	20 $^{-0.084}_{0}$	56	(41)	47.3	M26×1.5	35	–	25	850
SSD-Y-125	125·140	50	85	32 $^{+0.4}_{+0.1}$	25 $^{-0.084}_{0}$	64	(46)	53.1	M30×1.5	35	–	27.5	1300
SSD-Y-160	160	60	105	40 $^{+0.4}_{+0.1}$	32 $^{-0.100}_{0}$	80	(55)	63.5	M36×1.5	45	–	35	2550

● Rod clevis (compact) (Y2)

· ø12 to ø25

· ø32 to ø100 Material: ø12 to ø32 Steel
ø40 to ø100 Cast iron
ø12 to ø25 Zinc Chromate
ø32 to ø100 Painted



*1: ø20/25 is SR RR
*2: Pins and retaining rings are included.

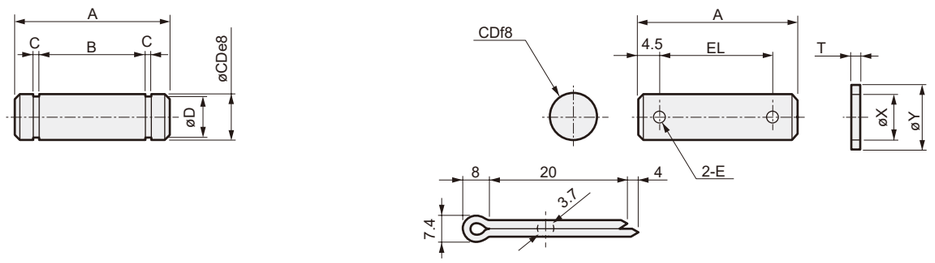
Model No.	Applicable Bore Size	AB	CA	CB	CD	Cv	E	KK	MB	C	RR	MC	Weight (g)
SSD-Y2-12	ø12	6	16	5 $^{+0.4}_{+0.2}$	5 $^{-0.048}_{0}$	10	□10	M5×0.8	7	2	–	5.5	12
SSD-Y2-16	ø16	11	21	6.5 $^{+0.4}_{+0.2}$	5 $^{-0.048}_{0}$	12	□12	M6×1	10	2	–	7	20
SSD-Y2-20	ø20	13.5	25	8 $^{+0.4}_{+0.2}$	8 $^{-0.058}_{0}$	16	□16	M8×1.25	11.5	–	13.4	9	45
SSD-Y2-25	ø25	16	30	10 $^{+0.4}_{+0.2}$	10 $^{-0.058}_{0}$	20	□20	M10×1.25	14	–	17.1	11	84
SSD-Y2-32	ø32, ø40	16	30	18 $^{+0.5}_{+0.3}$	10 $^{-0.058}_{0}$	36	ø22	M14×1.5	14	–	12	12	120
SSD-Y2-50	ø50, ø63	20	40	22 $^{+0.5}_{+0.3}$	14 $^{-0.070}_{0}$	44	ø28	M18×1.5	20	–	16	16	257
SSD-Y2-80	ø80	23	50	28 $^{+0.5}_{+0.3}$	18 $^{-0.070}_{0}$	56	ø38	M22×1.5	27	–	21	21	589
SSD-Y2-100	ø100	24	55	32 $^{+0.5}_{+0.3}$	22 $^{-0.084}_{0}$	64	ø44	M26×1.5	31	–	24	24	933

Outline Dimension Drawing

● Pin for Double Knuckle (Y) (P)

· ø12, ø16, ø40 to ø160

· ø20 to ø32 Material: Steel
Zinc Chromate

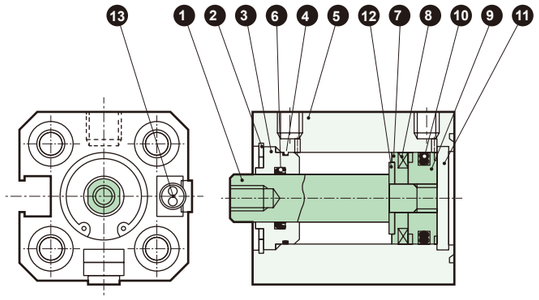


Model No.	Applicable Bore size (mm)	A	B	C	D	CD	E	EL	T	X	Y	Retaining ring/ cotter pin to use	Weight (g)
P2-P-16	12, 16	18	13	0.7	4	5 $^{-0.010}_{-0.028}$	–	–	–	–	–	E-type retaining ring 4	3.0
M1-P-20	20	37	–	–	–	10 $^{-0.013}_{-0.035}$	4	28	1.6	10.5	18	Split Pin	29
M1-P-30	25, 32	46	–	–	–	12 $^{-0.018-}_{0.043}$	4	37	2.3	12.5	22	Split Pin	50
S1-P-40	40·50	43.5	36.2	1.15	11.5	12 $^{-0.032}_{-0.059}$	–	–	–	–	–	Shaft C-type 12	40
S1-P-63	63	47.5	40.2	1.15	13.4	14 $^{-0.032}_{-0.059}$	–	–	–	–	–	Shaft C-type 14	60
S1-P-80	80·100	64	56.2	1.35	19	20 $^{-0.040}_{-0.073}$	–	–	–	–	–	Shaft C-type 20	160
SCS2-125-P	125·140	75	66.3	1.35	23.9	25 $^{-0.040}_{-0.073}$	–	–	–	–	–	Shaft C-type 25	250
SCS2-160-P	160	92	82.7	1.65	30.3	32 $^{-0.050}_{-0.089}$	–	–	–	–	–	Shaft C-type 32	500

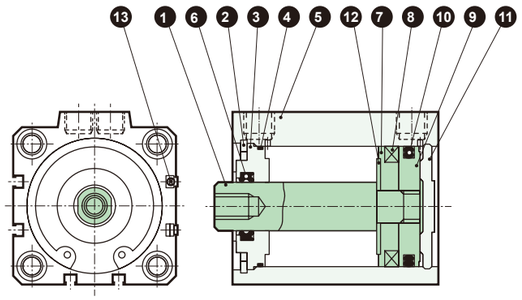
● Pin for Double Knuckle (Y2)
Common with pin for double clevis (CB2) (P2).
For outline dimensions, refer to P. 378.

Internal Structure Diagram/Material (Bore size: ø12 to 50) (Without Cushion)

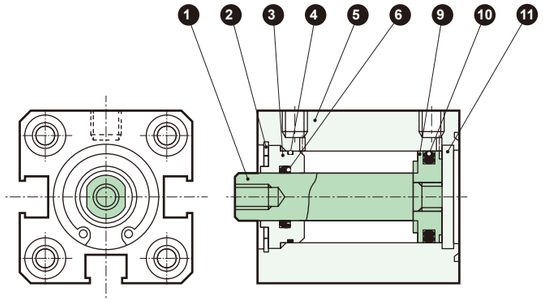
● SSD-L-12 to 25 (Double Acting Type with Switch)



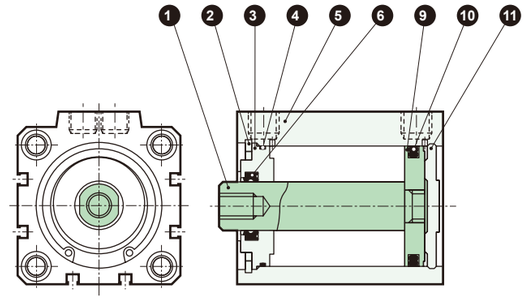
● SSD-L-32 to 50 (Double Acting Type with Switch)



● SSD-12 to 25 (Double Acting Type)



● SSD-32 to 50 (Double Acting Type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Alumite	10	Piston Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized				
6	Rod Packing	Nitrile Rubber		12	Spacer washer	Stainless Steel	ø20 to ø50
7	Spacer	ø12: Aluminum alloy ø16 to ø50: Special resin	ø12: Chromate	With Switch			
				13	Switch		

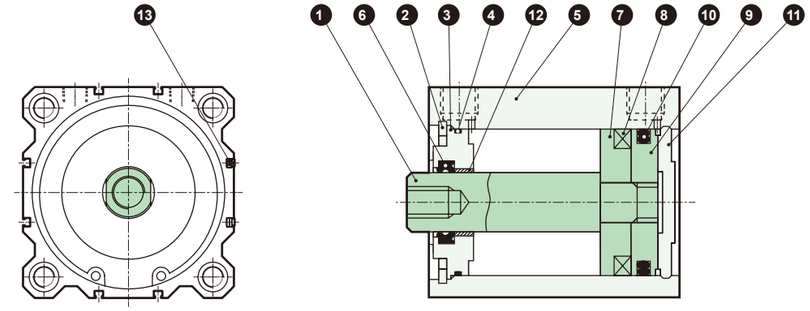
Mounting Bracket Material

Mounting bracket	Material	Remarks
LB LB2	Steel	Zinc Chromate
FA FB	Steel	Zinc Chromate
CB CB2	Cast Iron	Painting

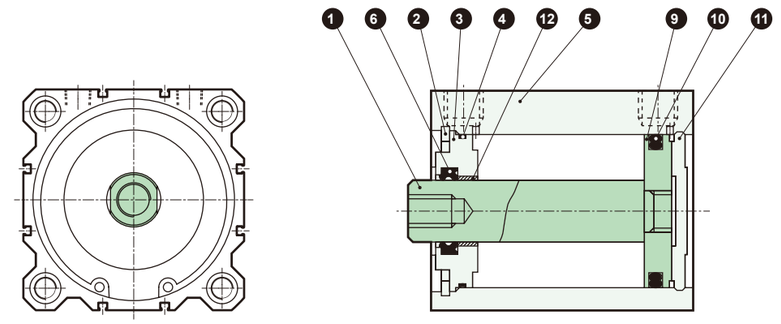
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100) (Without Cushion)

● SSD-L-63 to 100 (Double Acting Type with Switch)



● SSD-63 to 100 (Double Acting Type)

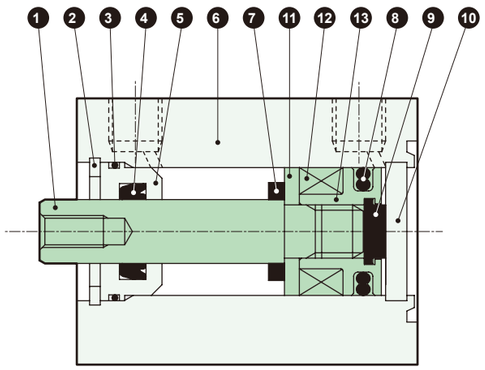


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Chromate	10	Piston Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		11	Cover	Aluminum Alloy	Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized	12	Bushing	Bearing Alloy	
6	Rod Packing	Nitrile Rubber		With Switch			
7	Spacer	Aluminum Alloy	Chromate	13	Switch		

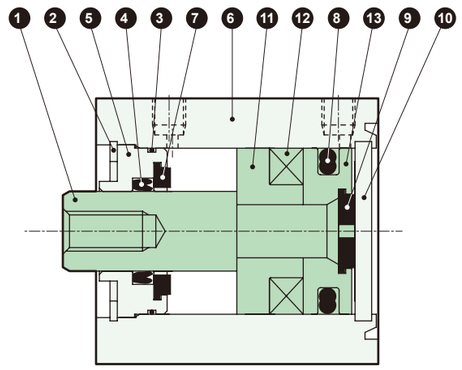
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø12 to ø32) (With Rubber Cushion)

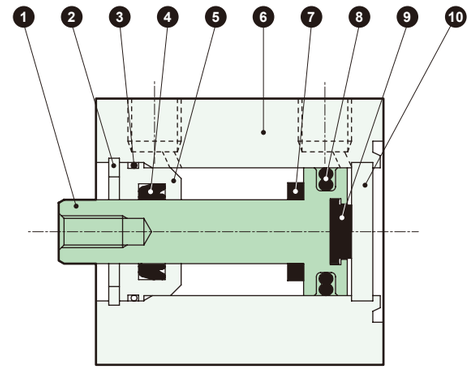
● SSD-L-12D (Double Acting Type with Switch)



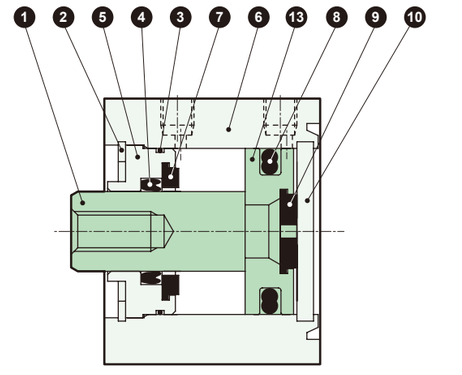
● SSD-L-16D to 32D (Double Acting Type with Switch)



● SSD-12D (Double Acting Type)



● SSD-16D to 32D (Double Acting Type)



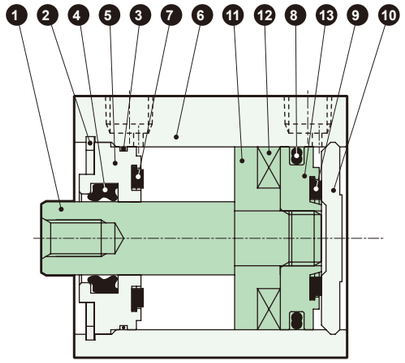
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32: Steel	ø16 to ø32: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Alumite
6	Cylinder Body	Aluminum Alloy	Hard Anodized
7	Cushion rubber (R)	Urethane Rubber	

Part No.	Part Name	Material	Remarks
8	Piston Packing	Nitrile Rubber	
9	Cushion rubber (H)	Urethane Rubber	
10	Cover	ø12 to ø25: Stainless steel ø32: Aluminum alloy	ø32: Alumite
11	Spacer	Aluminum Alloy	Chromate
12	Magnet	Plastic	
13	Piston	Aluminum Alloy	Chromate

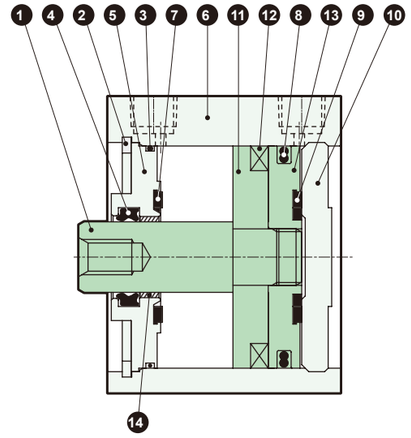
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø40 to ø100) (With Rubber Cushion)

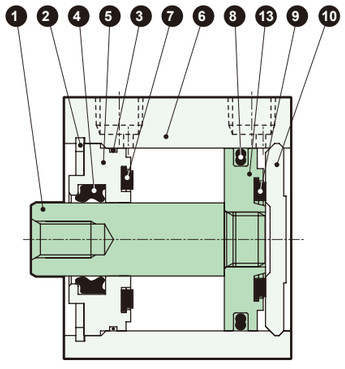
● SSD-L-40D, 50D (Double Acting Type with Switch)



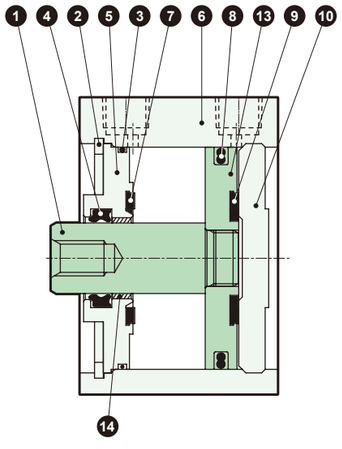
● SSD-L-63D to 100D (Double Acting Type with Switch)



● SSD-40, 50D (Double Acting Type)



● SSD-63D to 100D (Double Acting Type)



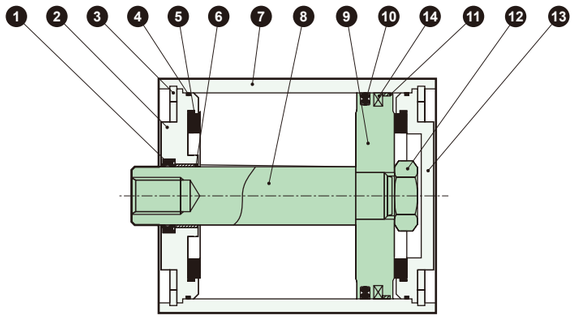
Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	ø40 to ø50: Alumite ø63 to ø100: Chromate
6	Cylinder Body	Aluminum Alloy	Hard Anodized
7	Cushion rubber (R)	Urethane Rubber	

Part No.	Part Name	Material	Remarks
8	Piston Packing	Nitrile Rubber	
9	Cushion rubber (H)	Urethane Rubber	
10	Cover	Aluminum Alloy	Alumite
11	Spacer	Aluminum Alloy	Chromate
12	Magnet	Plastic	
13	Piston	Aluminum Alloy	Chromate
14	Bushing	Bearing Alloy	

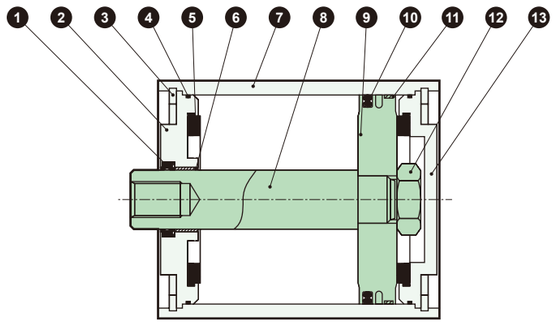
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø125 to ø160) (With Rubber Cushion)

● SSD-L-ø125 to ø160 (Double Acting with Switch)



● SSD ø125 to ø160 (Double Acting)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		8	Piston Rod	Steel	Industrial Hard Chrome Plating
2	Rod Metal	Aluminum Alloy	Chromate	9	Piston	Aluminum Alloy	
3	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
4	Metal gasket	Nitrile Rubber		11	Wear Ring	Polyacetal	
5	Cushion Rubber	Urethane Rubber		12	Hexagon Nut	Steel	Zinc Chromate
6	Bushing	Bearing Alloy		13	Bottom plate	Aluminum Alloy	Chromate
7	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Magnet	Rubber	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

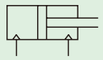


Compact Cylinder Double Acting, Single Rod, High Load Type

SSD-K Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-K – 12 – ( ) – 5 ——— N – LB – I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch
(Built-in magnet for switch)

SSD-KL – 12 – ( ) – 5 – T0H – R – N – LB – I

Model No. ❶ Bore Size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting bracket ❽ Accessories

❶Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Port Thread Type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12 to ø16	1 to 100	Every 1 mm
ø20	1 to 200	
ø25 to ø100	1 to 300	

Note: For details on stroke, please refer to P. 390.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12, ø16.
*6: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*2 S	Dedicated body for intermediate stroke	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.
*2: For intermediate stroke, refer to P. 390.

❼Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (pin and retaining ring included)	
CB2	Double knuckle clevis type (Compact type) (Pin and retaining ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 393, 394, 398, 399. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❽Accessories

Code	Content	
I	Single Knuckle	
I2	Rod eye (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1,R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-K – ..... – XP5

Rechargeable Battery Compatible Specification

(Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

SSD-K – ..... – P4□

*Please contact us for details.

Oil-free Compatible Specification

(Catalog No. RJ-001)

● Grease scatter prevention structure

SSD-K – ..... – P12

Switch Single Unit Model No. Notation Method

SW – T0H

❹ Switch Model No.

Specifications

Item	SSD-K SSD-KL (With Switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	M5				Rc 1/8		Rc 1/4		Rc 3/8	
Stroke tolerance mm	+2.0 0									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	Rubber Cushion									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●							
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●	●	●
	60				●	●	●	●	●	●	●
	70				●	●	●	●	●	●	●
	80				●	●	●	●	●	●	●
	90				●	●	●	●	●	●	●
	100				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		100		200	300						
Intermediate Stroke *2		Every 1 mm									

***1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches attachable and minimum stroke, refer to the table on the right.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 393, 397, 398.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T*		T2WL	
Number of Switches	1	2	1	2
Bore Size (mm)				
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	15	15
ø25	5	5	15	15
ø32	5	5	15	15
ø40	5	5	10	15
ø50	5	5	10	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

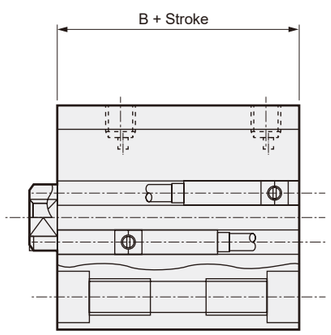
Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

About Intermediate Stroke

● SSD-K Series

Item	Standard Product		Optional Product	
	Spacer type on standard stroke body		Dedicated Body Type (-S)	
Model number indication	Refer to model No. indication method.		Indicates the "Option" code -S in the model No. indication method.	
Manufacturing Content	A spacer is provided on the standard stroke body, manufactured in 1 mm stroke increments.		A dedicated body is manufactured for the specified stroke.	
Stroke Range	Bore Size	Stroke Range	Bore Size	Stroke Range
	12 to 20	1 to 49	12, 16	6 (11) to 100 (*1)
			20	6 to 200
	25 to 100	1 to 99	25 to 100	11 to 300
Model Number Notation Example	Model No. SSD-K-32-81 A +9 mm spacer is added to the standard cylinder SSD-K-32-90 to make it 90 mm. B + Stroke = 33 + 90 = 123		Model No. SSD-K-32-81-S A dedicated body for 81 strokes is manufactured. B + Stroke = 33 + 81 = 114	

*1: ( ) indicates when equipped with a switch.



Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50		60		70		80		90		100	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø12	44	86	53	95	61	103	70	112	78	121	87	129	104	146	121	163	138	180	155	197	172	214	189	231	206	248
ø16	59	104	69	114	80	125	91	136	102	147	113	158	135	169	157	191	179	213	201	235	223	257	245	279	267	301
ø20	75	150	88	163	101	176	113	188	126	201	138	213	163	238	188	263	213	288	238	313	263	338	288	363	313	388
ø25	-	-	118	209	134	225	150	241	165	256	182	273	214	305	246	337	278	369	310	401	342	433	374	465	406	497
ø32	-	-	188	302	209	323	231	345	253	367	275	389	318	432	361	475	404	518	447	561	490	604	533	647	576	690
ø40	-	-	263	406	290	433	316	459	342	485	369	512	422	565	475	618	528	671	581	724	634	777	687	830	740	883
ø50	-	-	425	619	467	661	510	704	553	747	594	788	678	872	762	956	846	1040	930	1124	1014	1208	1098	1292	1182	1376
ø63	-	-	617	896	-	-	727	1006	-	-	838	1117	948	1227	1058	1337	1168	1447	1278	1557	1388	1667	1498	1777	1608	1887
ø80	-	-	1101	1514	-	-	1274	1687	-	-	1448	1861	1621	2034	1794	2207	1967	2380	2140	2553	2313	2726	2486	2899	2659	3072
ø100	-	-	1660	2227	-	-	1888	2455	-	-	2115	2682	2343	2910	2571	3138	2799	3366	3027	3594	3255	3822	3483	4050	3711	4278

Stroke (mm)	110		120		130		140		150		160		170		180		190		200	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	338	413	363	438	388	463	413	488	438	513	463	538	488	563	513	588	538	613	563	638
ø25	438	529	470	561	502	593	534	625	566	657	598	689	630	721	662	753	694	785	726	817
ø32	619	733	662	776	705	819	748	862	791	905	833	947	876	990	919	1033	962	1076	1005	1119
ø40	793	936	846	989	899	1042	952	1095	1005	1148	1058	1201	1111	1254	1164	1307	1217	1360	1270	1413
ø50	1266	1460	1350	1544	1434	1628	1518	1712	1602	1796	1700	1894	1785	1979	1870	2064	1955	2149	2040	2234
ø63	1718	1997	1828	2107	1938	2217	2048	2327	2158	2437	2268	2547	2378	2657	2488	2767	2598	2877	2708	2987
ø80	2832	3245	3005	3418	3178	3591	3351	3764	3524	3937	3697	4110	3870	4283	4043	4456	4216	4629	4389	4802
ø100	3939	4506	4167	4734	4395	4962	4623	5190	4851	5418	5079	5646	5307	5874	5535	6102	5763	6830	5991	6558

Stroke (mm)	210		220		230		240		250		260		270		280		290		300	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø25	769	849	801	881	833	913	865	945	897	977	929	1009	961	1041	993	1073	1025	1105	1057	1137
ø32	1048	1162	1091	1205	1134	1248	1177	1291	1220	1334	1263	1377	1306	1420	1349	1463	1392	1506	1435	1549
ø40	1323	1466	1376	1519	1429	1572	1482	1625	1535	1678	1588	1731	1641	1784	1694	1837	1747	1890	1800	1943
ø50	2125	2319	2210	2404	2295	2489	2380	2574	2465	2659	2550	2744	2635	2829	2720	2914	2805	2999	2890	3084
ø63	2817	3096	2927	3206	3037	3316	3147	3426	3257	3536	3367	3646	3477	3756	3587	3866	3697	3976	3807	4086
ø80	4561	4974	4734	5147	4907	5320	5080	5493	5253	5666	5426	5839	5599	6012	5772	6185	5945	6358	6118	6531
ø100	6220	6787	6448	7015	6676	7243	6904	7471	7132	7699	7360	7927	7588	8155	7816	8383	8044	8611	8272	8839

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1k	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

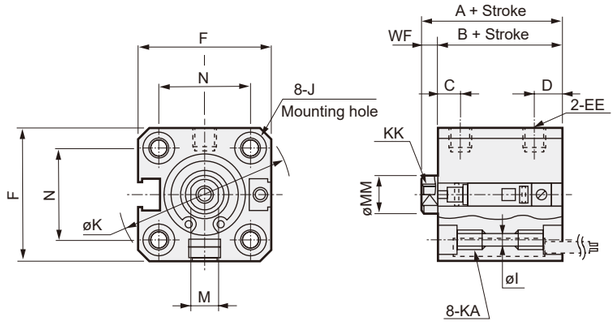
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

Note: Foot type mounting brackets are 2 pcs/set.

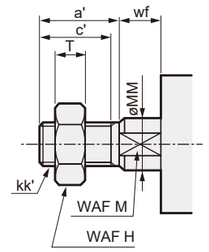
Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD-K(L)-12 to 25

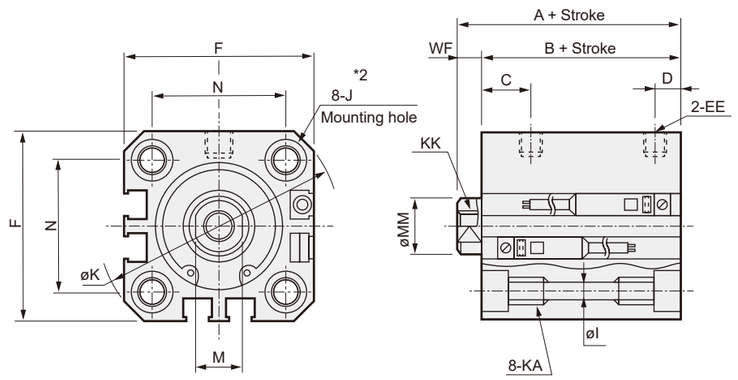
ø12, ø16



● Rod end male thread part



ø20, ø25



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D *2	EE	F	I	J *2	K	KA *2	KK	M	MM	N	WF
ø12	30.5	27	25.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	30.5	27	25.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	39	34.5	29	24.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	42.5	37.5	32.5	27.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

*2: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, A and B dimensions are the values in Table 1, and there is no counterbore J.

*3: For ø12, ø16 with switch and 5 mm stroke, (A + Stroke) and (B + Stroke) dimensions are as shown in Table 2.

***4: For dimensions with each switch, refer to P. 674 to 681.**

***5: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

Table 1 *2

Bore	Dimension with switch A	B	D	J	KA	Dimension without switch A	B	J	KA
ø20	50.5	46	8	-	M6 depth 16	40.5	36	-	M6 depth 16
ø25	56	51	11	-	M6 depth 16	46	41	-	M6 depth 16

Table 2 *3

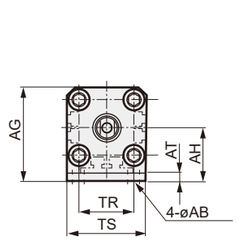
Bore	A + Stroke	B + Stroke
ø12	40.5	37
ø16	40.5	37

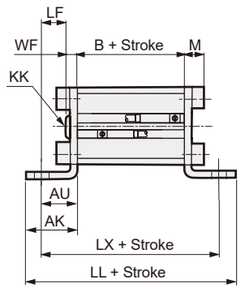
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

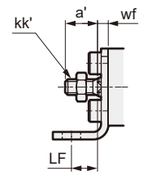
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)





● For rod end male thread



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread *1 KK	WF	LF	With Switch *2 B	LL	LX	Without Switch B	LL	LX	For male thread a'	kk'	wf	LF
ø12	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	8.5	27	63	51	22	58	46	10.5	M5	3.5	8.5
ø16	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	27	63	51	22	58	46	12	M6	3.5	8.5
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	34.5	82.5	66.5	24.5	72.5	56.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	37.5	85.5	69.5	27.5	75.5	59.5	17.5	M10×1.25	5	11

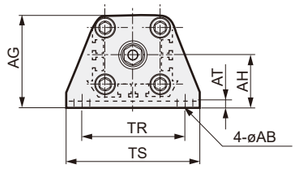
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

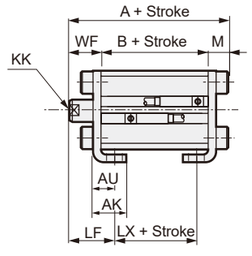
Code / Bore Size (mm)	For female thread With Switch B	LL	LX	Without Switch B	LL	LX
ø20	46	94	78	36	84	68
ø25	51	99	83	41	89	73

*2: For 5 strokes with switch, the dimensions are as follows.

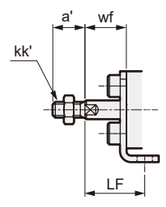
Bore Size	For female thread B	LL	LX
ø12	32	68	56
ø16	32	68	56

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread *1 KK	WF	LF	With Switch *2 A	B	LX	Without Switch A	B	LX	For male thread a'	kk'	wf	LF
ø12	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	46.5	27	15	41.5	22	10	10.5	M5	13.5	19.5
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	46.5	27	15	41.5	22	10	12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	58.2	34.5	22.5	48.2	24.5	12.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	61.7	37.5	22.5	51.7	27.5	12.5	17.5	M10×1.25	15	22.5

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

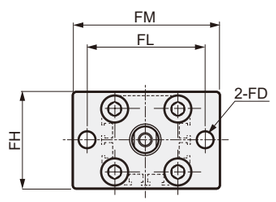
Code / Bore Size (mm)	For female thread With Switch A	B	LX	Without Switch A	B	LX
ø20	69.7	46	34	59.7	36	24
ø25	75.2	51	36	65.2	41	26

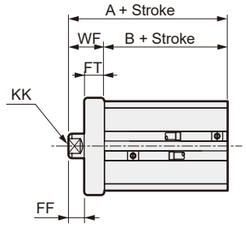
*2: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread A	B	LX
ø12	51.5	32	20
ø16	51.5	32	20

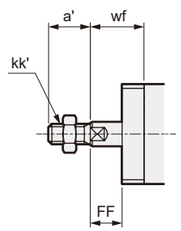
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)





● For rod end male thread



Code / Bore Size (mm)	Common dimension					For female thread *1							For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch *2 A	With Switch *2 B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø12	4.5	25	45	55	5.5	8	M3 depth 6	13.5	40.5	27	35.5	22	8	10.5	M5	13.5
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	40.5	27	35.5	22	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	49	34.5	39	24.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	52.5	37.5	42.5	27.5	7	17.5	M10×1.25	15

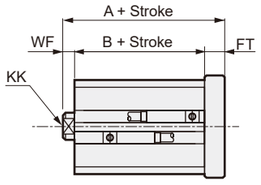
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

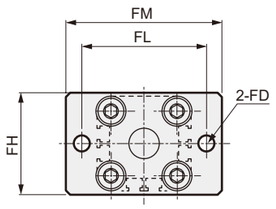
Code / Bore Size (mm)	For female thread			
	With Switch A	With Switch B	Without Switch A	Without Switch B
ø20	60.5	46	50.5	36
ø25	66	51	56	41

*2: For 5 strokes with switch, the dimensions are as follows.

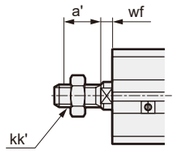
Bore Size	For female thread A	For female thread B
ø12	45.5	32
ø16	45.5	32

● Head Side Flange Type (FB)





● For rod end male thread



Code / Bore Size (mm)	Common dimension					For female thread *1							For male thread			
	FD	FH	FL	FM	FT	KK	WF	With Switch *2 A	With Switch *2 B	Without Switch A	Without Switch B	a'	kk'	wf		
ø12	4.5	25	45	55	5.5	M3 depth 6	3.5	36	27	31	22	10.5	M5	3.5		
ø16	4.5	30	45	55	5.5	M4 depth 8	3.5	36	27	31	22	12	M6	3.5		
ø20	6.6	39	48	60	8	M5 depth 7	4.5	47	34.5	37	24.5	14	M8	4.5		
ø25	6.6	42	52	64	8	M6 Depth 12	5	50.5	37.5	40.5	27.5	17.5	M10×1.25	5		

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

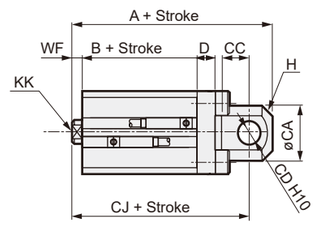
Code / Bore Size (mm)	For female thread			
	With Switch A	With Switch B	Without Switch A	Without Switch B
ø20	58.5	46	48.5	36
ø25	64	51	54	41

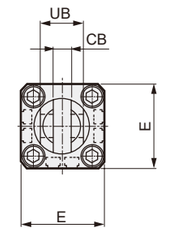
*2: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread A	For female thread B
ø12	41	32
ø16	41	32

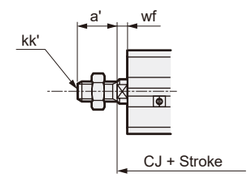
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Double Knuckle Clevis Type (CB)





● For rod end male thread



Code / Bore Size (mm)	Common dimension								For female thread *1								For male thread *1				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch *2 A	With Switch *2 B	With Switch *2 CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch *2 CJ	Without Switch CJ
ø12	13.5	$6.5^{+0.4}_{+0.1}$	7	5	5	25	C1.5	$12^{-0.1}_{-0.4}$	M3 depth 6	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	3.5	44.5	39.5
ø16	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	51.5	27	45.5	46.5	22	40.5	12	M6	3.5	45.5	40.5
ø20	24	$8^{+0.4}_{+0.1}$	12	10	8	36	C4	$19^{-0.1}_{-0.4}$	M5 depth 7	4.5	72	34.5	62	62	24.5	52	14	M8	4.5	62	52
ø25	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	81.5	37.5	69.5	71.5	27.5	59.5	17.5	M10×1.25	5	69.5	59.5

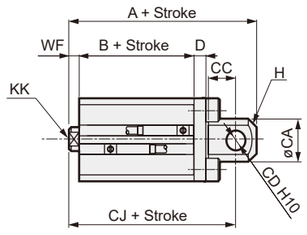
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

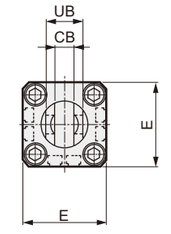
Code / Bore Size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø20	83.5	46	73.5	80	36	63.5	73.5	63.5
ø25	95	51	83	90	41	73	83	73

*2: For 5 strokes with switch, the dimensions are as follows.

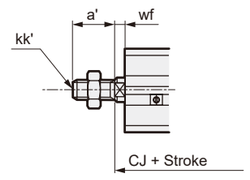
Bore Size	For female thread A	For female thread B	For female thread CJ	For male thread CJ
ø12	55.5	32	49.5	49.5
ø16	56.5	32	50.5	50.5

● Double clevis type (compact type) (CB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension								For female thread *1								For male thread *1				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch *2 A	With Switch *2 B	With Switch *2 CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch *2 CJ	Without Switch CJ
ø12	12	$5^{+0.4}_{+0.1}$	7	5	4	25	C1.5	$10^{-0.1}_{-0.3}$	M3 depth 6	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	3.5	44.5	39.5
ø16	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	51.5	27	45.5	46.5	22	40.5	12	M6	3.5	45.5	40.5
ø20	20	$8^{+0.4}_{+0.1}$	12	8	5	36	C4	$16^{-0.1}_{-0.3}$	M5 depth 7	4.5	66	34.5	57	56	24.5	47	14	M8	4.5	57	47
ø25	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	72.5	37.5	62.5	62.5	27.5	52.5	17.5	M10×1.25	5	62.5	52.5

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

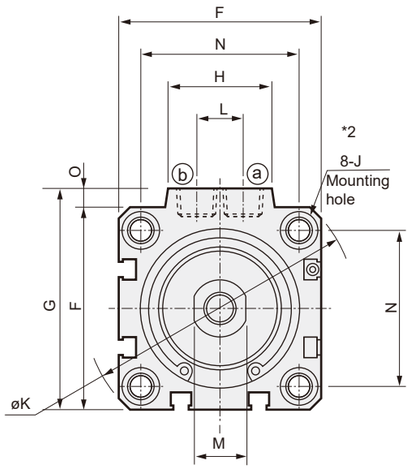
Code / Bore Size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø20	77.5	46	68.5	71	36	58.5	68.5	58.5
ø25	86	51	76	78	41	66	76	66

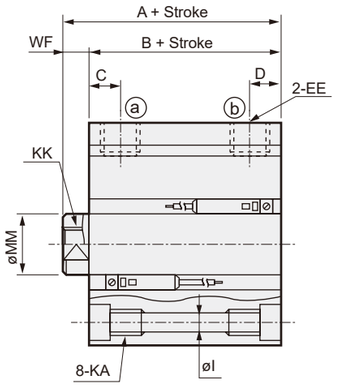
*2: For 5 strokes with switch, the dimensions are as follows.

Bore Size	For female thread A	For female thread B	For female thread CJ	For male thread CJ
ø12	55.5	32	49.5	49.5
ø16	56.5	32	50.5	50.5

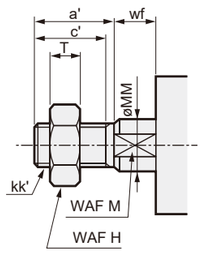
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-K(L)-32 to 100

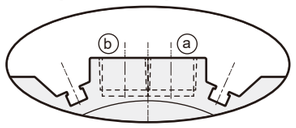




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D *2	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	50	43	40	33	8	8	Rc 1/8	45	49.5	24	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	56.5	49.5	46.5	39.5	12	8.5	Rc 1/8	52	57	24	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	58.5	50.5	48.5	40.5	10.5	10.5	Rc 1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	64	56	54	46	13	11	Rc 1/4	77	84	33	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	73.5	63.5	63.5	53.5	16	13	Rc 3/8	98	104	38	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	85	73	75	63	23	15	Rc 3/8	117	123.5	38	10.5	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, A, B, D dimensions are the values in Table 1, and there is no counterbore J.
***3: For dimensions with each switch, refer to P. 674 to 681.**
***4: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

Table 1 Table2

Bore	Dimension with switch A	B	D	KA	Dimension without switch A	B	D
ø32	57.5	50.5	8	M6 depth 17	47.5	40.5	8
ø40	66	59	12	M6 depth 17	56	49	12
ø50	72	64	10.5	M8 depth 20	62	54	10.5
ø63	74	66	13	M10 depth 34	64	56	13
ø80	83.5	73.5	16	M12 depth 39	73.5	63.5	16
ø100	95	83	23	M12 depth 39	85	73	23

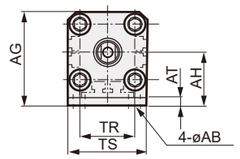
● Rod end male thread part dimension table

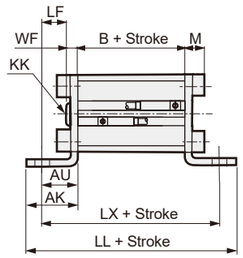
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

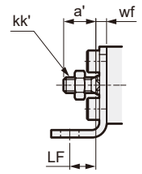
● Axial Foot Type (LB)

· ø32

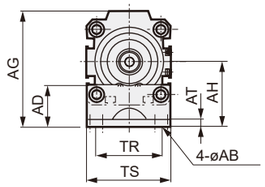


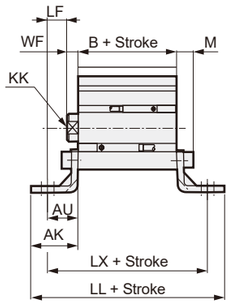


● For rod end male thread

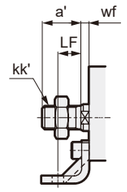


· ø40 to ø100





● For rod end male thread



Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch *1 B	With Switch *1 LL	With Switch *1 LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	43	91	75	33	81	65	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	56	136	106	46	126	96	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	63.5	163.5	133.5	53.5	153.5	123.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	73	173	143	63	163	133	35.5	M26×1.5	8	27

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

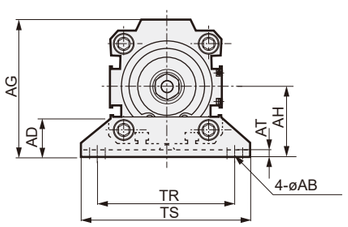
Code / Bore Size (mm)	For female thread With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX
ø32	50.5	98.5	82.5	40.5	88.5	72.5
ø40	59	117	97	49	107	87
ø50	64	132	108	54	122	98
ø63	66	146	116	56	136	106
ø80	73.5	173.5	143.5	63.5	163.5	133.5
ø100	83	183	153	73	173	143

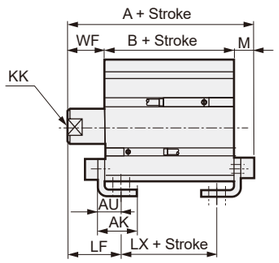
*2: LB cannot be selected when B + stroke is at or less than the stroke below.
ø63: 42 or less ø80, ø100: 69 or less

Outline Dimension Drawing (Bore size: ø32 to ø100)

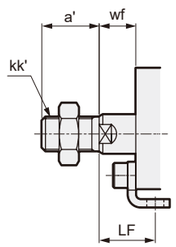
● Axial Foot Type (Compact Type) (LB2)

· ø32 to ø100





● For rod end male thread



Code / Bore Size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch *1 A	With Switch *1 B	With Switch *1 LX	Without Switch A	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	69.2	43	27	59.2	33	17	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	75.7	49.5	33.5	65.7	39.5	23.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	79.7	50.5	27.5	69.7	40.5	17.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	87.2	56	30	77.2	46	20	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	100	63.5	33.5	90	53.5	23.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	113	73	39	103	63	29	35.5	M26×1.5	18	35

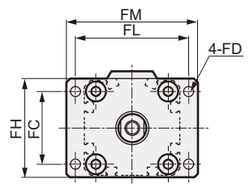
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

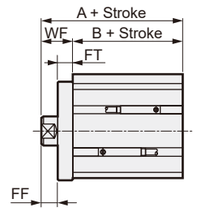
*2: LB2 cannot be selected when B + stroke is at or less than the value below. ø63: 45 or less ø80: 72 or less ø100: 69 or less

Code / Bore Size (mm)	For female thread					
	With Switch			Without Switch		
	A	B	LX	A	B	LX
ø32	76.7	50.5	34.5	66.7	40.5	24.5
ø40	85.2	59	43	75.2	49	33
ø50	93.2	64	41	83.2	54	31
ø63	97.2	66	40	87.2	56	30
ø80	110	73.5	43.5	100	63.5	33.5
ø100	123	83	49	113	73	39

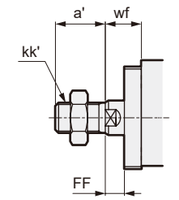
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)





● For rod end male thread

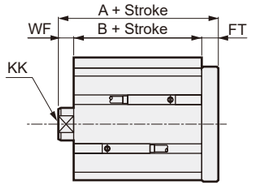


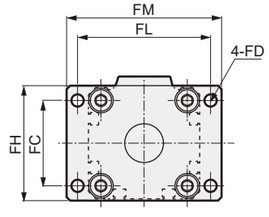
Code / Bore Size (mm)	Common dimension						For female thread							For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch *1 A	With Switch *1 B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	60	43	50	33	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	66.5	49.5	56.5	39.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	68.5	50.5	58.5	40.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	74	56	64	46	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	83.5	63.5	73.5	53.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	95	73	85	63	7	35.5	M26×1.5	18

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

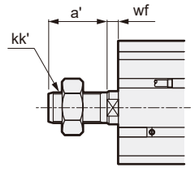
Code / Bore Size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	67.5	50.5	57.5	40.5
ø40	76	59	66	49
ø50	82	64	72	54
ø63	84	66	74	56
ø80	93.5	73.5	83.5	63.5
ø100	105	83	95	73

● Head Side Flange Type (FB)





● For rod end male thread



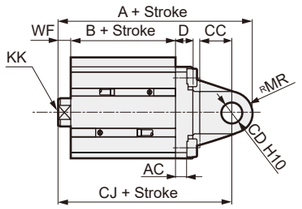
Code / Bore Size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch *1 A	With Switch *1 B	Without Switch A	Without Switch B	a'	kk'	wf
ø32	34	5.5	48	56	65	8	M8 depth 13	7	58	43	48	33	23.5	M14×1.5	5
ø40	40	5.5	54	62	72	8	M8 depth 13	7	64.5	49.5	54.5	39.5	23.5	M14×1.5	5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	67.5	50.5	57.5	40.5	28.5	M18×1.5	5
ø63	60	9	80	92	108	9	M10 depth 15	8	73	56	63	46	28.5	M18×1.5	5
ø80	77	11	99	116	134	11	M16 depth 21	10	84.5	63.5	74.5	53.5	35.5	M22×1.5	8
ø100	94	11	117	136	154	11	M20 depth 27	12	96	73	86	63	35.5	M26×1.5	8

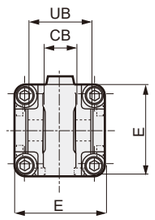
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	65.5	50.5	55.5	40.5
ø40	74	59	64	49
ø50	81	64	71	54
ø63	83	66	73	56
ø80	94.5	73.5	84.5	63.5
ø100	106	83	96	73

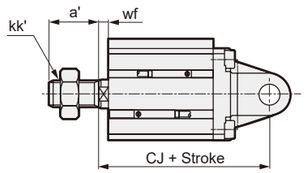
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

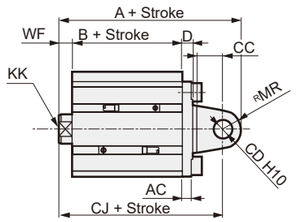


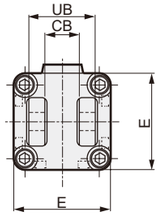
Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch *1			Without Switch			a'	kk'	wf	With Switch *1	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	92	43	80	82	33	70	23.5	M14×1.5	5	78	68
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	100.5	49.5	88.5	90.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	102.5	50.5	90.5	92.5	40.5	80.5	28.5	M18×1.5	5	87.5	77.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	117	56	101	107	46	91	28.5	M18×1.5	5	98	88
ø80	10.5	$28^{+0.4}_{+0.1}$	30	20	14	98	20	$56^{-0.1}_{-0.4}$	M16 depth 21	10	145.5	63.5	125.5	135.5	53.5	115.5	35.5	M22×1.5	8	123.5	113.5
ø100	10.5	$28^{+0.4}_{+0.1}$	30	20	16	117	20	$56^{-0.1}_{-0.4}$	M20 depth 27	12	157	73	137	147	63	127	35.5	M26×1.5	8	133	123

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

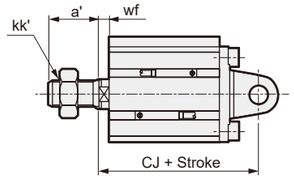
Code / Bore Size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	99.5	50.5	87.5	89.5	40.5	77.5	85.5	75.5
ø40	110	59	98	100	49	88	96	86
ø50	116	64	104	106	54	94	101	91
ø63	127	66	111	117	56	101	108	98
ø80	155.5	73.5	135.5	145.5	63.5	125.5	133.5	123.5
ø100	167	83	147	157	73	137	143	133

● Double clevis type (compact type) (CB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch *1			Without Switch			a'	kk'	wf	With Switch *1	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	80	43	70	70	33	60	23.5	M14×1.5	5	68	58
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	88.5	49.5	78.5	78.5	39.5	68.5	23.5	M14×1.5	5	76.5	66.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	100.5	50.5	86.5	90.5	40.5	76.5	28.5	M18×1.5	5	83.5	73.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	108	56	94	98	46	84	28.5	M18×1.5	5	91	81
ø80	9	$28^{+0.4}_{+0.1}$	27	18	10	98	18	$56^{-0.1}_{-0.3}$	M16 depth 21	10	129.5	63.5	111.5	119.5	53.5	101.5	35.5	M22×1.5	8	109.5	99.5
ø100	12	$32^{+0.4}_{+0.1}$	31	22	13	117	22	$64^{-0.1}_{-0.3}$	M20 depth 27	12	152	73	130	142	63	120	35.5	M26×1.5	8	126	116

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	87.5	50.5	77.5	77.5	40.5	67.5	75.5	65.5
ø40	98	59	88	88	49	78	86	76
ø50	114	64	100	104	54	90	97	87
ø63	118	66	104	108	56	94	101	91
ø80	139.5	73.5	121.5	129.5	63.5	111.5	119.5	109.5
ø100	162	83	140	152	73	130	136	126

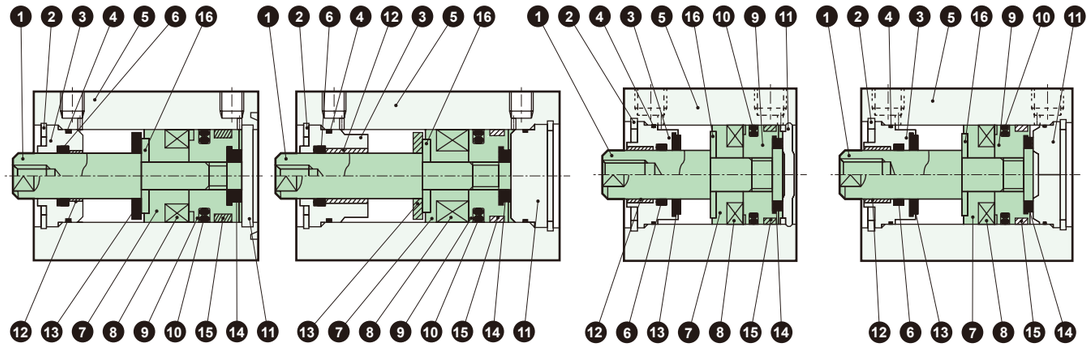
MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

Internal Structure Diagram/Material

● SSD-KL-12 to 25 (Double Acting, High Load Type with Switch)

⟨ø20: 100 strokes or less / ø25: 150 strokes or less⟩ ⟨ø20: Exceeding 100 stroke up to 200 stroke / ø25: Exceeding 150 stroke up to 300 stroke⟩

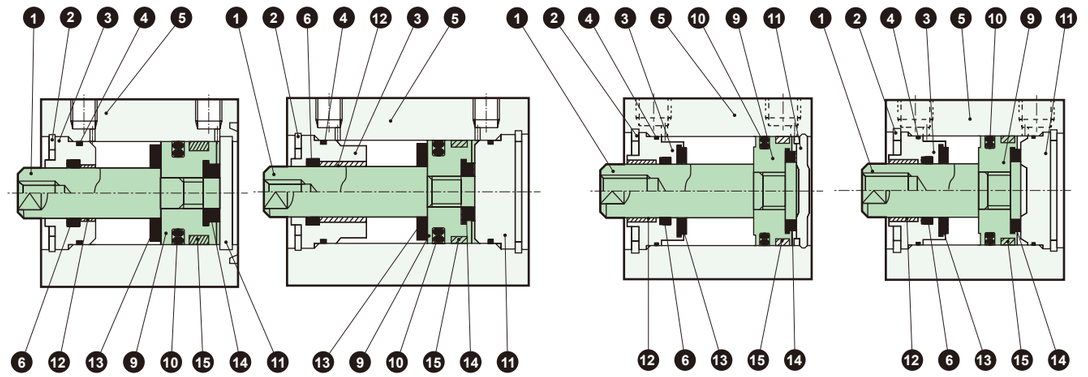


● SSD-KL-32 (Double Acting, High Load Type with Switch)

⟨150 strokes or less⟩ ⟨Exceeding 150 stroke up to 300 stroke⟩

● SSD-K-12 to 25 (Double Acting, High Load Type)

⟨ø20: 100 strokes or less / ø25: 150 strokes or less⟩ ⟨ø20: Exceeding 100 stroke up to 200 stroke / ø25: Exceeding 150 stroke up to 300 stroke⟩



● SSD-K-32 (Double Acting, High Load Type)

⟨150 strokes or less⟩ ⟨Exceeding 150 stroke up to 300 stroke⟩

Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32: Steel	ø16 to ø32 Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	ø12 to 25: Alumite ø32: Chromate
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12: Aluminum alloy ø16 to ø32: Special resin	ø12: Chromate
8	Magnet	Plastic	

Part No.	Part Name	Material	Remarks
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to ø25: Stainless steel ø32: Aluminum alloy	(*1) ø32: Alumite
12	Bushing	Bearing Alloy	ø20 to ø32 only
13	Cushion rubber (R)	Urethane Rubber	
14	Cushion rubber (H)	Urethane Rubber	
15	Wear Ring	Polyacetal	
16	Spacer washer	Stainless Steel	ø20 to ø32 only

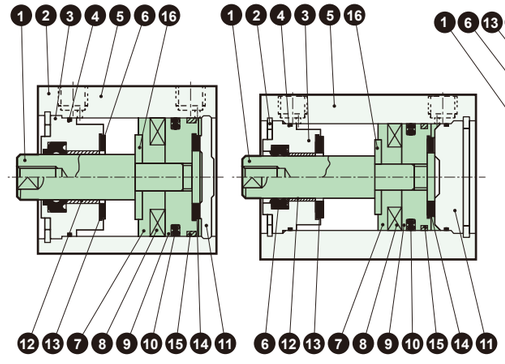
*1: For cover of long stroke type (ø20 with 100 mm stroke and over, ø25, ø32 with 150 mm stroke and over), material: Aluminum alloy, remarks: This will be alumite treatment.

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

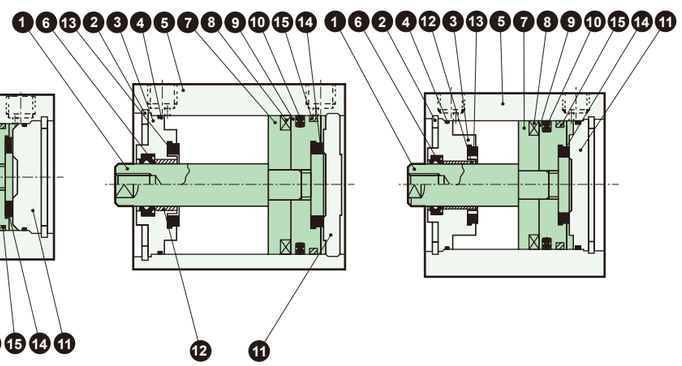
● SSD-KL-40, 50 (Double Acting, High Load Type with Switch)

⟨150 strokes or less⟩ ⟨Exceeding 150 stroke up to 300 stroke⟩



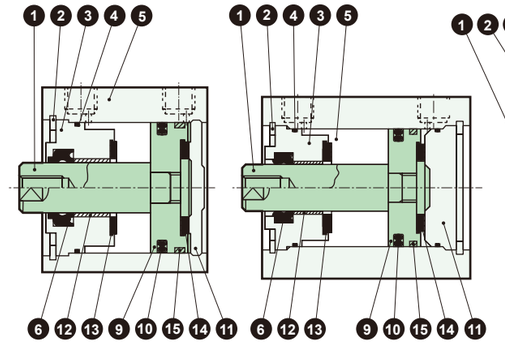
● SSD-KL-63 to 100 (Double Acting, High Load Type with Switch)

⟨200 strokes or less⟩ ⟨Exceeding 200 stroke up to 300 stroke⟩



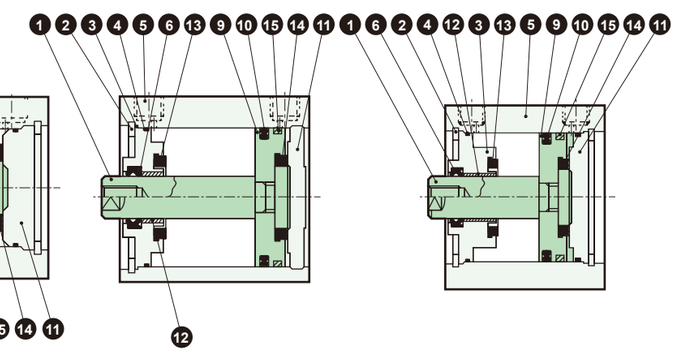
● SSD-K-40, 50 (Double Acting, High Load Type)

⟨150 strokes or less⟩ ⟨Exceeding 150 stroke up to 300 stroke⟩



● SSD-K-63 to 100 (Double Acting, High Load Type)

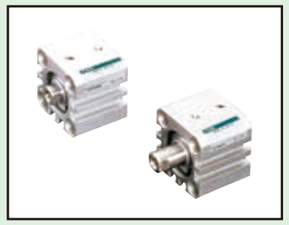
⟨200 strokes or less⟩ ⟨Exceeding 200 stroke up to 300 stroke⟩



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	ø40, ø50: Chromate ø63 to ø100: Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø40, ø50: Special resin ø63 to ø100: Aluminum alloy	ø63 to ø100: Chromate
8	Magnet	Plastic	

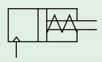
Part No.	Part Name	Material	Remarks
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
13	Cushion rubber (R)	Urethane Rubber	
14	Cushion rubber (H)	Urethane Rubber	
15	Wear Ring	Polyacetal	
16	Spacer washer	Stainless Steel	ø40 to ø50 only

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Single Acting, Push Type
SSD-X Series
Single Acting, Retracting Type
SSD-Y Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50

Circuit Diagram Symbol SSD-X  SSD-Y 

RoHS

Model No. Notation Method

Without Switch (Without magnet for switch): SSD-X - 12 - [ ] - 5 ——— N - LB - I

With Switch (Built-in magnet for switch): SSD-XL - 12 - [ ] - 5 - T0H - R - N - LB - I

Off-delay type/ With T1□ switch (ø12, ø16 only): SSD-XL1 - 12 - [ ] - 10 - T2JH - R - N - LB - I

❶ Model No.	❷ Bore Size	❸ Piping thread type	❹ Stroke	❺ Switch Model No.	❻ Number of Switches	❼ Option	❽ Mounting bracket	❾ Accessories

❶ Model No.

Code	Content
SSD-X	Single Acting, Push Type
SSD-XL	Single Acting/Push Type with Switch
SSD-XL1	Single acting / Push type, with switch, Off-delay type with T1□ switch (ø12, ø16)
SSD-Y	Single Acting, Retracting Type
SSD-YL	Single Acting/Retracting Type with Switch
SSD-YL1	Single acting/pull with switch, off-delay with T1□ switch (ø12, ø16)

❷ Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

❸ Port Thread Type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø50)
NN	NPT thread (custom order) (ø32 to ø50)
GN	G thread (custom order) (ø32 to ø50)

❹ Stroke (mm)

Bore Size	Stroke
ø12 to ø32	5, 10
ø40, ø50	10, 20

Note: For details, see P. 406.

❺ Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator Lamp		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches for AC magnetic fields cannot be mounted on ø12 and ø16.
*5: T8□ switches cannot be mounted on ø12 to ø32.
*6: Products less than 10 mm with 2-color indication type, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured.
*7: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*8

*8: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❽ Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (pin and retaining ring included)	
CB2	Double knuckle clevis type (Compact type) (Pin and retaining ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 409, 410, 413, 414, 417, 418, 421, and 422 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❾ Accessories

Code	Content	
I	Single Knuckle	
I2	Rod eye (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1,R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-$^{X}_{Y}$-.....-XP5

Rechargeable Battery Compatible Specification

(Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

SSD-$^{X}_{Y}$-.....-P4*

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW - T0H

❺ Switch Model No.

Specifications

Item	SSD-X SSD-Y SSD-XL (with switch) SSD-YL (with switch)						
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Actuation method	SSD-X, XL: Single acting/push, SSD-Y, YL: Single Acting, Retracting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.2		0.17		0.12		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (No freezing)						
Port Size	M5				Rc 1/8		Rc 1/4
Stroke tolerance mm	+1.0 0						
Operating Piston Speed mm/s	50 to 500						
Cushion	None						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1

Note: Do not leave single acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released. If it is necessary to use the product while pressurized, use a double-acting type.

Stroke

Stroke (mm)		Applicable Bore						
		ø12	ø16	ø20	ø25	ø32	ø40	ø50
Standard Stroke	5	●	●	●	●	●		
	10	●	●	●	●	●	●	●
	20						●	●

*1: For models with a switch, refer to the table below.

***2: For the minimum stroke when using mounting brackets LB and LB2, see P. 409, 413, 417, and 421.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T*		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	-	-
ø16	5	5	-	-
ø20	5	5	-	-
ø25	5	5	-	-
ø32	5	5	-	-
ø40	10	10	20	20
ø50	10	10	20	20

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		20	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	40	80	49	89	-	-
ø16	52	92	64	104	-	-
ø20	74	114	89	129	-	-
ø25	107	147	127	167	-	-
ø32	155	195	183	223	-	-
ø40	-	-	285	325	358	398
ø50	-	-	459	499	572	612

SSD-X/SSD-Y Spring load

(Unit: N)

Bore Size (mm)	Stroke (mm)	SSD-X		SSD-Y	
		At 0 Stroke	At Full Stroke Operation	At 0 Stroke	At Full Stroke Operation
ø12	5	8.7	13.7	2.9	11
	10	2.9	13.7	2.9	11.3
ø16	5	10.2	15.1	3.5	13.2
	10	5.4	15.1	3.5	13.2
ø20	5	16.8	24	11.8	30.4
	10	9.7	24	12.7	30.3
ø25	5	17.1	23.5	10.8	26.5
	10	10.8	23.5	10.8	26.5
ø32	5	24.1	28.5	17	27
	10	19.6	28.5	17.9	27.4
ø40	10	28.9	38.2	19.3	33
	20	19.6	38.2	19.9	40.2
ø50	10	33.3	47.9	24.5	84.3
	20	18.8	47.9	23.1	82.3

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^{2}	1.13×10^{2}
	Pull	-	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	-	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}

Mounting Bracket Model No. Notation Method

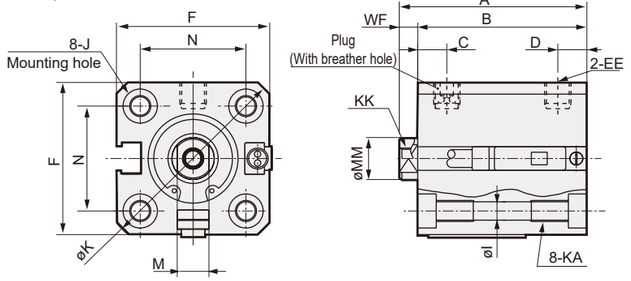
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50

Note: Foot type mounting brackets are 2 pcs/set.

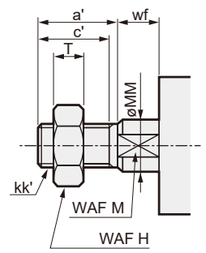
Outline Dimension Drawing (Bore size: ø12 to ø25)

●SSD-X (L)-12 to 25

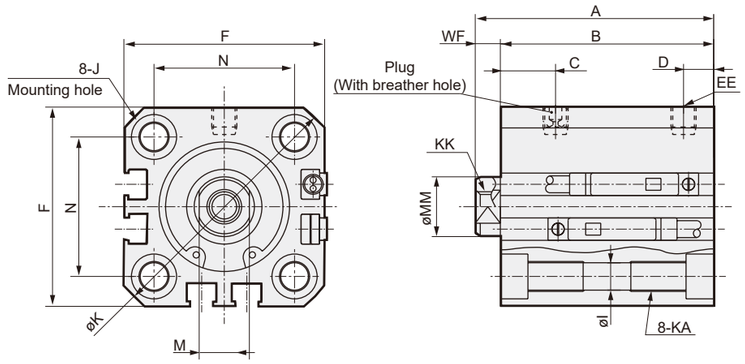
ø12, ø16



● Rod end male thread part



ø20, ø25



Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	Stroke	5	35.5	32	25.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
		10			30.5	27													
ø16	Stroke	5	35.5	32	25.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
		10			30.5	27													
ø20	Stroke	5	39	34.5	29	24.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
		10	44	39.5	34	29.5													
ø25	Stroke	5	42.5	37.5	32.5	27.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5
		10	47.5	42.5	37.5	32.5													

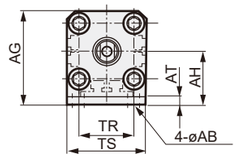
***1: For dimensions with each switch, refer to P. 674 to 681.**
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

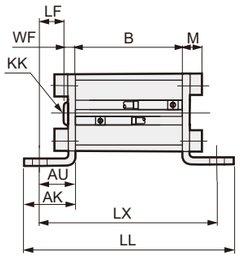
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

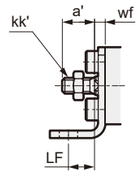
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)





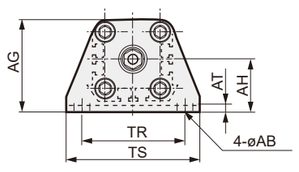
● For rod end male thread

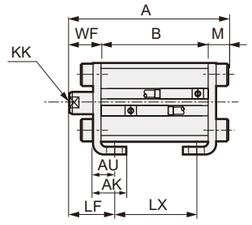


Code / Bore Size (mm)			Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	Stroke	5	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	8.5	32	68	56	22	58	46	10.5	M5	3.5	8.5
		10													32	68	56	27	63	51				
ø16	Stroke	5	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	32	68	56	22	58	46	12	M6	3.5	8.5
		10													32	68	56	27	63	51				
ø20	Stroke	5	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	34.5	82.5	66.5	–	–	–	14	M8	4.5	11.5
		10													39.5	87.5	71.5	29.5	77.5	61.5				
ø25	Stroke	5	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	37.5	85.5	69.5	27.5	75.5	59.5	17.5	M10×1.25	5	11
		10													42.5	90.5	74.5	32.5	80.5	64.5				

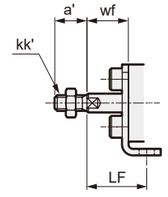
*1: For ø20 without switch, 5 strokes, LB cannot be selected.

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

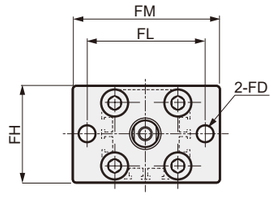


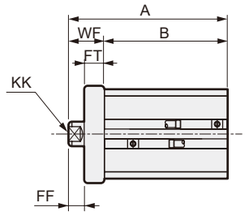
Code / Bore Size (mm)			Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	Stroke	5	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	51.5	32	20	41.5	22	10	10.5	M5	13.5	19.5
		10													51.5	32	20	46.5	27	15				
ø16	Stroke	5	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	51.5	32	20	41.5	22	10	12	M6	13.5	19.5
		10													51.5	32	20	46.5	27	15				
ø20	Stroke	5	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	58.2	34.5	22.5	–	–	–	14	M8	14.5	20.5
		10													63.2	39.5	27.5	53.2	29.5	17.5				
ø25	Stroke	5	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	61.7	37.5	22.5	51.7	27.5	12.5	17.5	M10×1.25	15	22.5
		10													66.7	42.5	27.5	56.7	32.5	17.5				

*1: For ø20 without switch, 5 strokes, LB2 cannot be selected.

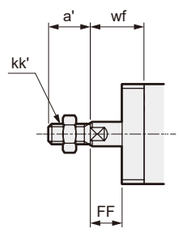
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)



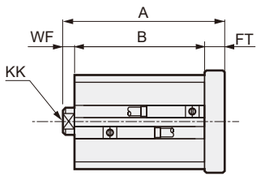


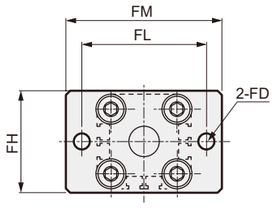
● For rod end male thread



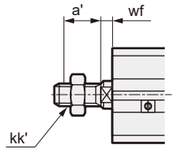
Code / Bore Size (mm)			Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø12	Stroke	5	4.5	25	45	55	5.5	8	M3 depth 6	13.5	45.5	32	35.5	22	8	10.5	M5	13.5
		10									45.5	32	40.5	27				
ø16	Stroke	5	4.5	30	45	55	5.5	8	M4 depth 8	13.5	45.5	32	35.5	22	8	12	M6	13.5
		10									45.5	32	40.5	27				
ø20	Stroke	5	6.6	39	48	60	8	6.5	M5 depth 7	14.5	49	34.5	39	24.5	6.5	14	M8	14.5
		10									54	39.5	44	29.5				
ø25	Stroke	5	6.6	42	52	64	8	7	M6 Depth 12	15	52.5	37.5	42.5	27.5	7	17.5	M10×1.25	15
		10									57.5	42.5	47.5	32.5				

● Head Side Flange Type (FB)





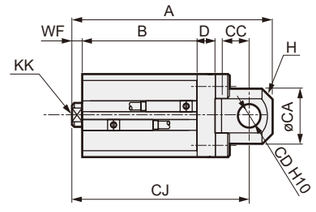
● For rod end male thread

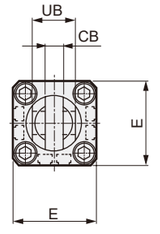


Code / Bore Size (mm)			Common dimension FD	FH	FL	FM	FT	For female thread KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø12	Stroke	5	4.5	25	45	55	5.5	M3 depth 6	3.5	41	32	31	22	10.5	M5	3.5
		10								41	32	36	27			
ø16	Stroke	5	4.5	30	45	55	5.5	M4 depth 8	3.5	41	32	31	22	12	M6	3.5
		10								41	32	36	27			
ø20	Stroke	5	6.6	39	48	60	8	M5 depth 7	4.5	47	34.5	37	24.5	14	M8	4.5
		10								52	39.5	42	29.5			
ø25	Stroke	5	6.6	42	52	64	8	M6 Depth 12	5	50.5	37.5	40.5	27.5	17.5	M10×1.25	5
		10								55.5	42.5	45.5	32.5			

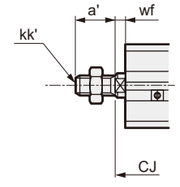
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Double Knuckle Clevis Type (CB)



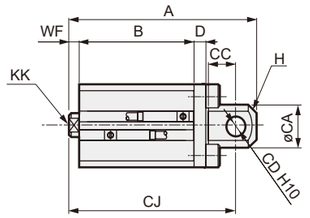


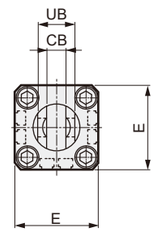
● For rod end male thread



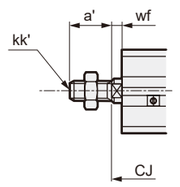
Code / Bore Size (mm)			Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	Stroke	5	13.5	6.5 +0.4 +0.1	7	5	5	25	C1.5	12 -0.1 -0.4	M3 depth 6	3.5	55.5	32	49.5	45.5	22	39.5	10.5	M5	3.5	49.5	39.5
		10											55.5	32	49.5	50.5	27	44.5				49.5	44.5
ø16	Stroke	5	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	56.5	32	50.5	46.5	22	40.5	12	M6	3.5	50.5	40.5
		10											56.5	32	50.5	51.5	27	45.5				50.5	45.5
ø20	Stroke	5	24	8 +0.4 +0.1	12	10	8	36	C4	19 -0.1 -0.4	M5 depth 7	4.5	72	34.5	62	62	24.5	52	14	M8	4.5	62	52
		10											77	39.5	67	67	29.5	57				67	57
ø25	Stroke	5	27.5	10 +0.4 +0.1	16	12	8	40	C5	21 -0.1 -0.4	M6 Depth 12	5	81.5	37.5	69.5	71.5	27.5	59.5	17.5	M10×1.25	5	69.5	59.5
		10											86.5	42.5	74.5	76.5	32.5	64.5				74.5	64.5

● Double clevis type (compact type) (CB2)





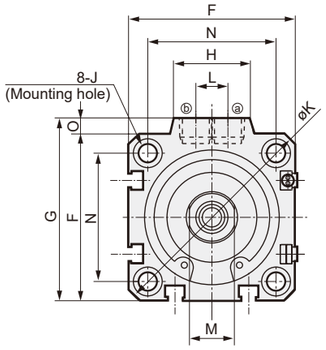
● For rod end male thread

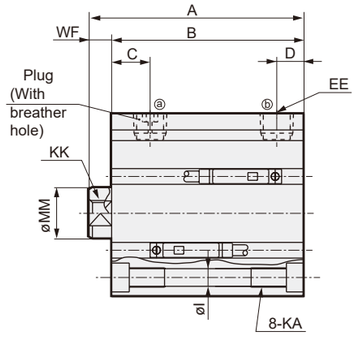


Code / Bore Size (mm)			Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	Stroke	5	12	5 +0.4 +0.1	7	5	4	25	C1.5	10 -0.1 -0.3	M3 depth 6	3.5	55.5	32	49.5	45.5	22	39.5	10.5	M5	3.5	49.5	39.5
		10											55.5	32	49.5	50.5	27	44.5				49.5	44.5
ø16	Stroke	5	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	56.5	32	50.5	46.5	22	40.5	12	M6	3.5	50.5	40.5
		10											56.5	32	50.5	51.5	27	45.5				50.5	45.5
ø20	Stroke	5	20	8 +0.4 +0.1	12	8	5	36	C4	16 -0.1 -0.3	M5 depth 7	4.5	66	34.5	57	56	24.5	47	14	M8	4.5	57	47
		10											71	39.5	62	61	29.5	52				62	52
ø25	Stroke	5	24	10 +0.4 +0.1	14	10	5	40	C5	20 -0.1 -0.3	M6 Depth 12	5	72.5	37.5	62.5	62.5	27.5	52.5	17.5	M10×1.25	5	62.5	52.5
		10											77.5	42.5	67.5	67.5	32.5	57.5				67.5	57.5

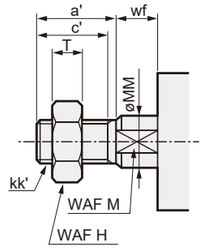
Outline dimension drawing (bore size: ø32 to ø50)

●SSD-X (L)-32 to 50





● Rod end male thread part



Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	Stroke	5	45	38	35	28	8	8	Rc1/8	45	49.5	24	5.5	9 Counterbore Depth 5.5	60	M6 Depth 11	M8 Depth 13	10	14	16	34	4.5	7
		10	50	43	40	33																	
ø40	Stroke	10	56.5	49.5	46.5	39.5	12	8.5	Rc1/8	52	57	24	5.5	9 Counterbore Depth 5.5	69	M6 Depth 11	M8 Depth 13	10	14	16	40	5	7
		20	66.5	59.5	56.5	49.5																	
ø50	Stroke	10	58.5	50.5	48.5	40.5	10.5	10.5	Rc1/4	64	71	33	6.9	11 Counter-bore Depth 6.5	86	M8 Depth 13	M10 Depth 15	15	17	20	50	7	8
		20	68.5	60.5	58.5	50.5																	

***1: For dimensions with each switch, refer to P. 674 to 681.**

***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

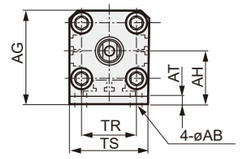
● Rod end male thread part dimension table

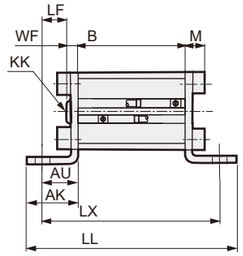
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5

Outline dimension drawing (bore size: ø32 to ø50)

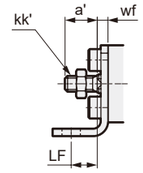
● Axial Foot Type (LB)

・ø32

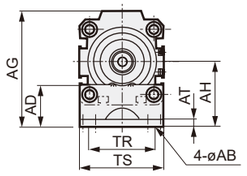


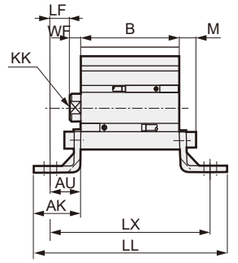


● For rod end male thread

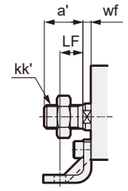


・ø40 to ø50



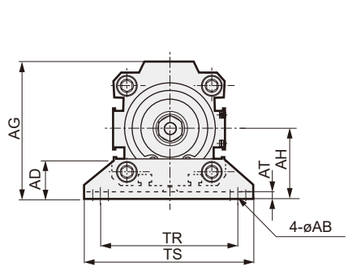


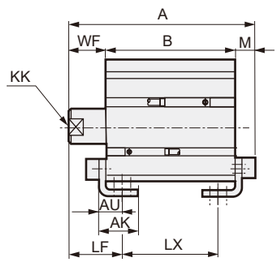
● For rod end male thread



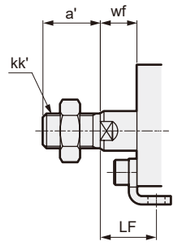
Code / Bore Size (mm)			Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	Stroke	5	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	38	86	70	28	76	60	23.5	M14×1.5	5	11
		10														43	91	75	33	81	65				
ø40	Stroke	10	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	5	14
		20														59.5	117.5	97.5	49.5	107.5	87.5				
ø50	Stroke	10	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	5	17
		20														60.5	128.5	104.5	50.5	118.5	94.5				

● Axial Foot Type (Compact Type) (LB2)





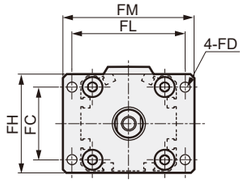
● For rod end male thread

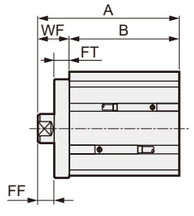


Code / Bore Size (mm)			Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	Stroke	5	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	64.2	38	22	54.2	28	12	23.5	M14×1.5	15	23
		10														69.2	43	27	59.2	33	17				
ø40	Stroke	10	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	75.7	49.5	33.5	65.7	39.5	23.5	23.5	M14×1.5	15	23
		20														85.7	59.5	43.5	75.7	49.5	33.5				
ø50	Stroke	10	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	79.7	50.5	27.5	69.7	40.5	17.5	28.5	M18×1.5	15	26.5
		20														89.7	60.5	37.5	79.7	50.5	27.5				

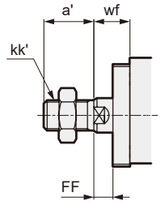
Outline dimension drawing (bore size: ø32 to ø50)

● Rod Side Flange Type (FA)



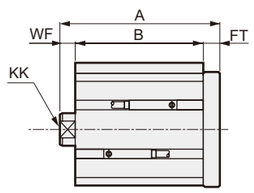


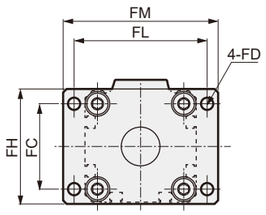
● For rod end male thread



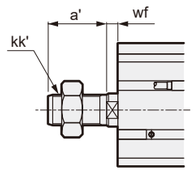
Code / Bore Size (mm)			Common dimension FC	FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø32	Stroke	5	34	5.5	48	56	65	8	9	M8 depth 13	17	55	38	45	28	7	23.5	M14×1.5	15
		10										60	43	50	33				
ø40	Stroke	10	40	5.5	54	62	72	8	9	M8 depth 13	17	66.5	49.5	56.5	39.5	7	23.5	M14×1.5	15
		20										76.5	59.5	66.5	49.5				
ø50	Stroke	10	50	6.6	67	76	89	9	9	M10 depth 15	18	68.5	50.5	58.5	40.5	6	28.5	M18×1.5	15
		20										78.5	60.5	68.5	50.5				

● Head Side Flange Type (FB)





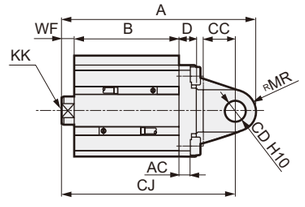
● For rod end male thread

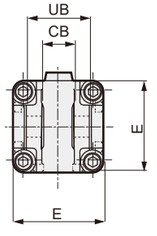


Code / Bore Size (mm)			Common dimension FC	FD	FH	FL	FM	FT	For female thread KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø32	Stroke	5	34	5.5	48	56	65	8	M8 depth 13	7	53	38	43	28	23.5	M14×1.5	5
		10									58	43	48	33			
ø40	Stroke	10	40	5.5	54	62	72	8	M8 depth 13	7	64.5	49.5	54.5	39.5	23.5	M14×1.5	5
		20									74.5	59.5	64.5	49.5			
ø50	Stroke	10	50	6.6	67	76	89	9	M10 depth 15	8	67.5	50.5	57.5	40.5	28.5	M18×1.5	5
		20									77.5	60.5	67.5	50.5			

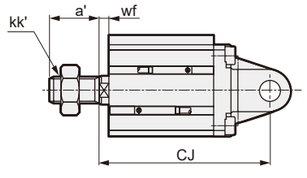
Outline dimension drawing (bore size: ø32 to ø50)

● Double Knuckle Clevis Type (CB)



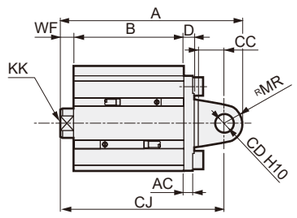


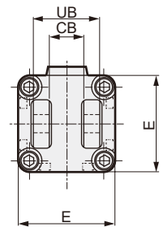
● For rod end male thread



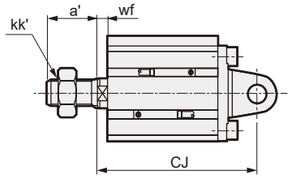
Code / Bore Size (mm)			Common dimension AC	CB	CC	CD	D	E	MR	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	Stroke	5	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	87	38	75	77	28	65	23.5	M14×1.5	5	73	63
		10											92	43	80	82	33	70				78	68
ø40	Stroke	10	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	100.5	49.5	88.5	90.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
		20											110.5	59.5	98.5	100.5	49.5	88.5				96.5	86.5
ø50	Stroke	10	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	102.5	50.5	90.5	92.5	40.5	80.5	28.5	M18×1.5	5	87.5	77.5
		20											112.5	60.5	100.5	102.5	50.5	90.5				97.5	87.5

● Double clevis type (compact type) (CB2)





● For rod end male thread

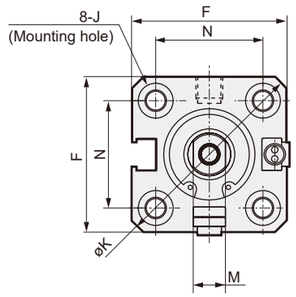


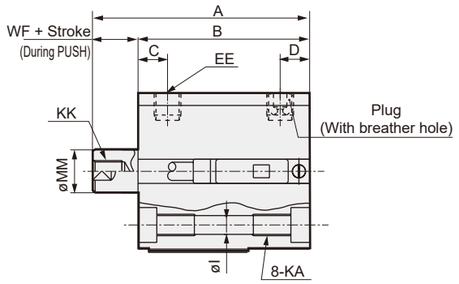
Code / Bore Size (mm)			Common dimension AC	CB	CC	CD	D	E	MR	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	Stroke	5	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	75	38	65	65	28	55	23.5	M14×1.5	5	63	53
		10											80	43	70	70	33	60				68	58
ø40	Stroke	10	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	88.5	49.5	78.5	78.5	39.5	68.5	23.5	M14×1.5	5	76.5	66.5
		20											98.5	59.5	88.5	88.5	49.5	78.5				86.5	76.5
ø50	Stroke	10	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	100.5	50.5	86.5	90.5	40.5	76.5	28.5	M18×1.5	5	83.5	73.5
		20											110.5	60.5	96.5	100.5	50.5	86.5				93.5	83.5

Outline Dimension Drawing (Bore size: ø12 to ø25)

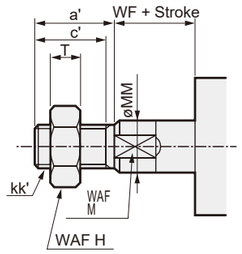
● SSD-Y (L)-12 to 25

ø12, ø16

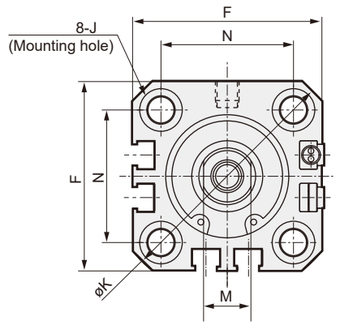


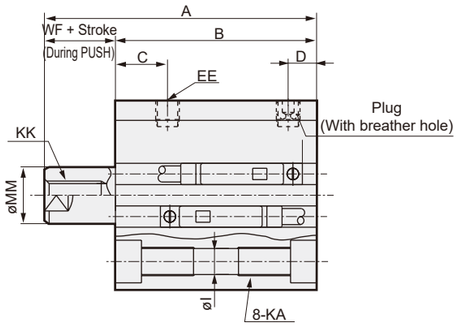


● Rod end male thread part



ø20, ø25





Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	Stroke	5	40.5	32	30.5	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
		10	45.5		40.5	27													
ø16	Stroke	5	40.5	32	30.5	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
		10	45.5		40.5	27													
ø20	Stroke	5	44	34.5	34	24.5	8	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
		10	54	39.5	44	29.5													
ø25	Stroke	5	47.5	37.5	37.5	27.5	11	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5
		10	57.5	42.5	47.5	32.5													

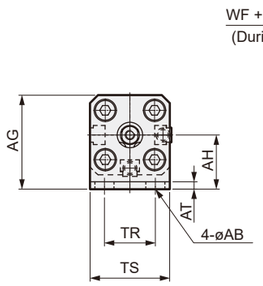
***1: For dimensions with each switch, refer to P. 674 to 681.**
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

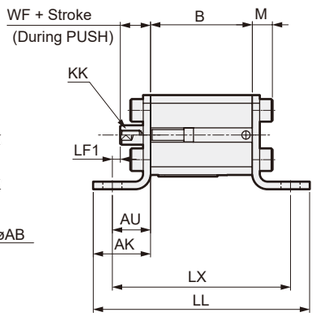
Rod End Male Thread Dimension Table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

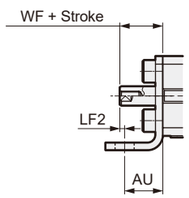
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)

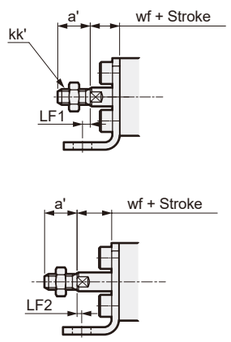




ø12, ø16: At 10 strokes



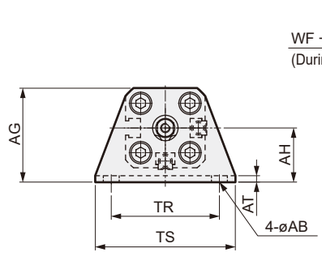
● For rod end male thread

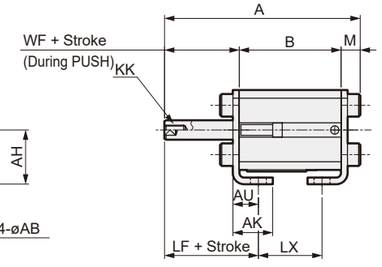


Code / Bore Size (mm)			Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF1	LF2	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF1	LF2
ø12	Stroke	5	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	3.5	-	32	68	56	22	58	46	10.5	M5	3.5	3.5	-
		10												-	1.5	32	68	56	27	63	51				-	1.5
ø16	Stroke	5	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	3.5	-	32	68	56	22	58	46	12	M6	3.5	3.5	-
		10												-	1.5	32	68	56	27	63	51				-	1.5
ø20	Stroke	5	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	6.5	-	34.5	82.5	66.5	-	-	-	14	M8	4.5	6.5	-
		10												1.5	-	39.5	87.5	71.5	29.5	77.5	61.5				1.5	-
ø25	Stroke	5	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	6	-	37.5	85.5	69.5	27.5	75.5	59.5	17.5	M10×1.25	5	6	-
		10												1	-	42.5	90.5	74.5	32.5	80.5	64.5				1	-

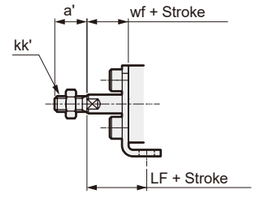
*1: For ø20 without switch, 5 strokes, LB cannot be selected.

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

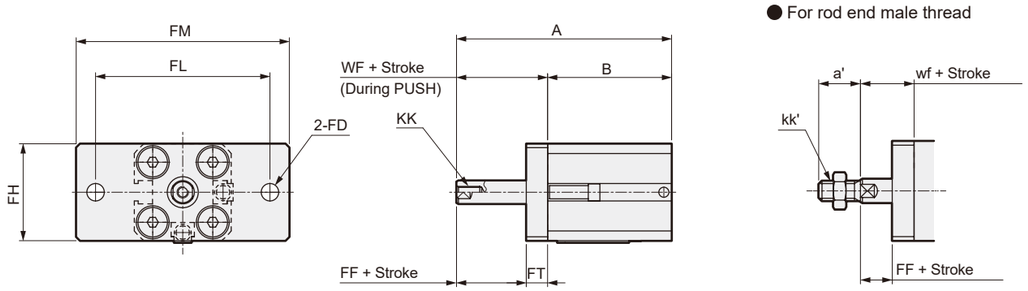


Code / Bore Size (mm)			Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	Stroke	5	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	56.5	32	20	46.5	22	10	10.5	M5	13.5	19.5
		10													56.5	32	20	56.5	27	15				
ø16	Stroke	5	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	56.5	32	20	46.5	22	10	12	M6	13.5	19.5
		10													56.5	32	20	56.5	27	15				
ø20	Stroke	5	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	63.2	34.5	22.5	-	-	-	14	M8	14.5	20.5
		10													68.2	39.5	27.5	63.2	29.5	17.5				
ø25	Stroke	5	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	66.7	37.5	22.5	56.7	27.5	12.5	17.5	M10×1.25	15	22.5
		10													71.7	42.5	27.5	66.7	32.5	17.5				

*1: For ø20 without switch, 5 strokes, LB2 cannot be selected.

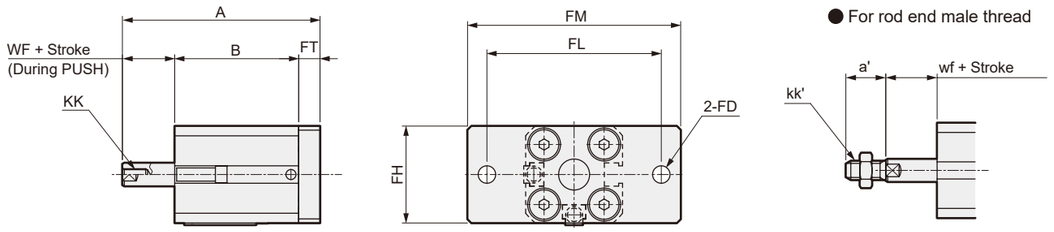
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)



Code / Bore Size (mm)			Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø12	Stroke	5	4.5	25	45	55	5.5	8	M3 depth 6	13.5	50.5	32	40.5	22	8	10.5	M5	13.5
		10									55.5	32	50.5	27				
ø16	Stroke	5	4.5	30	45	55	5.5	8	M4 depth 8	13.5	50.5	32	40.5	22	8	12	M6	13.5
		10									55.5	32	50.5	27				
ø20	Stroke	5	6.6	39	48	60	8	6.5	M5 depth 7	14.5	54	34.5	44	24.5	6.5	14	M8	14.5
		10									64	39.5	54	29.5				
ø25	Stroke	5	6.6	42	52	64	8	7	M6 Depth 12	15	57.5	37.5	47.5	27.5	7	17.5	M10×1.25	15
		10									67.5	42.5	57.5	32.5				

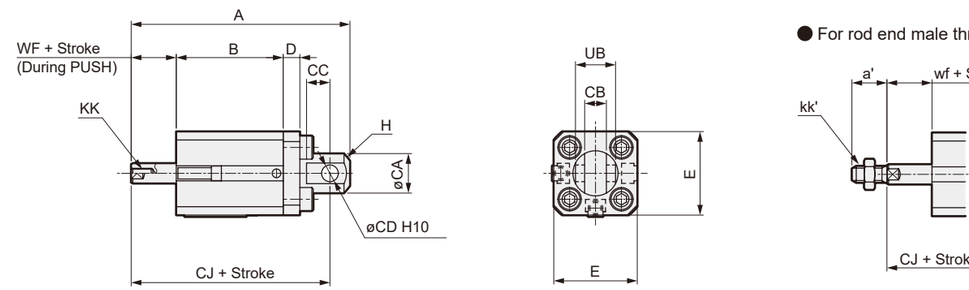
● Head Side Flange Type (FB)



Code / Bore Size (mm)			Common dimension FD	FH	FL	FM	FT	For female thread KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø12	Stroke	5	4.5	25	45	55	5.5	M3 depth 6	3.5	46	32	36	22	10.5	M5	3.5
		10								51	32	46	27			
ø16	Stroke	5	4.5	30	45	55	5.5	M4 depth 8	3.5	46	32	36	22	12	M6	3.5
		10								51	32	46	27			
ø20	Stroke	5	6.6	39	48	60	8	M5 depth 7	4.5	52	34.5	42	24.5	14	M8	4.5
		10								62	39.5	52	29.5			
ø25	Stroke	5	6.6	42	52	64	8	M6 Depth 12	5	55.5	37.5	45.5	27.5	17.5	M10×1.25	5
		10								65.5	42.5	55.5	32.5			

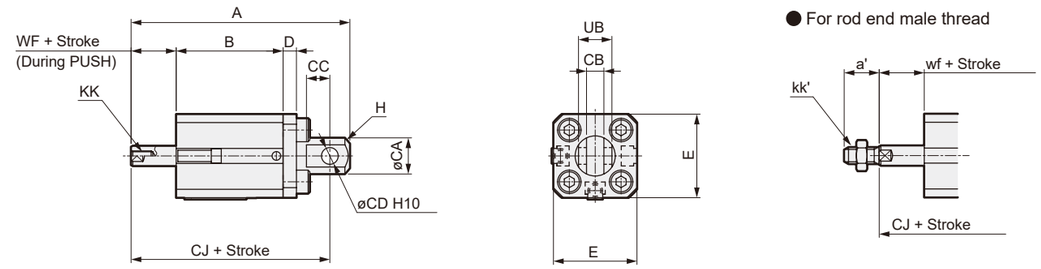
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Double Knuckle Clevis Type (CB)



Code / Bore Size (mm)			Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch CJ	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	Stroke	5	13.5	$6.5^{+0.4}_{+0.1}$	7	5	5	25	C1.5	$12^{-0.1}_{-0.4}$	M3 depth 6	3.5	54.5	44.5	10.5	M5	3.5	54.5	44.5
		10											59.5	49.5				59.5	49.5
ø16	Stroke	5	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	55.5	45.5	12	M6	3.5	55.5	45.5
		10											60.5	50.5				60.5	50.5
ø20	Stroke	5	24	$8^{+0.4}_{+0.1}$	12	10	8	36	C4	$19^{-0.1}_{-0.4}$	M5 depth 7	4.5	67	57	14	M8	4.5	67	57
		10											72	62				72	62
ø25	Stroke	5	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	74.5	64.5	17.5	M10×1.25	5	74.5	64.5
		10											79.5	69.5				79.5	69.5

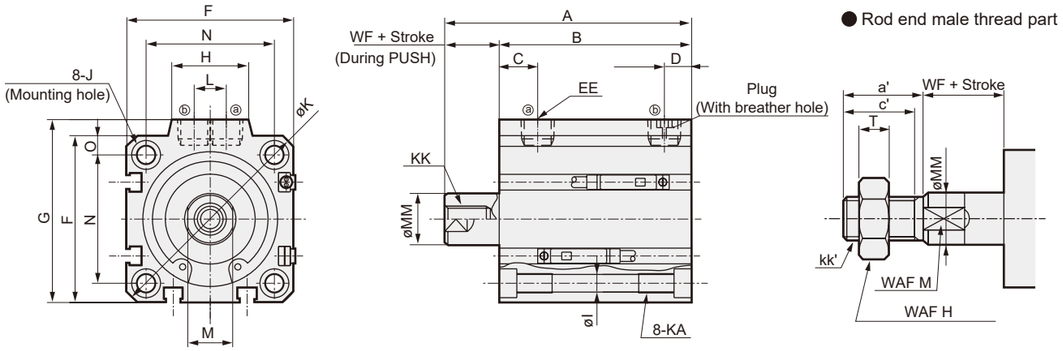
● Double clevis type (compact type) (CB2)



Code / Bore Size (mm)			Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch CJ	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	Stroke	5	12	$5^{+0.4}_{+0.1}$	7	5	4	25	C1.5	$10^{-0.1}_{-0.3}$	M3 depth 6	3.5	54.5	44.5	10.5	M5	3.5	54.5	44.5
		10											59.5	49.5				59.5	49.5
ø16	Stroke	5	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	55.5	45.5	12	M6	3.5	55.5	45.5
		10											60.5	50.5				60.5	50.5
ø20	Stroke	5	20	$8^{+0.4}_{+0.1}$	12	8	5	36	C4	$16^{-0.1}_{-0.3}$	M5 depth 7	4.5	62	52	14	M8	4.5	62	52
		10											67	57				67	57
ø25	Stroke	5	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	67.5	57.5	17.5	M10×1.25	5	67.5	57.5
		10											72.5	62.5				72.5	62.5

Outline dimension drawing (bore size: ø32 to ø50)

● SSD-Y (L)-32 to 50



Code / Bore Size (mm)			Dimension with switch A	Dimension with switch B	Dimension without switch A	Dimension without switch B	C	D	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	Stroke	5	50	38	40	28	8	8	Rc 1/8	45	49.5	24	5.5	9 Counterbore Depth 5.5	60	M6 Depth 11	M8 Depth 13	10	14	16	34	4.5	7
		10	60	43	50	33																	
ø40	Stroke	10	66.5	49.5	56.5	39.5	12	8.5	Rc 1/8	52	57	24	5.5	9 Counterbore Depth 5.5	69	M6 Depth 11	M8 Depth 13	10	14	16	40	5	7
		20	86.5	59.5	76.5	49.5																	
ø50	Stroke	10	68.5	50.5	58.5	40.5	10.5	10.5	Rc 1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86	M8 Depth 13	M10 Depth 15	15	17	20	50	7	8
		20	88.5	60.5	78.5	50.5																	

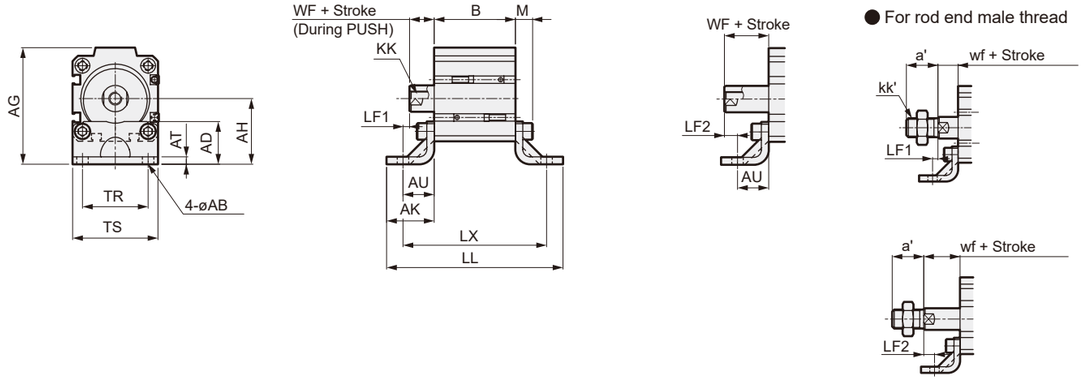
***1: For dimensions with each switch, refer to P. 674 to 681.**
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5

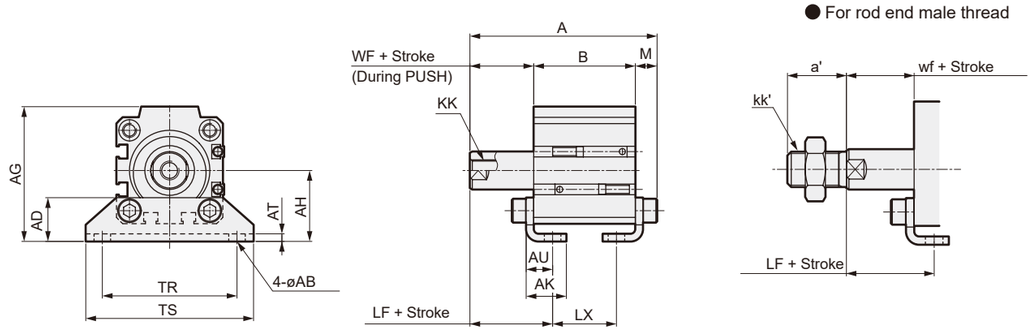
Outline dimension drawing (bore size: ø32 to ø50)

● Axial Foot Type (LB)



Code / Bore Size (mm)			AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF1	LF2	For female thread With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF1	LF2
ø32	Stroke	5	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	4	-	38	86	70	28	76	60	23.5	M14×1.5	5	6	-
		10													-	1	43	91	75	33	81	65				1	-
ø40	Stroke	10	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	2	-	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	5	4	-
		20													-	8	59.5	117.5	97.5	49.5	107.5	87.5				-	6
ø50	Stroke	10	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	4	-	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	5	7	-
		20													-	6	60.5	128.5	104.5	50.5	118.5	94.5				-	3

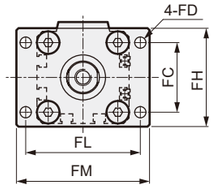
● Axial Foot Type (Compact Type) (LB2)

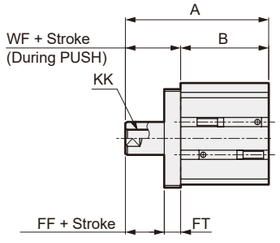


Code / Bore Size (mm)			AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	For female thread With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	Stroke	5	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	69.2	38	22	59.2	28	12	23.5	M14×1.5	15	23
		10														74.2	43	27	69.2	33	17				
ø40	Stroke	10	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	85.7	49.5	33.5	75.7	39.5	23.5	23.5	M14×1.5	15	23
		20														95.7	59.5	43.5	95.7	49.5	33.5				
ø50	Stroke	10	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	89.7	50.5	27.5	79.7	40.5	17.5	28.5	M18×1.5	15	26.5
		20														99.7	60.5	37.5	99.7	50.5	27.5				

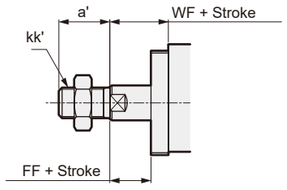
Outline dimension drawing (bore size: ø32 to ø50)

● Rod Side Flange Type (FA)



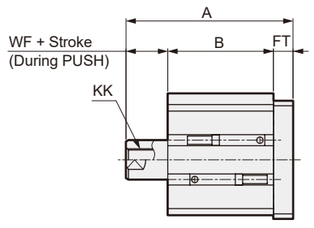


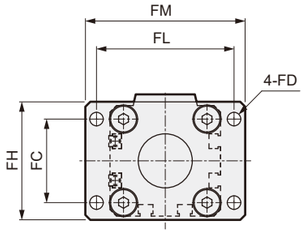
● For rod end male thread



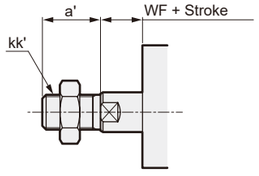
Code / Bore Size (mm)			Common dimension FC	FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø32	Stroke	5	34	5.5	48	56	65	8	9	M8 depth 13	17	60	38	50	28	7	23.5	M14×1.5	15
		10										70	43	60	33				
ø40	Stroke	10	40	5.5	54	62	72	8	9	M8 depth 13	17	76.5	49.5	66.5	39.5	7	23.5	M14×1.5	15
		20										96.5	59.5	86.5	49.5				
ø50	Stroke	10	50	6.6	67	76	89	9	9	M10 depth 15	18	78.5	50.5	68.5	40.5	6	28.5	M18×1.5	15
		20										98.5	60.5	88.5	50.5				

● Head Side Flange Type (FB)





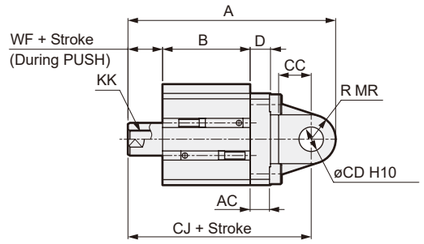
● For rod end male thread

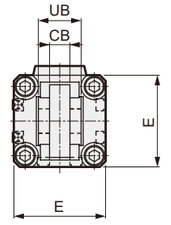


Code / Bore Size (mm)			Common dimension FC	FD	FH	FL	FM	FT	For female thread KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø32	Stroke	5	34	5.5	48	56	65	8	M8 depth 13	7	58	38	48	28	23.5	M14×1.5	5
		10									68	43	58	33			
ø40	Stroke	10	40	5.5	54	62	72	8	M8 depth 13	7	74.5	49.5	64.5	39.5	23.5	M14×1.5	5
		20									94.5	59.5	84.5	49.5			
ø50	Stroke	10	50	6.6	67	76	89	9	M10 depth 15	8	77.5	50.5	67.5	40.5	28.5	M18×1.5	5
		20									97.5	60.5	87.5	50.5			

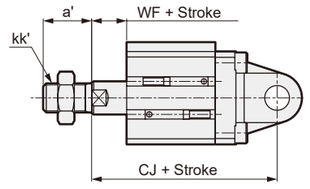
Outline dimension drawing (bore size: ø32 to ø50)

● Double Knuckle Clevis Type (CB)



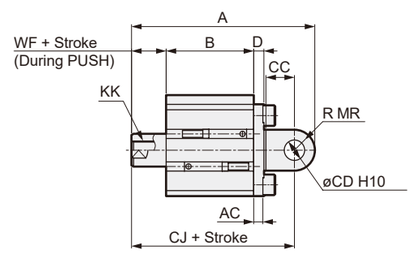


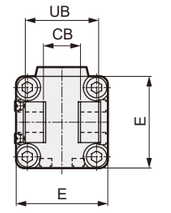
● For rod end male thread



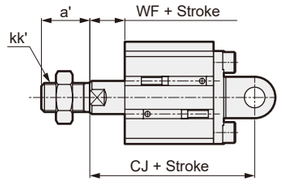
Code / Bore Size (mm)			Common dimension AC	CB	CC	CD	D	E	MR	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	Stroke	5	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	92	38	80	82	28	70	23.5	M14×1.5	5	78	68
		10											102	43	85	92	33	75				83	73
ø40	Stroke	10	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	110.5	49.5	98.5	100.5	39.5	88.5	23.5	M14×1.5	5	96.5	86.5
		20											130.5	59.5	108.5	120.5	49.5	98.5				106.5	96.5
ø50	Stroke	10	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	112.5	50.5	100.5	102.5	40.5	90.5	28.5	M18×1.5	5	97.5	87.5
		20											132.5	60.5	110.5	122.5	50.5	100.5				107.5	97.5

● Double clevis type (compact type) (CB2)





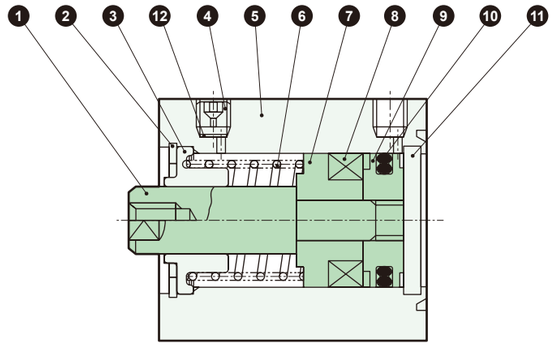
● For rod end male thread



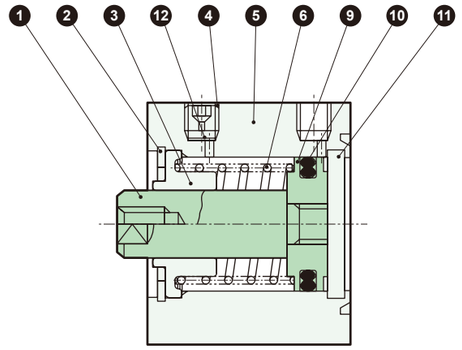
Code / Bore Size (mm)			Common dimension AC	CB	CC	CD	D	E	MR	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	Stroke	5	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	80	38	70	70	28	60	23.5	M14×1.5	5	68	58
		10											90	43	75	80	33	65				73	63
ø40	Stroke	10	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	98.5	49.5	88.5	88.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
		20											118.5	59.5	98.5	108.5	49.5	88.5				96.5	86.5
ø50	Stroke	10	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	110.5	50.5	96.5	100.5	40.5	86.5	28.5	M18×1.5	5	93.5	83.5
		20											130.5	60.5	106.5	120.5	50.5	96.5				103.5	93.5

Internal Structure Diagram/Material

● SSD-XL (Single acting / Push type, with switch)



● SSD-X (Single acting / Push type)

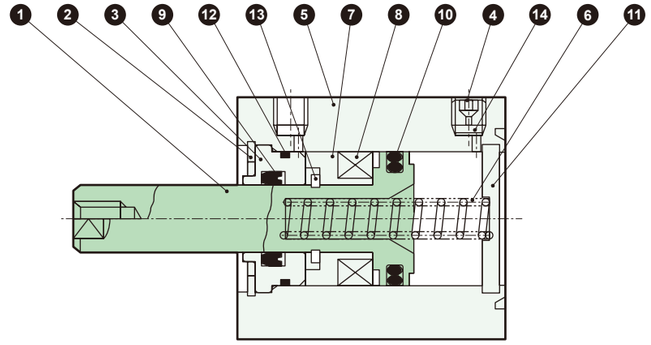


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	7	Spacer	Aluminum Alloy	Chromate
				8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Alumite	10	Piston Packing	Nitrile Rubber	
4	Plug	Stainless Steel		11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized				
6	Spring	Piano Wire	Electrodeposition Coating	12	Stainless Steel Wire Mesh	Stainless Steel	

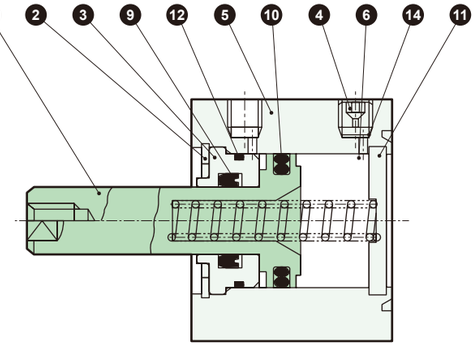
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

● SSD-YL (Single acting / Retracting type, with switch)

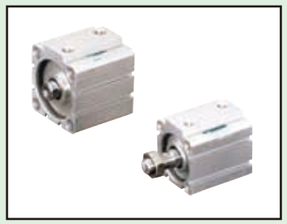


● SSD-Y (Single acting / Retracting type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		8	Magnet	Plastic	
				9	Rod Packing	Nitrile Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Special aluminum alloy	Alumite	11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
4	Plug	Stainless Steel					
5	Cylinder Body	Aluminum Alloy	Hard Anodized	12	Metal gasket	Nitrile Rubber	
6	Spring	Piano Wire	Electrodeposition Coating	13	Round S-type retaining ring	Steel	Zinc phosphate
7	Spacer	Aluminum Alloy	Chromate	14	Stainless Steel Wire Mesh	Stainless Steel	

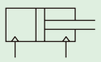
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Heat Resistant Type

SSD-T Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø83, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

SSD-T - 12 - [ ] - 5 - N - LB - I

Model No.	❶ Bore Size	❷ Piping thread type	❸ Stroke	❹ Option	❺ Mounting bracket	❻ Accessories
SSD-T	12	[ ]	5	N	LB	I

❶Bore Size (mm)

Code	Contents
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Port Thread Type

Code	Contents
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø12, ø16, ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 428.

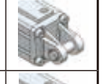
❹Option

	Code	Contents	
	Blank	Rod end female thread	
	N	Rod end male thread	
*1	M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❺Mounting type

Mounting brackets are shipped included to the product.

	Code	Contents	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 369, 370, 373, 374. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❻Accessories

Code	Contents	
I	Single Knuckle	
I2	Rod eye (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1,R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-T-..... -XP5

Specifications

Item	SSD-T									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	5 to 120									
Port Size	M5				Rc 1/8		Rc 1/4		Rc 3/8	
Stroke tolerance mm	+1.0 0									
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication *1	Not Available									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: Grease up regularly with heat-resistant grease.

Stroke

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●
Min. Stroke (mm)		1									
Max. Stroke (mm)		30			50						
Intermediate Stroke *1		Every 1 mm									

*1: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***2: For the minimum stroke when using mounting brackets LB and LB2, see P. 369 and 373.**

Cylinder Weight Table

(Unit: g)

Stroke (mm) / Bore Size (mm)	5	10	15	20	25	30	40	50
ø12	36	44	53	61	70	72	-	-
ø16	48	59	69	80	91	102	-	-
ø20	63	75	88	101	113	126	-	-
ø25	87	102	118	134	150	165	197	228
ø32	122	144	166	188	209	231	275	318
ø40	183	210	236	263	290	316	369	422
ø50	299	341	383	425	467	510	594	678
ø63	452	507	-	617	-	727	838	948
ø80	841	928	-	1101	-	1274	1448	1621
ø100	1319	1433	-	1660	-	1888	2115	2343

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10²	1.13×10²
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10²	1.21×10²	1.41×10²	1.61×10²	1.81×10²	2.01×10²
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10²	1.21×10²	1.36×10²	1.51×10²
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10²	1.57×10²	1.88×10²	2.20×10²	2.51×10²	2.83×10²	3.14×10²
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10²	1.41×10²	1.65×10²	1.88×10²	2.12×10²	2.36×10²
ø25	Push	-	49.1k	73.6	98.2	1.47×10²	1.96×10²	2.45×10²	2.95×10²	3.44×10²	3.93×10²	4.42×10²	4.91×10²
	Pull	-	37.8	56.7	75.6	1.13×10²	1.51×10²	1.89×10²	2.27×10²	2.64×10²	3.02×10²	3.40×10²	3.78×10²
ø32	Push	-	80.4	1.21×10²	1.61×10²	2.41×10²	3.22×10²	4.02×10²	4.83×10²	5.63×10²	6.43×10²	7.24×10²	8.04×10²
	Pull	-	60.3	90.5	1.21×10²	1.81×10²	2.41×10²	3.02×10²	3.62×10²	4.22×10²	4.83×10²	5.43×10²	6.03×10²
ø40	Push	-	1.26×10²	1.88×10²	2.51×10²	3.77×10²	5.03×10²	6.28×10²	7.54×10²	8.80×10²	1.01×10³	1.13×10³	1.26×10³
	Pull	-	1.06×10²	1.58×10²	2.11×10²	3.17×10²	4.22×10²	5.28×10²	6.33×10²	7.39×10²	8.44×10²	9.50×10²	1.06×10³
ø50	Push	-	1.96×10²	2.95×10²	3.93×10²	5.89×10²	7.85×10²	9.82×10²	1.18×10³	1.37×10³	1.57×10³	1.77×10³	1.96×10³
	Pull	-	1.65×10²	2.47×10²	3.30×10²	4.95×10²	6.60×10²	8.25×10²	9.90×10²	1.15×10³	1.32×10³	1.48×10³	1.65×10³
ø63	Push	1.56×10²	3.12×10²	4.68×10²	6.23×10²	9.35×10²	1.25×10³	1.56×10³	1.87×10³	2.18×10³	2.49×10³	2.81×10³	3.12×10³
	Pull	1.40×10²	2.80×10²	4.20×10²	5.61×10²	8.41×10²	1.12×10³	1.40×10³	1.68×10³	1.96×10³	2.24×10³	2.52×10³	2.80×10³
ø80	Push	2.51×10²	5.03×10²	7.54×10²	1.01×10³	1.51×10³	2.01×10³	2.51×10³	3.02×10³	3.52×10³	4.02×10³	4.52×10³	5.03×10³
	Pull	2.27×10²	4.54×10²	6.80×10²	9.07×10²	1.36×10³	1.81×10³	2.27×10³	2.72×10³	3.17×10³	3.63×10³	4.08×10³	4.54×10³
ø100	Push	3.93×10²	7.85×10²	1.18×10³	1.57×10³	2.36×10³	3.14×10³	3.93×10³	4.71×10³	5.50×10³	6.28×10³	7.07×10³	7.85×10³
	Pull	3.57×10²	7.15×10²	1.07×10³	1.43×10³	2.14×10³	2.86×10³	3.57×10³	4.29×10³	5.00×10³	5.72×10³	6.43×10³	7.15×10³

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

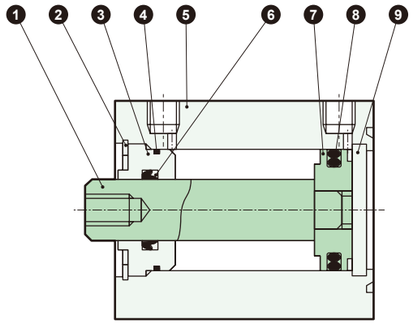
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

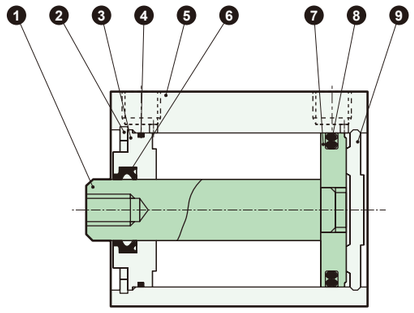
Same as double acting/single rod type. See P. 368 to 375.
However, it does not come with a switch.

Internal Structure Diagram/Material

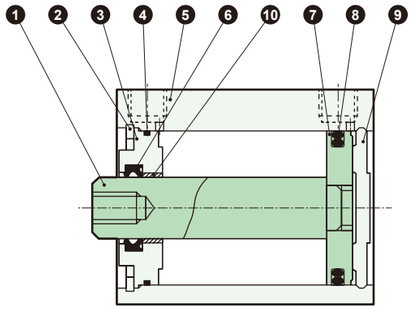
● SSD-T-12 to 25



● SSD-T-32 to 50



● SSD-T-63 to 100



Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø100: Steel	ø16 to ø100: Industrial hard chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Fluoro Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Fluoro Rubber	

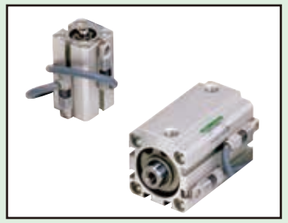
Part No.	Part Name	Material	Remarks
7	Piston	ø12 to ø25: Aluminum alloy ø32 to ø100: Stainless steel	ø12 to ø25: Chromate
8	Piston Packing	Fluoro Rubber	
9	Cover	ø12 to ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Alumite
10	Bushing	Bearing Alloy	ø63 to ø100

Fluorine-based grease is used.

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

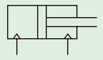
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder
Double Acting with Heat Resistant Cylinder Switch

SSD-T1L Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

SSD-T1L - 16 - [ ] - 10 - ET0H - D - N - LB - I

SSD-T1L	16	[ ]	10	ET0H	D	N	LB	I
Double acting/ Heat resistant type with compact heat resistant switch	❶ Bore size	❷ Piping thread type	❸ Stroke	❹ Switch Model No.	❺ Number of Switches	❻ Option	❼ Mounting bracket	❽ Accessories

❶Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❷Piping thread type

Code	Content
Blank	M5 thread (ø16 to ø25)
	Rc thread (ø32 to ø63)
NN	NPT thread (custom order) (ø32 to ø63)
GN	G thread (custom order) (ø32 to ø63)

❸Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø16	10 to 30	Every 1 mm
ø20	15 to 30	
ø25	15 to 50	
ø32 to ø63	10 to 50	

Note: For details on stroke, please refer to P. 434.

❹Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	LED Indicator Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire		
			AC	DC	AC	DC	Straight	L-shape	
Contact / Reed	1-Color Heat Resistant	2-wire	110	12/24	7 to 20	5 to 50	ET0H	ET0V	

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❼Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Double Clevis Type (Compact type) (Pins and retaining rings included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 437, 438, 441, and 442 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❽Accessories

Code	Content	
I	Single Knuckle	
I2	Rod eye (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1,R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-T1L - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - ET0H

❹ Switch Model No.

Specifications

Item	SSD-T1L						
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.1						0.05
Proof pressure MPa	1.6						
Ambient Temperature °C	5 to 150 *1						
Port Size	M5			Rc1/8		Rc1/4	
Stroke tolerance mm	+1.0 0						
Operating Piston Speed mm/s	50 to 500						50 to 300
Cushion	None						
Lubrication *2	—						

*1: In an environment with an ambient temperature of 150°C, external leakage will gradually occur after about 500,000 cycles. Please be careful.
*2: Periodically apply heat-resistant grease.

Stroke

Stroke (mm)		Applicable Bore						
		ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	10	●			●	●	●	●
	15	●	●	●	●	●	●	
	20	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	
	30	●	●	●	●	●	●	●
	40			●	●	●	●	●
	50			●	●	●	●	●
Minimum Stroke (mm) *1		10	15	15	10			
Maximum Stroke (mm)		30		50				
Intermediate stroke (mm) *2		Every 1 mm						

***1: For the number of switches attachable and minimum stroke, refer to the table below.**
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	ET0□	
Number of Switches / Bore Size (mm)	1	2
ø16	10	20
ø20	15	25
ø25		20
ø32	10	
ø40		
ø50		
ø63		

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	10	15	20	25	30	40	50
ø16	124	134	145	156	167	-	-
ø20	170	183	196	208	221	-	-
ø25	213	229	245	261	276	308	339
ø32	278	300	322	343	365	409	452
ø40	373	399	426	453	479	532	585
ø50	555	597	639	681	724	808	892
ø63	806	-	916	-	1026	1137	1247

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	-	49.1	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	37.8	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	80.4	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	60.3	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	1.56×10^{2}	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	1.40×10^{2}	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}

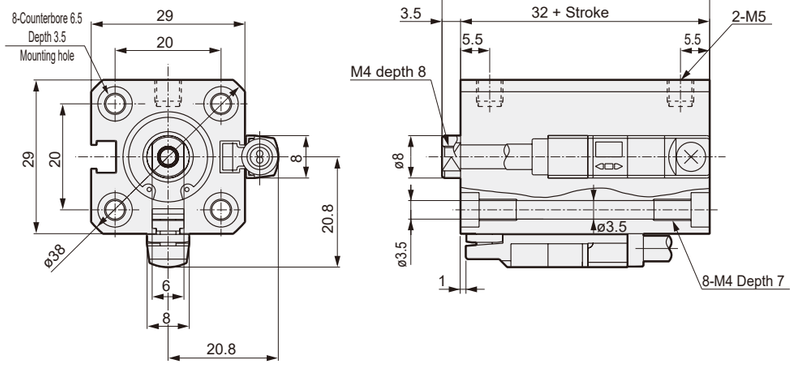
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Foot (LB)	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63
Foot (LB2)	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63
Flange (FA/FB)	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63
Double Clevis (CB)	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63
Double knuckle clevis (CB2)	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63

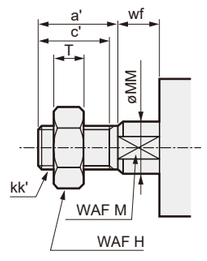
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø16 to ø25)

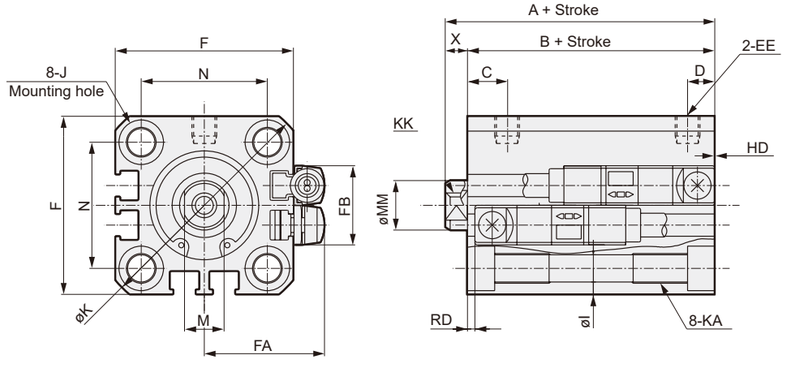
● SSD-T1L-16



● Rod end male thread part



● SSD-T1L-20/25



Code / Bore size	Basic dimensions																	Dimensions with switch, Contact type ET0H/ET0V	
	A *1	B *1	C	D	EE	F	FA	FB	I	J	K	KA	KK	M	MM	N	X	RD	HD
ø20	34	29.5	8	5.5	M5	36	24.3	16	5.5	Counterbore 9 Depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5	0	0
ø25	37.5	32.5	11	6	M5	40	26.3	17	5.5	Counterbore 9 Depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5	1.0	0.5

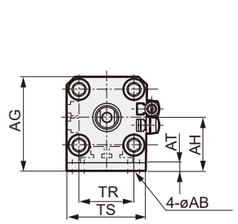
*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: Due to manufacturing constraints for heat-resistant magnets, the overall length of ø16 is longer than that of ø20. Please be careful.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**
***4: For dimensions with each switch, refer to P. 674 to 681.**

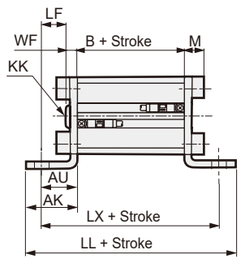
● Rod end male thread part dimension table

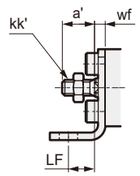
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10X1.25	10	12	6	5

Outline dimension drawing (bore size: ø16 to ø25)

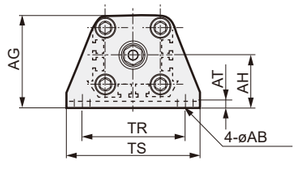
● Axial Foot Type (LB)

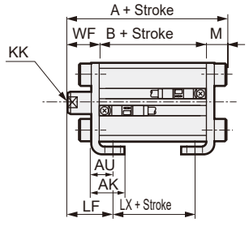




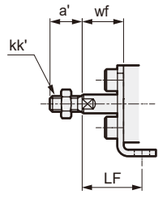


● Axial Foot Type (Compact Type) (LB2)





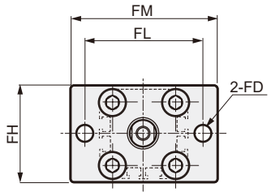
● For rod end male thread

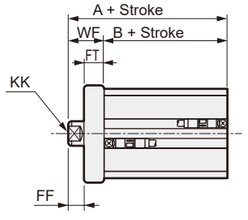


Code / Bore size (mm)	Common dimension									For female thread							For male thread			
	AB	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	A	B	LL	LX	a'	kk'	wf	LF
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	51.5	32	20		12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	53.2	29.5	17.5		14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	56.7	32.5	17.5		17.5	M10×1.25	15	22.5

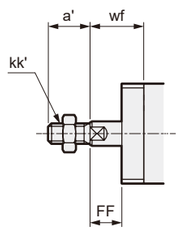
Outline dimension drawing (bore size: ø16 to ø25)

● Rod Side Flange Type (FA)



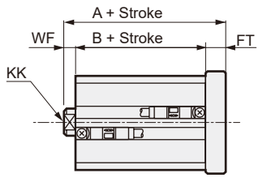


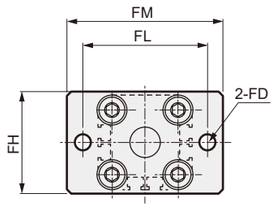
● For rod end male thread



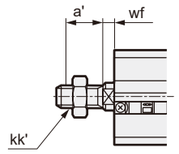
Code / Bore size (mm)	Common dimension					For female thread					For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	A	B	FF	a'	kk'	wf
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	45.5	32	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	44	29.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	47.5	32.5	7	17.5	M10×1.25	15

● Head Side Flange Type (FB)





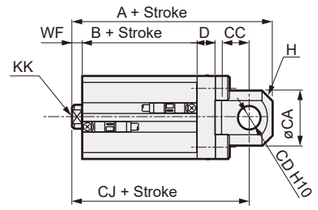
● For rod end male thread

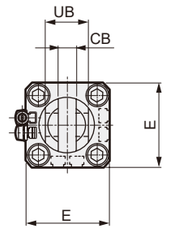


Code / Bore size (mm)	Common dimension					For female thread				For male thread		
	FD	FH	FL	FM	FT	KK	WF	A	B	a'	kk'	wf
ø16	4.5	30	45	55	5.5	M4 depth 8	3.5	41	32	12	M6	3.5
ø20	6.6	39	48	60	8	M5 depth 7	4.5	42	29.5	14	M8	4.5
ø25	6.6	42	52	64	8	M6 Depth 12	5	45.5	32.5	17.5	M10×1.25	5

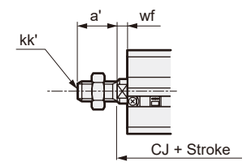
Outline dimension drawing (bore size: ø16 to ø25)

● Double Knuckle Clevis Type (CB)



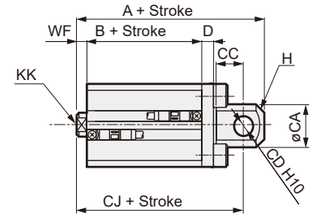


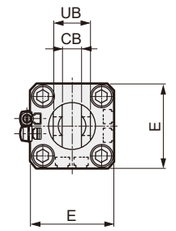
● For rod end male thread



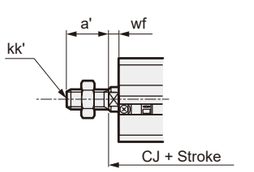
Code / Bore size (mm)	Common dimension								For female thread					For male thread			
	CA	CB	CC	CD	D	E	H	UB	KK	WF	A	B	CJ	a'	kk'	wf	CJ
ø16	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	56.5	32	50.5	12	M6	3.5	50.5
ø20	24	$8^{+0.4}_{+0.1}$	12	10	8	36	C4	$19^{-0.1}_{-0.4}$	M5 depth 7	4.5	67	29.5	57	14	M8	4.5	57
ø25	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	76.5	32.5	64.5	17.5	M10×1.25	5	64.5

● Double clevis type (Compact type) (CB2)





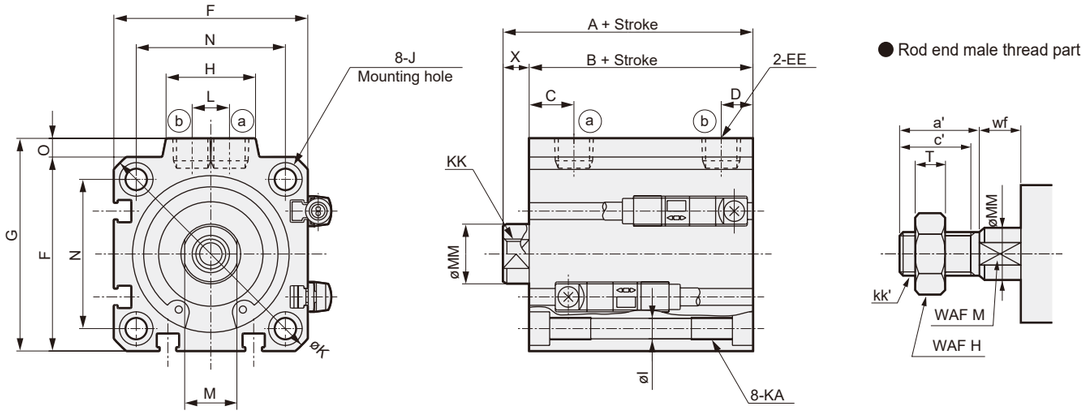
● For rod end male thread



Code / Bore size (mm)	Common dimension								For female thread					For male thread			
	CA	CB	CC	CD	D	E	H	UB	KK	WF	A	B	CJ	a'	kk'	wf	CJ
ø16	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	56.5	32	50.5	12	M6	3.5	50.5
ø20	20	$8^{+0.4}_{+0.1}$	12	8	5	36	C4	$16^{-0.1}_{-0.3}$	M5 depth 7	4.5	61	29.5	52	14	M8	4.5	52
ø25	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	67.5	32.5	57.5	17.5	M10×1.25	5	57.5

Outline Dimension Drawing (Bore size: ø32 to ø63)

● SSD-T1L-32 to 63



● Rod end male thread part

Code / Bore size	Basic dimensions A *1	B *1	C	D	EE	F	G	H	I	J	K	KA	KK	L	M
ø32	40	33	8	8	Rc1/8	45	49.5	24	5.5	Counterbore 9 Depth 5.5	60	M6 depth 11	M8 depth 13	10	14
ø40	46.5	39.5	12	8.5	Rc1/8	52	57	24	5.5	Counterbore 9 Depth 5.5	69	M6 depth 11	M8 depth 13	10	14
ø50	48.5	40.5	10.5	10.5	Rc1/4	64	71	33	6.9	Counterbore 11 Depth 6.5	86	M8 depth 13	M10 depth 15	15	17
ø63	54	46	13	11	Rc1/4	77	84	33	8.7	Counterbore 14 Depth 9	103	M10 depth 25	M10 depth 15	15	17

Code / Bore size	Basic dimensions MM	N	O	X
ø32	16	34	4.5	7
ø40	16	40	5	7
ø50	20	50	7	8
ø63	20	60	7	8

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

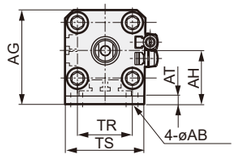
● Rod end male thread part dimension table

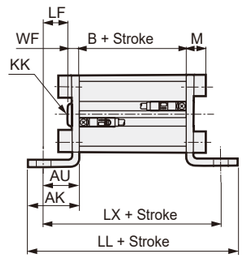
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 X 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 X 1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5

Outline Dimension Drawing (Bore size: ø32 to ø63)

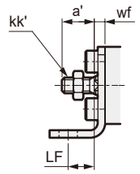
● Axial Foot Type (LB)

· ø32

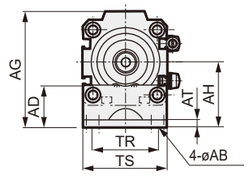


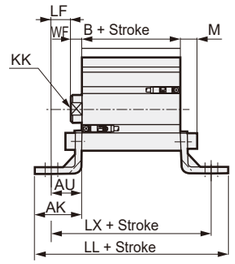


● For rod end male thread

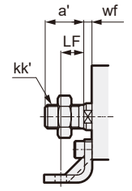


· ø40 to ø63



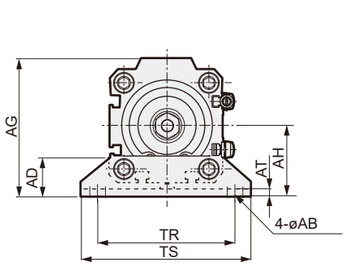


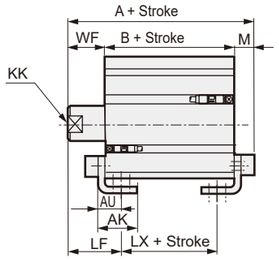
● For rod end male thread



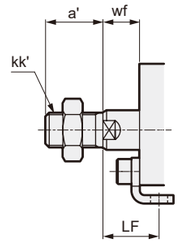
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	B	LL	LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	33	81	65	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	39.5	97.5	77.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	40.5	108.5	84.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	46	126	96	28.5	M18×1.5	5	20

● Axial Foot Type (Compact Type) (LB2)





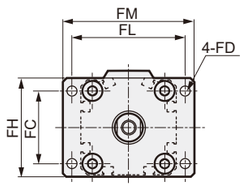
● For rod end male thread

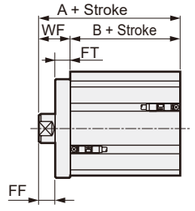


Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	A	B	LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	59.2	33	17	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	65.7	39.5	23.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	69.7	40.5	17.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	77.2	46	20	28.5	M18×1.5	15	28

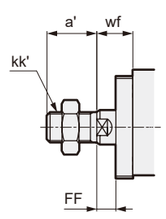
Outline dimension drawing (bore size: ø32 to ø63)

● Rod Side Flange Type (FA)



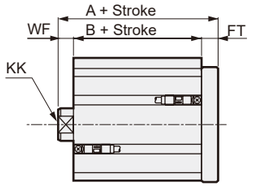


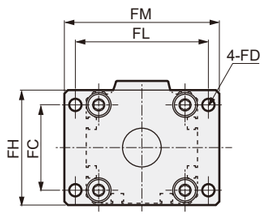
● For rod end male thread



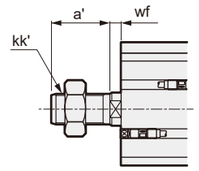
Code	Common dimension						For female thread					For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	FF	KK	WF	A	B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	50	33	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	56.5	39.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	58.5	40.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	64	46	6	28.5	M18×1.5	15

● Head Side Flange Type (FB)





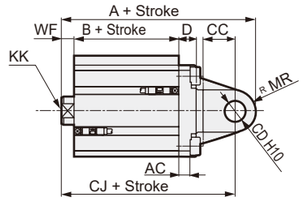
● For rod end male thread

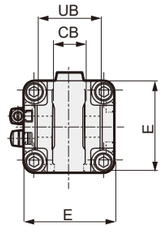


Code	Common dimension						For female thread				For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	KK	WF	A	B	a'	kk'	wf	
ø32	34	5.5	48	56	65	8	M8 depth 13	7	48	33	23.5	M14×1.5	5	
ø40	40	5.5	54	62	72	8	M8 depth 13	7	54.5	39.5	23.5	M14×1.5	5	
ø50	50	6.6	67	76	89	9	M10 depth 15	8	57.5	40.5	28.5	M18×1.5	5	
ø63	60	9	80	92	108	9	M10 depth 15	8	63	46	28.5	M18×1.5	5	

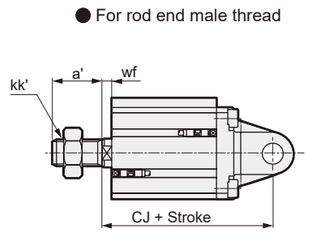
Outline dimension drawing (bore size: ø32 to ø63)

● Double Knuckle Clevis Type (CB)



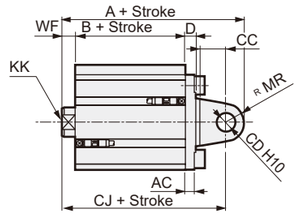


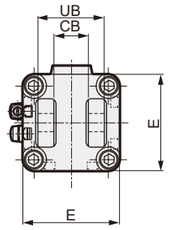
● For rod end male thread



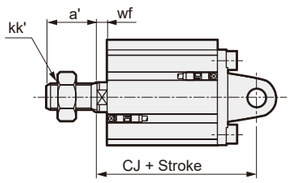
Code	Common dimension								For female thread					For male thread			
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	CJ
ø32	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	82	33	70	23.5	M14×1.5	5	68
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	90.5	39.5	78.5	23.5	M14×1.5	5	76.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	92.5	40.5	80.5	28.5	M18×1.5	5	77.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	107	46	91	28.5	M18×1.5	5	88

● Double clevis type (Compact type)(CB2)





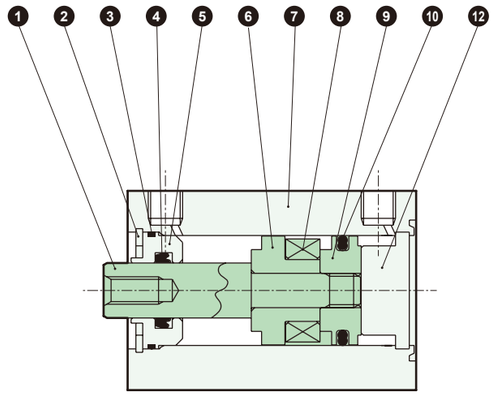
● For rod end male thread



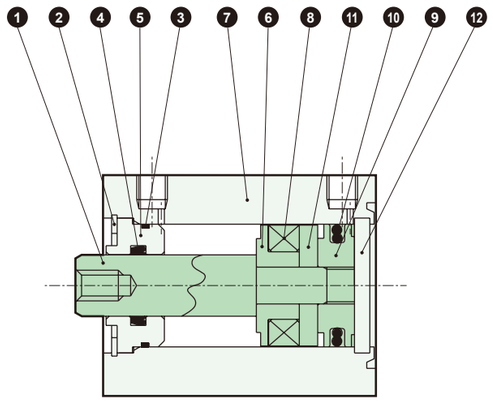
Code	Common dimension								For female thread					For male thread			
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	CJ
ø32	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	70	33	60	23.5	M14×1.5	5	58
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	78.5	39.5	68.5	23.5	M14×1.5	5	66.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	90.5	40.5	76.5	28.5	M18×1.5	5	73.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	98	46	84	28.5	M18×1.5	5	81

Internal structure diagram/materials (bore size: ø16 to ø32)

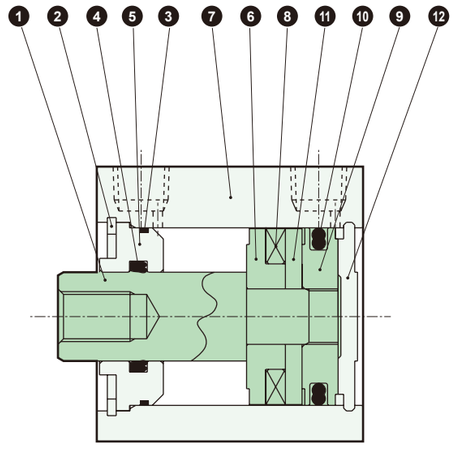
● SSD-T1L-16



● SSD-T1L-20/25



● SSD-T1L-32



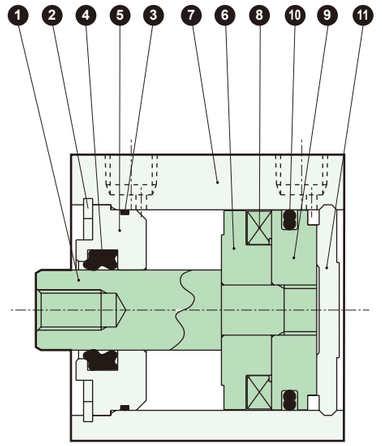
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø16 to ø25: Stainless steel ø32: Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Fluoro Rubber	
4	Rod Packing	Fluoro Rubber	
5	Rod Metal	Aluminum Alloy	Alumite
6	Spacer (for magnet)	Aluminum alloy	Chromate
7	Cylinder Body	Aluminum alloy	Hard Anodized
8	Magnet	Special alloy	
9	Piston	ø16 to ø25: Aluminum alloy ø32: Stainless steel	ø16 to ø25: Chromate
10	Piston Packing	Fluoro Rubber	
11	Spacer	Aluminum alloy	Chromate
12	Cover	ø16 to ø25: Stainless steel ø32: Aluminum alloy	ø32: Alumite

Fluorine-based grease is used.

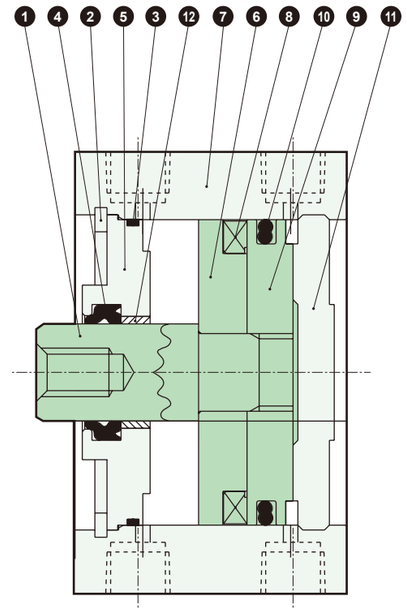
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal structure diagram/materials (bore size: ø40 to ø63)

● SSD-T1L-40/50



● SSD-T1L-63



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod metal gasket	Fluoro Rubber	
4	Rod Packing	Fluoro Rubber	
5	Rod Metal	Aluminum alloy	Chromate
6	Spacer (for magnet)	Aluminum alloy	Chromate
7	Cylinder Body	Aluminum alloy	Hard Anodized
8	Magnet	Plastic	
9	Piston	Stainless Steel	
10	Piston Packing	Fluoro Rubber	
11	Cover	Aluminum alloy	Alumite
12	Bushing	Bearing Alloy	

Fluorine-based grease is used.

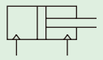
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder High Load Type with Rubber Air Cushion

SSD-K-□C Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-K – 40 ❶ ❷ C ❸ – 10 ——— N ❻ – LB ❼ – I ❽

Model No. | With Rubber Air Cushion

With Switch
(Built-in magnet for switch)

SSD-KL – 40 ❶ ❷ C ❸ – 10 ❹ – T0H ❺ – R ❻ – N ❼ – LB ❽ – I

Model No. | ❶ Bore size | ❷ Piping thread type | With Rubber Air Cushion | ❸ Stroke | ❹ Switch Model No. | ❺ Number of Switches | ❻ Option | ❼ Mounting bracket | ❽ Accessories

❶ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Piping thread type

Code	Content
Blank	M5 thread (ø20 to ø25)
	Rc thread (ø32 to ø100)
N	NPT thread (Custom product) (ø32 to ø100)
G	G thread (Custom product) (ø32 to ø100)

❸ Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20	5 to 200	Every 1 mm
ø25	10 to 300	
ø32 to ø50	10 to 300	
ø63 to ø100	10 to 300	

*1: For details regarding stroke, see P. 448.

❹ Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	 *3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No LED Indicator		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*5

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø20 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❼ Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (pin and retaining ring included)	
CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 393, 394, 398, 399. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❽ Accessories

Code	Content	
I	Single Knuckle	
I2	Rod eye (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Rod clevis (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-K-□C –..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
❹
Switch Model No.

Specifications

Item	SSD-K-□C, SSD-KL-□C (with switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	1.0							
Min. Operating Pressure MPa	0.25		0.2					
Proof pressure MPa	1.6							
Ambient Temperature °C	-10 to 60 (No freezing)							
Port Size	Rc 1/8				Rc 1/4		Rc 3/8	
Stroke tolerance mm	+2.0 0							
Operating Piston Speed mm/s	50 to 500					50 to 300		
Cushion	Rubber Air Cushion							
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●							
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	60			●	●	●	●	●	●
	70			●	●	●	●	●	●
	80			●	●	●	●	●	●
	90			●	●	●	●	●	●
	100			●	●	●	●	●	●
Minimum Stroke (mm) *1		5					10		
Maximum Stroke (mm)		200	300						
Intermediate Stroke *2		Every 1 mm							

***1: Cannot be manufactured for less than 10 mm with 2-color indicator type, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches attachable and minimum stroke, refer to the table on the right.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 393, 397, 398.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T*		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø20	5	5	15	15
ø25	5	5	15	15
ø32	5	5	15	15
ø40	5	5	10	15
ø50	5	5	10	15
ø63	10	10	10	15
ø80	10	10	10	15
ø100	10	10	10	15

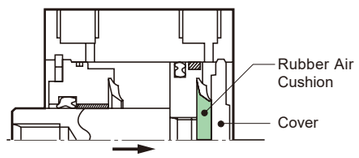
Note: Less than 10 mm is not available for 2-color LED, off-delay, strong magnetic field proof, or with T1□ or T8□ switch.

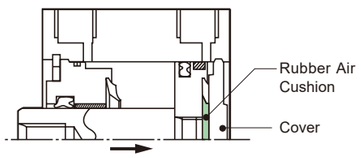
Rubber Air Cushion Mechanism

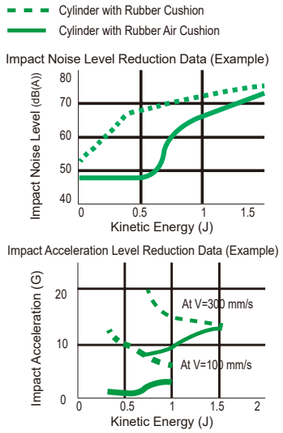
●Explanation during PULL

When the piston operates and the rubber air cushion comes into contact with the cover, a sealed air space is formed in the ■ part. The air in this sealed space is compressed as the piston operates and absorbs energy.

At the stroke end, energy absorption due to compressive strain of the rubber cushion is also added.







Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50		60		70		80		90		100	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	75	150	88	163	101	176	113	188	126	201	138	213	163	238	188	263	213	288	238	313	263	338	288	363	313	388
ø25	-	-	118	209	134	225	150	241	165	256	182	273	214	305	246	337	278	369	310	401	342	433	374	465	406	497
ø32	-	-	188	302	209	323	231	345	253	367	275	389	318	432	361	475	404	518	447	561	490	604	533	647	576	690
ø40	-	-	263	406	290	433	316	459	342	485	369	512	422	565	475	618	528	671	581	724	634	777	687	830	740	883
ø50	-	-	425	619	467	661	510	704	553	747	594	788	678	872	762	956	846	1040	930	1124	1014	1208	1098	1292	1182	1376
ø63	-	-	617	896	-	-	727	1006	-	-	838	1117	948	1227	1058	1337	1168	1447	1278	1557	1388	1667	1498	1777	1608	1887
ø80	-	-	1101	1514	-	-	1274	1687	-	-	1448	1861	1621	2034	1794	2207	1967	2380	2140	2553	2313	2726	2486	2899	2659	3072
ø100	-	-	1660	2227	-	-	1888	2455	-	-	2115	2682	2343	2910	2571	3138	2799	3366	3027	3594	3255	3822	3483	4050	3711	4278

Stroke (mm)	110		120		130		140		150		160		170		180		190		200	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	338	413	363	438	388	463	413	488	438	513	463	538	488	563	513	588	538	613	563	638
ø25	438	529	470	561	502	593	534	625	566	657	598	689	630	721	662	753	694	785	726	817
ø32	619	733	662	776	705	819	748	862	791	905	833	947	876	990	919	1033	962	1076	1005	1119
ø40	793	936	846	989	899	1042	952	1095	1005	1148	1058	1201	1111	1254	1164	1307	1217	1360	1270	1413
ø50	1266	1460	1350	1544	1434	1628	1518	1712	1602	1796	1700	1894	1785	1979	1870	2064	1955	2149	2040	2234
ø63	1718	1997	1828	2107	1938	2217	2048	2327	2158	2437	2268	2547	2378	2657	2488	2767	2598	2877	2708	2987
ø80	2832	3245	3005	3418	3178	3591	3351	3764	3524	3937	3697	4110	3870	4283	4043	4456	4216	4629	4389	4802
ø100	3939	4506	4167	4734	4395	4962	4623	5190	4851	5418	5079	5646	5307	5874	5535	6102	5763	6830	5991	6558

Stroke (mm)	210		220		230		240		250		260		270		280		290		300	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø25	769	849	801	881	833	913	865	945	897	977	929	1009	961	1041	993	1073	1025	1105	1057	1137
ø32	1048	1162	1091	1205	1134	1248	1177	1291	1220	1334	1263	1377	1306	1420	1349	1463	1392	1506	1435	1549
ø40	1323	1466	1376	1519	1429	1572	1482	1625	1535	1678	1588	1731	1641	1784	1694	1837	1747	1890	1800	1943
ø50	2125	2319	2210	2404	2295	2489	2380	2574	2465	2659	2550	2744	2635	2829	2720	2914	2805	2999	2890	3084
ø63	2817	3096	2927	3206	3037	3316	3147	3426	3257	3536	3367	3646	3477	3756	3587	3866	3697	3976	3807	4086
ø80	4561	4974	4734	5147	4907	5320	5080	5493	5253	5666	5426	5839	5599	6012	5772	6185	5945	6358	6118	6531
ø100	6220	6787	6448	7015	6676	7243	6904	7471	7132	7699	7360	7927	7588	8155	7816	8383	8044	8611	8272	8839

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

Note: Foot type mounting brackets are 2 pcs/set.

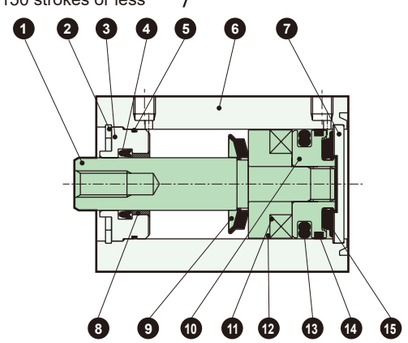
Outline Dimension Drawing

Same as double acting, high load SSD-K series. See P. 392 to 400. However, it does not come with a switch.

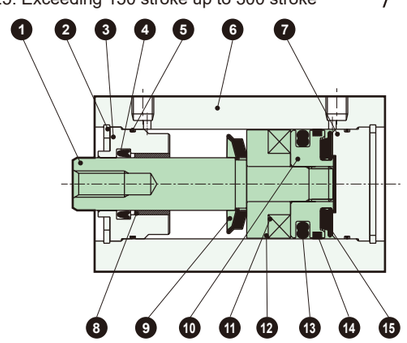
Internal Structure Diagram/Material

●SSD-KL-20C, 25C
(Double Acting, High Load Type, Rubber Air Cushion with Switch)

⟨ø20: 100 strokes or less
ø25: 150 strokes or less ⟩

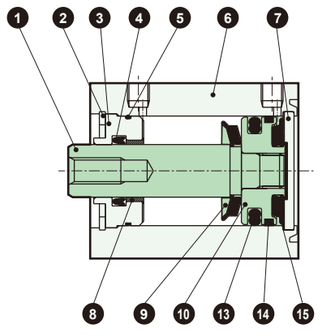


⟨ø20: Exceeding 100 stroke up to 200 stroke
ø25: Exceeding 150 stroke up to 300 stroke ⟩

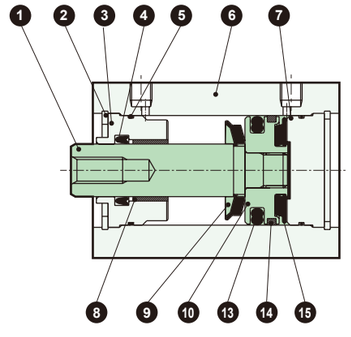


●SSD-K-20C, 25C
(Double Acting, High Load Type with Rubber Air Cushion)

⟨ø20: 100 strokes or less
ø25: 150 strokes or less ⟩



⟨ø20: Exceeding 100 stroke up to 200 stroke
ø25: Exceeding 150 stroke up to 300 stroke ⟩



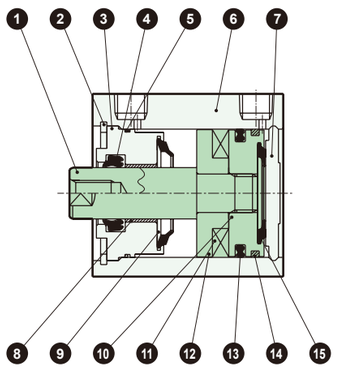
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	9	Rubber air cushion (R)	Special rubber	
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston	Aluminum Alloy	Alumite
3	Rod Metal	Aluminum Alloy	Alumite	11	Magnet	Plastic	
4	Rod Packing	Nitrile Rubber		12	Spacer	Aluminum Alloy	Alumite
5	Rod metal gasket	Nitrile Rubber		13	Piston Packing	Nitrile Rubber	
6	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Wear Ring	Polyacetal	
7	Cover	Aluminum Alloy		15	Rubber air cushion (H)	Special rubber	
8	Bushing	Bearing Alloy					

For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

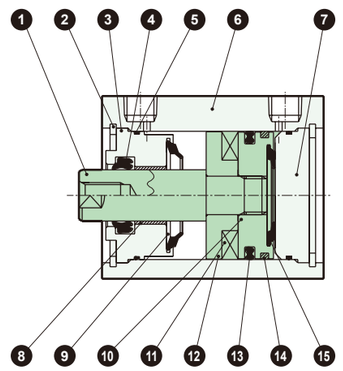
Internal Structure Diagram/Material

●SSD-KL-32C to 100C
(Double Acting, High Load Type, Rubber Air Cushion with Switch)

⟨ø32 to ø50: 150 stroke or less
ø63 to ø100: 200 stroke or less ⟩

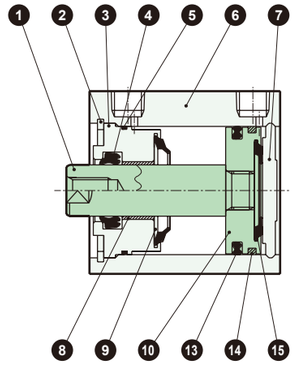


⟨ø32 to ø50: Stroke exceeding 150 and 300 or less
ø63 to ø100: Stroke exceeding 200 and 300 or less ⟩

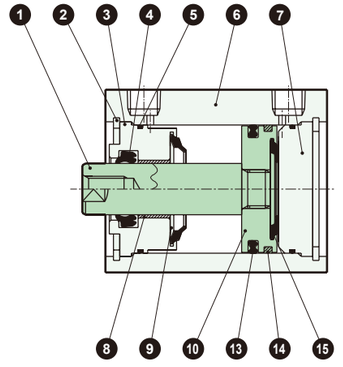


●SSD-K-32C to 100C
(Double Acting, High Load Type with Rubber Air Cushion)

⟨ø32 to ø50: 150 stroke or less
ø63 to ø100: 200 stroke or less ⟩



⟨ø32 to ø50: Stroke exceeding 150 and 300 or less
ø63 to ø100: Stroke exceeding 200 and 300 or less ⟩



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	9	Rubber air cushion (R)	Special rubber	
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston	Aluminum Alloy	Alumite
3	Rod Metal	Aluminum Alloy	Alumite	11	Magnet	Plastic	
4	Rod Packing	Nitrile Rubber		12	Spacer	Aluminum Alloy	Alumite
5	Rod metal gasket	Nitrile Rubber		13	Piston Packing	Nitrile Rubber	
6	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Wear Ring	Polyacetal	
7	Cover	Aluminum Alloy	Alumite	15	Rubber air cushion (H)	Special rubber	
8	Bushing	Bearing Alloy					

For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Technical Data

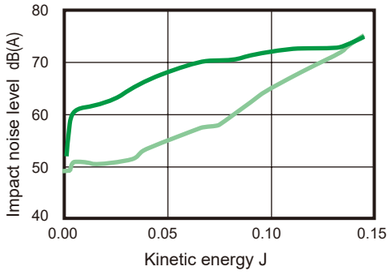
[Performance Comparison of Impact Noise Level]

Standard rubber cushion product:
Rubber air cushion product:

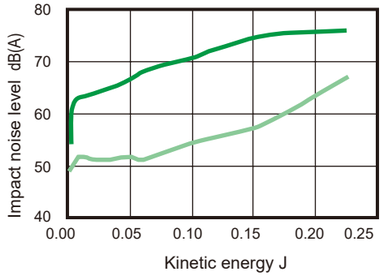
The data is a comparison example under the following conditions.
Values change depending on frame rigidity, etc., so they are not guaranteed values.

(Test Conditions)
Cylinder type: SSD
Cylinder Mounting Direction: Vertically upward
Cylinder supply pressure: 0.5 MPa
Sound level meter measurement position: 1 m from sample

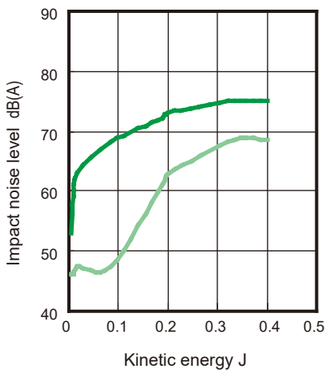
ø20



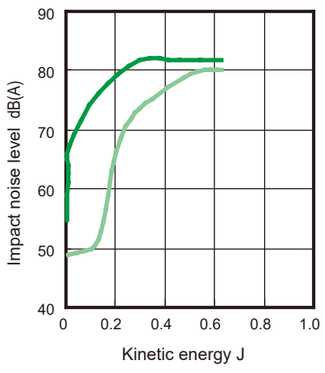
ø25



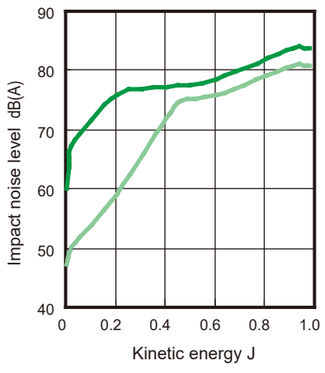
ø32



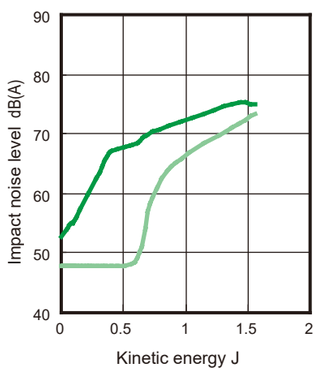
ø40



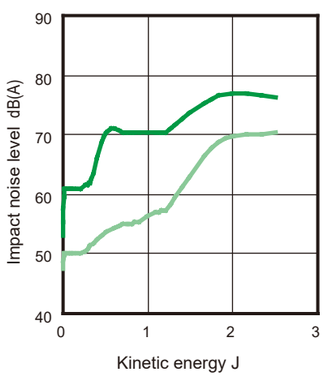
ø50



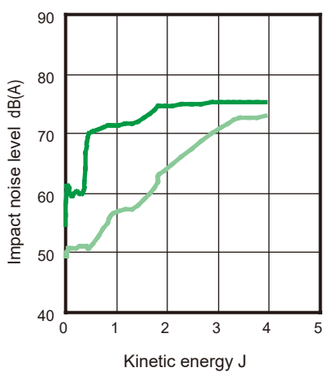
ø63



ø80



ø100

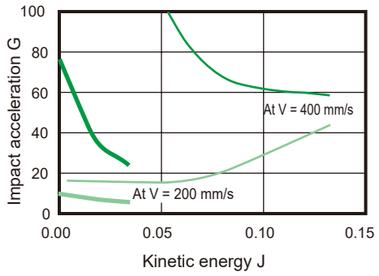


Technical Data

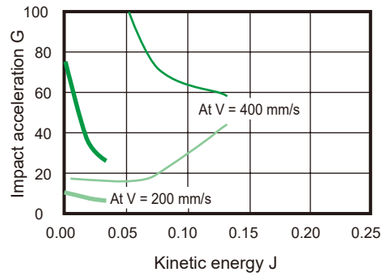
[Performance Comparison of Impact Acceleration]

Standard rubber cushion product:
Rubber air cushion product:

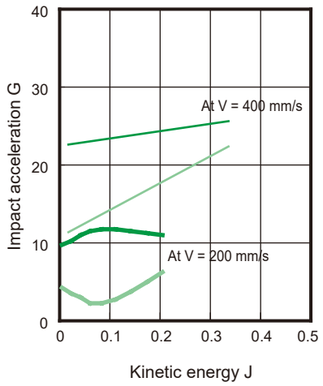
ø20



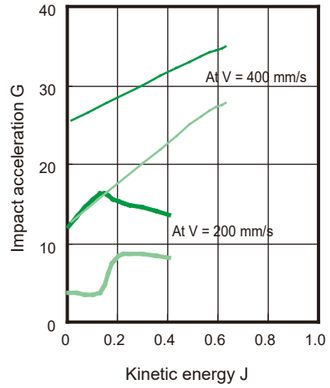
ø25



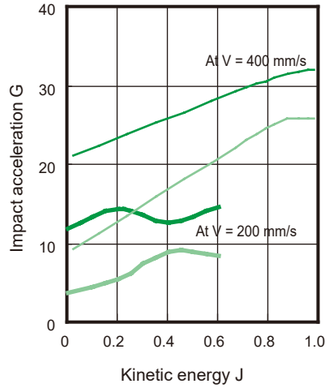
ø32



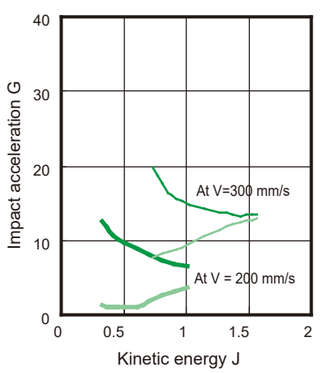
ø40



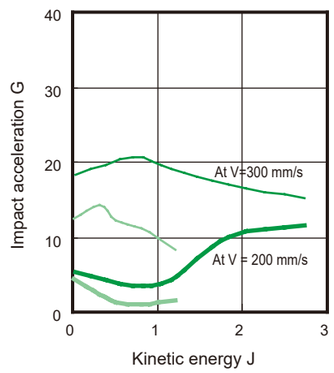
ø50



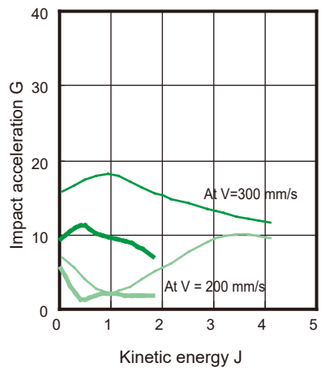
ø63



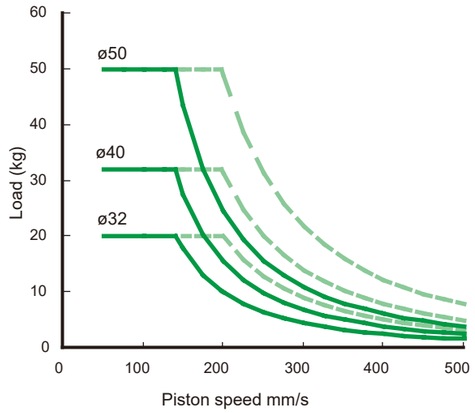
ø80

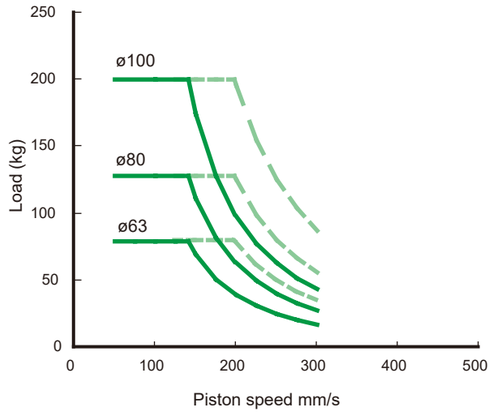


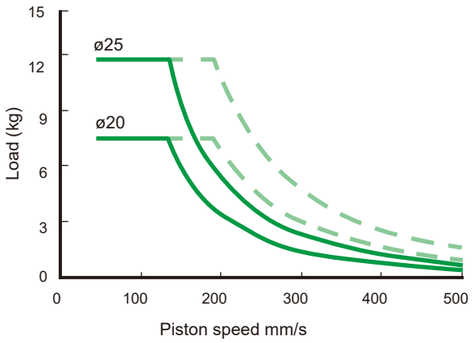
ø100



[Allowable Energy Value]







The usable range is to the lower left of the curve.
It can be used within the range indicated by the — — — line in the figure, but it is recommended to use it within the range of the solid line to make the silencing effect more effective.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

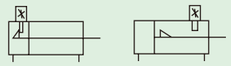


Compact Cylinder Double Acting, Drop Prevention Type

SSD-Q Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-Q	16		5	R			N	LB	I
Model No.	1	2	3	4			7	8	9

With Switch
(Built-in magnet for switch)

SSD-QL	16		5	R	T0H	R	N	LB	I
Model No.	1	2	3	4	5	6	7	8	9
	Bore size	Piping thread type	Stroke	Fall prevention mechanism	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

❶Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Piping thread type

Code	Content
Blank	M5 thread (ø16 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø16	5 to 100	Every 1 mm
ø20	5 to 200	
ø25 to ø100	5 to 300	

Note: For details on stroke, please refer to P. 458.

❹Fall prevention mechanism

Code	Content	
R	With rod side fall prevention	
H	With head side fall prevention	

❺Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	*3
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*4

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches for AC magnetic fields cannot be mounted on ø16.
*4: T8□ switches cannot be mounted on ø16.
*5: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❻Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❽Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (Pin and Retaining Ring Included)	
CB2	Double Clevis Type (Compact type) (Pins and retaining rings included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 462, 463, 466, and 467 for outline dimension drawings. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

❾Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to P. 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-Q-..... -XP5

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

SSD-Q-..... -P4*

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW-T0H
5
Switch Model No.

Specifications

Item	SSD-Q SSD-QL (with switch)								
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Drop Prevention Type								
Operating Fluid	Compressed Air								
Max. Operating Pressure MPa	1.0								
Min. Operating Pressure MPa	0.15								
Proof pressure MPa	1.6								
Ambient Temperature °C	-10 to 60 (however, no freezing)								
Port Size	M5			Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.5}_{0}$								
Operating Piston Speed mm/s	50 to 500						50 to 300		
Cushion	Rubber Cushion								
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								
Fall prevention mechanism	Head Side or Rod Side								
Holding Force (N)	Max. Thrust × 0.7								
Allowable absorbed energy J	0.09	0.157	0.157	0.402	0.628	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore								
		ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●							
	10	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●	●
	60			●	●	●	●	●	●	●
	70			●	●	●	●	●	●	●
	80			●	●	●	●	●	●	●
	90			●	●	●	●	●	●	●
	100			●	●	●	●	●	●	●
Minimum Stroke (mm) *1		5								
Maximum Stroke (mm)		100	200	300						
Intermediate stroke *2		Every 1 mm								

***1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for an intermediate stroke is the dimension with the intermediate stroke value entered as is.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore size (mm)	1	2	1	2
ø16	5	5	20	20
ø20	5	5	15	15
ø25	5	5	10	15
ø32	5	5	10	15
ø40	5	5	10	15
ø50	5	5	10	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

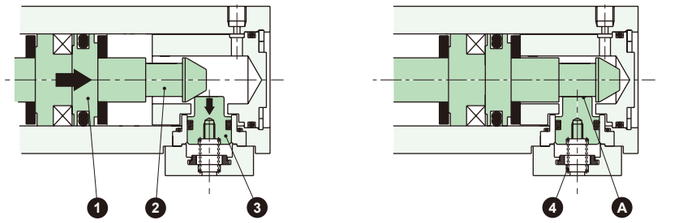
Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

Operation Explanation

●During Lock Operation

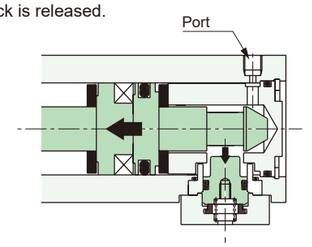
When the cylinder piston① approaches the stroke end, the stopper piston is pushed up along the slope of the③ sleeve②.

When the cylinder piston comes to the stroke end and the Ⓐsleeve groove reaches the stopper piston position, the stopper piston is pushed down by the ④spring and fits into the groove, completing the lock action.



●Lock Release Operation

If pressure is supplied to the port, the stopper piston pushes back the spring, disengages from the sleeve groove, and the lock is released.



Before use, be sure to read "Precautions for Use" Drop Prevention Type, P. 697 to 700.

Cylinder Weight Table

(Weight with switch is when 2 cylinder switches are included) (Unit: g)

Bore size (mm)	Product Weight at stroke 0		St = Added weight per 10 mm
	Without Switch	With Switch	
ø16	119	164	21
ø20	164	239	25
ø25	227	318	32
ø32	377	491	43
ø40	599	742	53
ø50	1197	1391	84
ø63	1703	1982	110
ø80	3651	4064	173
ø100	5291	5858	228

(Example) Product Weight
SSD-QL-40-50-T0H-D-H
- Product Weight at 0 mm stroke...742 g
- Added weight at 50 mm stroke... 53 × 5 = 265 g
- Product Weight.....742 + 265 = 1007 g

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

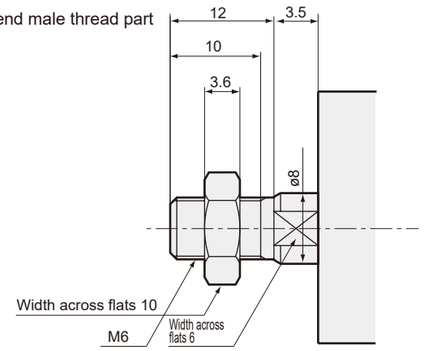
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

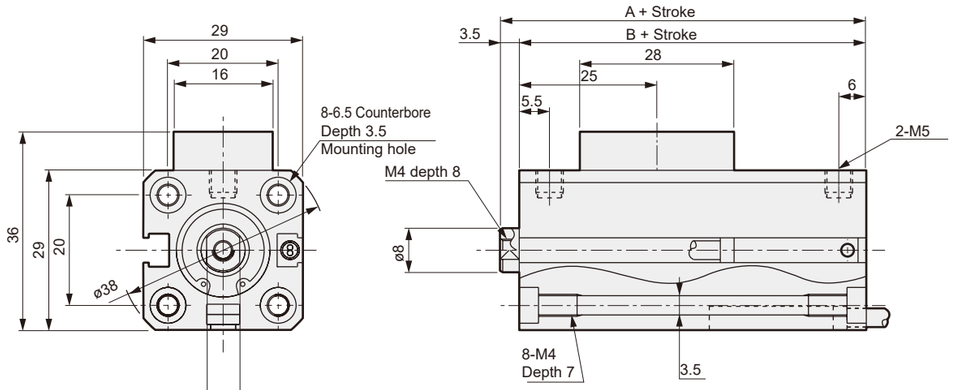
Note: Foot type mounting brackets are 2 pcs/set.

Outline dimension drawing (tube bore: ø16)

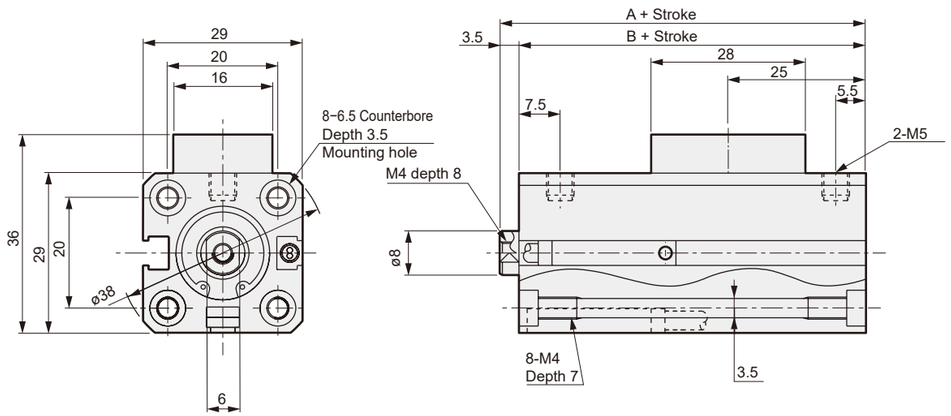
● Rod end male thread part



● SSD-Q (L)-16-R
(With rod side fall prevention)



● SSD-Q (L)-16-H
(With head side fall prevention)

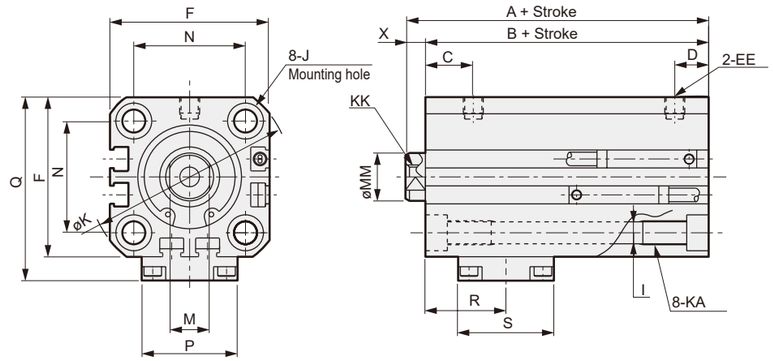


Code	Dimension with switch		Dimension without switch	
Bore Size (mm)	A *1	B *1	A *1	B *1
ø16	61.5	58	56.5	53

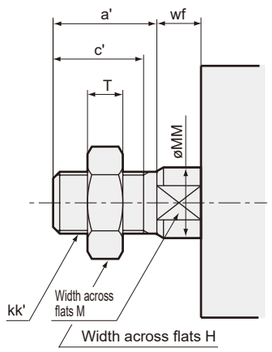
*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, enter the intermediate stroke value as is for the stroke.
(Example) For an intermediate stroke value of 7 mm, enter 7 mm as is for calculation.
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**
***3: For dimensions with each switch, refer to P. 674 to 681.**

Outline Dimension Drawing (Bore size: ø20, ø25)

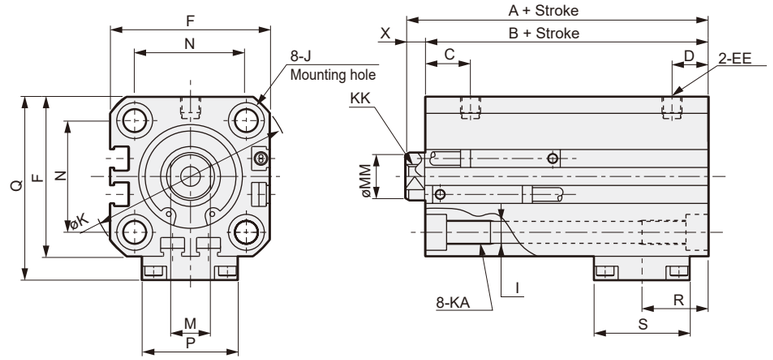
● SSD-Q (L)-20 to 25-R
(With rod side fall prevention)



● Rod end male thread part



● SSD-Q (L)-20 to 25-H
(With head side fall prevention)



Code	Dimension with switch		Dimension without switch		Common dimension							
Bore Size (mm)	A *1	B *1	A *1	B *1	C	D	EE	F	I	J *2	K	KA *2
ø20	68	63.5	58	53.5	9.5	8.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11
ø25	73.5	68.5	63.5	58.5	12	10.5	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11

Code	Common dimension							
Bore Size (mm)	KK	M	MM	N	P	Q	S	X
ø20	M5 depth 7	8	10	25.5	21	43	23.2	4.5
ø25	M6 Depth 12	10	12	28	24	46	24	5

Code	Common dimension	
	With rod side fall prevention mechanism	With head side fall prevention mechanism
Bore Size (mm)	R	R
ø20	18.6	18
ø25	20.5	18.8

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, enter the intermediate stroke value as is for the stroke.
(Example) For an intermediate stroke value of 7 mm, enter 7 mm as is for calculation.
*2: For ø25, if the stroke exceeds 150, there is no counterbore J. In that case, the KA dimension will be M6 depth 17.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**
***4: For dimensions with each switch, refer to P. 674 to 681.**

● Rod end male thread dimensions

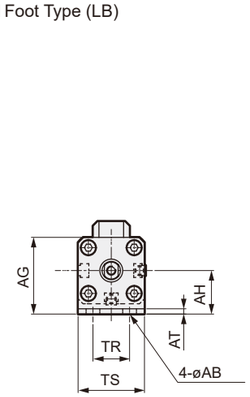
Code	a'	c'	H	kk'	M	MM	T	wf
Bore Size (mm)								
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Table 1 *2

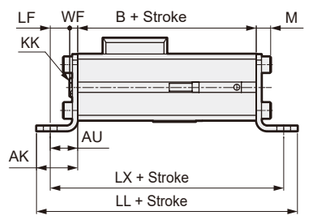
Bore size	J	KA
ø25	-	M6 depth 17

Outline Dimension Drawing (Bore size: ø16 to ø25)

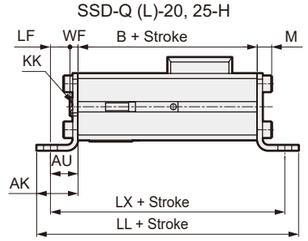
● Axial Foot Type (LB)



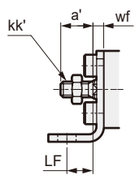
SSD-Q (L)-20, 25-R



SSD-Q (L)-20, 25-H

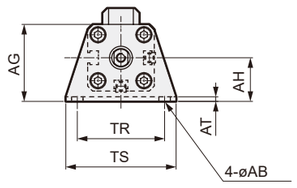


● For rod end male thread

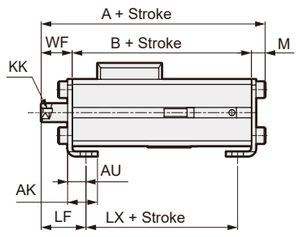


Code / Bore size (mm)	Common dimension									For female thread										For male thread			
	AB	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	a'	kk'	wf	LF
ø16	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	58	94	82	53	89	77	12	M6	3.5	8.5
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	63.5	111.5	95.5	53.5	101.5	85.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	68.5	116.5	100.5	58.5	106.5	90.5	17.5	M10 × 1.25	5	11

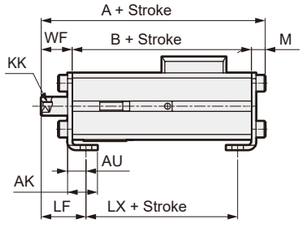
● Axial Foot Type (Compact Type) (LB2)



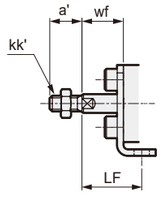
SSD-Q (L)-20, 25-R



SSD-Q (L)-20, 25-H



● For rod end male thread

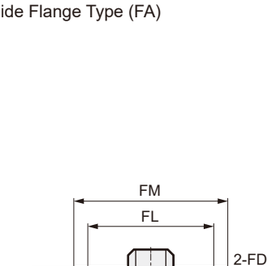


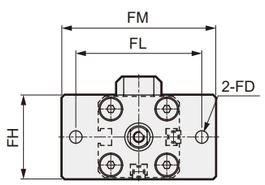
Code / Bore size (mm)	Common dimension									For female thread										For male thread			
	AB	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	77.5	58	46	72.5	53	41	12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	87.2	63.5	51.5	77.2	53.5	41.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	92.7	68.5	53.5	82.7	58.5	43.5	17.5	M10 × 1.25	15	22.5

Outline Dimension Drawing (Bore size: ø16 to ø25)

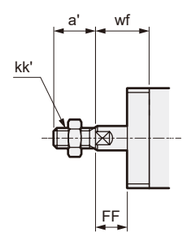
● Rod Side Flange Type (FA)

SSD-Q (L)-20, 25-R

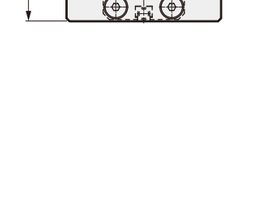




● For rod end male thread



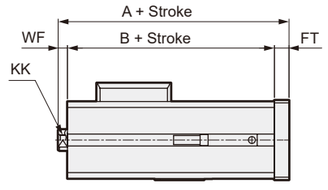
SSD-Q (L)-20, 25-H

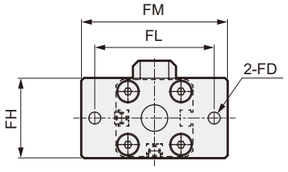


Code / Bore size (mm)	Common dimension					For female thread						For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	71.5	58	66.5	53	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	78	63.5	68	53.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	83.5	68.5	73.5	58.5	7	17.5	M10 × 1.25	15

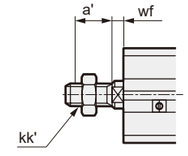
● Head Side Flange Type (FB)

SSD-Q (L)-20, 25-R

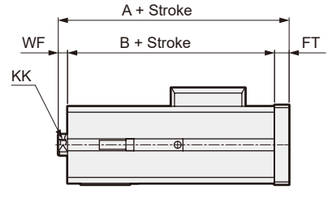




● For rod end male thread



SSD-Q (L)-20, 25-H

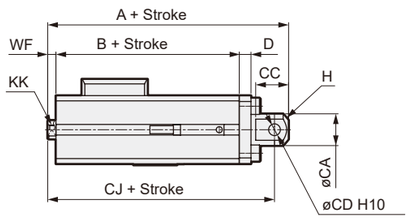


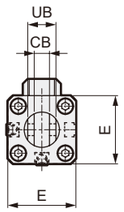
Code / Bore size (mm)	Common dimension					For female thread						For male thread			
	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	
ø16	4.5	30	45	55	5.5	M4 depth 8	3.5	67	58	62	53	12	M6	3.5	
ø20	6.6	39	48	60	8	M5 depth 7	4.5	76	63.5	66	53.5	14	M8	4.5	
ø25	6.6	42	52	64	8	M6 Depth 12	5	81.5	68.5	71.5	58.5	17.5	M10 × 1.25	5	

Outline Dimension Drawing (Bore size: ø16 to ø25)

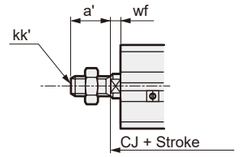
● Double Knuckle Clevis Type (CB)

SSD-Q (L)-20, 25-R

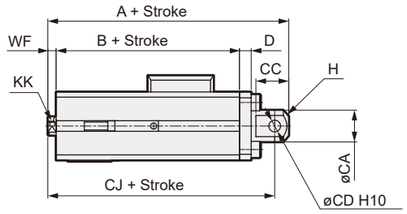




● For rod end male thread



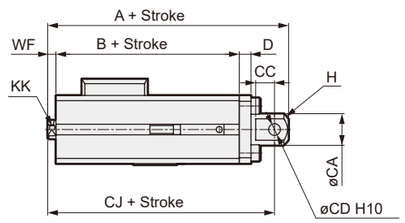
SSD-Q (L)-20, 25-H

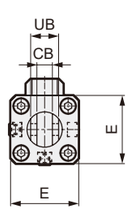


Code	Common dimension								For female thread								For male thread				
Bore size (mm)	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø16	15	6.5$^{+0.4}_{+0.1}$	8	5	5	29	C2	12$^{-0.1}_{-0.4}$	M4 depth 8	3.5	82.5	58	76.5	77.5	53	71.5	12	M6	3.5	76.5	71.5
ø20	24	8$^{+0.4}_{+0.1}$	12	10	8	36	C4	19$^{-0.1}_{-0.4}$	M5 depth 7	4.5	101	63.5	91	91	53.5	81	14	M8	4.5	91	81
ø25	27.5	10$^{+0.4}_{+0.1}$	16	12	8	40	C5	21$^{-0.1}_{-0.4}$	M6 Depth 12	5	112.5	68.5	100.5	102.5	58.5	90.5	17.5	M10 × 1.25	5	100.5	90.5

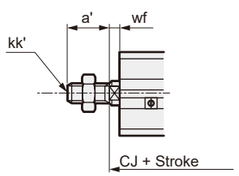
● Double clevis type (Compact type) (CB2)

SSD-Q (L)-20, 25-R

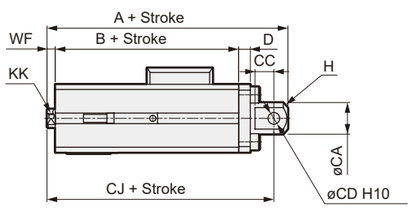




● For rod end male thread



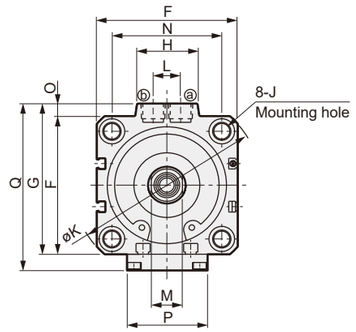
SSD-Q (L)-20, 25-H



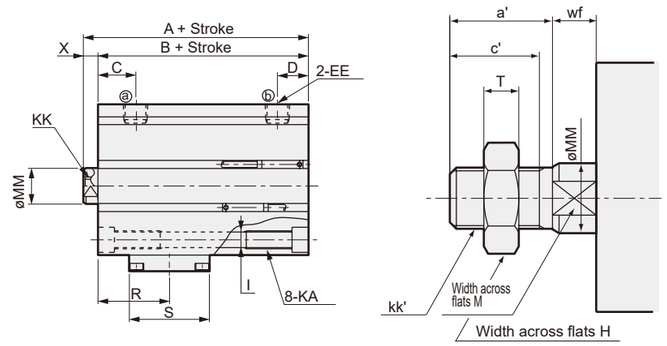
Code	Common dimension								For female thread								For male thread				
Bore size (mm)	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø16	15	6.5$^{+0.4}_{+0.1}$	8	5	5	29	C2	12$^{-0.1}_{-0.4}$	M4 depth 8	3.5	82.5	58	76.5	77.5	53	71.5	12	M6	3.5	76.5	71.5
ø20	20	8$^{+0.4}_{+0.1}$	12	8	5	36	C4	16$^{-0.1}_{-0.3}$	M5 depth 7	4.5	95	63.5	86	85	53.5	76	14	M8	4.5	86	76
ø25	24	10$^{+0.4}_{+0.1}$	14	10	5	40	C5	20$^{-0.1}_{-0.3}$	M6 Depth 12	5	103.5	68.5	93.5	93.5	58.5	83.5	17.5	M10 × 1.25	5	93.5	83.5

Outline Dimension Drawing (Bore size: ø32 to ø100)

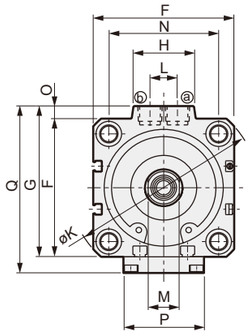
● SSD-Q (L)-32 to 100R
(With rod side fall prevention)

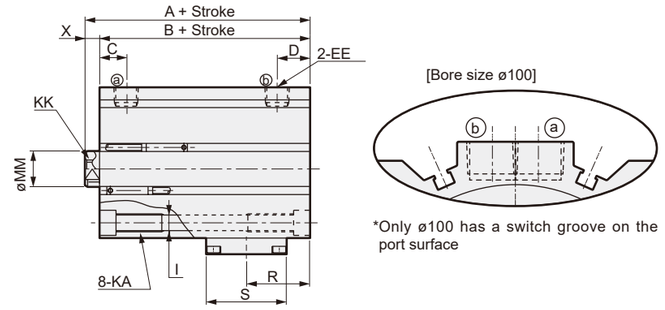


● Rod end male thread part



● SSD-Q (L)-32 to 100-H
(With head side fall prevention)





*Only ø100 has a switch groove on the port surface

Code	Dimension with switch		Dimension without switch		Common dimension								
Bore Size (mm)	A *1	B *1	A *1	B *1	C	D	EE	F	G	H	I	J *2	K
ø32	79	72	69	62	11	10	Rc1/8	45	49.5	24	5.5	9 Counterbore depth 5.5	60
ø40	93	86	83	76	14	11	Rc1/8	52	57	24	5.5	9 Counterbore depth 5.5	69
ø50	112.5	104.5	102.5	94.5	14.5	12.5	Rc1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86
ø63	118	110	108	100	18.5	17	Rc1/4	77	84	33	8.7	14 Counterbore depth 9	103
ø80	149	139	139	129	18	17	Rc3/8	98	104	38	10.5	17.5 Counterbore depth 11	132
ø100	151	139	141	129	23	21	Rc3/8	117	123.5	38	10.5	17.5 Counterbore depth 11	156

Code	Common dimension										
Bore Size (mm)	KA *2	KK	L	M	MM	N	O	P	Q	S	X
ø32	M6 depth 11	M8 depth 13	10	14	16	34	4.5	24	58	38	7
ø40	M6 depth 11	M8 depth 13	10	14	16	40	5	24	65.5	38	7
ø50	M8 depth 13	M10 depth 15	15	17	20	50	7	44	79.5	43	8
ø63	M10 depth 25	M10 depth 15	15	17	20	60	7	47	92.5	47	8
ø80	M12 depth 28	M16 depth 21	15	22	25	77	6	47	112.5	47	10
ø100	M12 depth 28	M20 depth 27	15	27	30	94	6.5	55	133.5	55	12

Code	Common dimension	
Bore Size (mm)	With rod side fall prevention mechanism	With head side fall prevention mechanism
	R	R
ø32	23.2	20.9
ø40	36.2	23.9
ø50	39.1	33.4
ø63	39	34.8
ø80	60	52
ø100	57	50

Table 1 *2

Bore size	J	KA
ø32	-	M6 depth 17
ø40	-	M6 depth 17
ø50	-	M8 depth 20
ø63	-	M10 depth 34
ø80	-	M12 Depth 35
ø100	-	M12 Depth 35

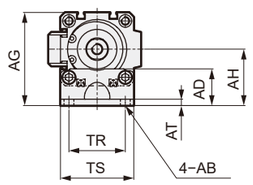
● Rod end male thread dimensions

Code	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

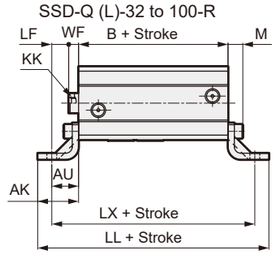
*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, enter the intermediate stroke value as is for the stroke.
(Example) For an intermediate stroke value of 7 mm, enter 7 mm as is for calculation.
*2: For ø32 to ø63: 150 strokes, ø80, ø100: If the stroke exceeds 130, there is no counterbore J. In that case, the KA dimension will be as shown in Table 1.
***3: For dimensions of models with switches, see P. 674 to 681.**
***4: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

Outline Dimension Drawing (Bore size: ø32 to ø100)

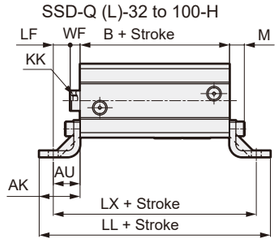
● Axial Foot Type (LB)



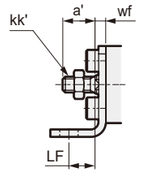
SSD-Q (L)-32 to 100-R



SSD-Q (L)-32 to 100-H

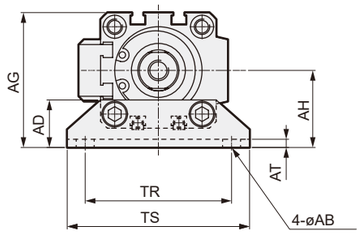


● For rod end male thread

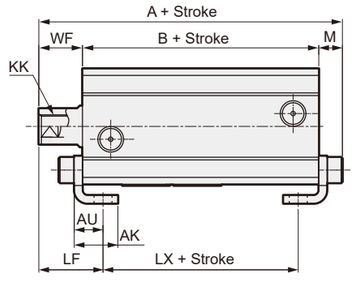


Code / Bore size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	72	120	104	62	110	94	23.5	M14 × 1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	86	144	124	76	134	114	23.5	M14 × 1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	104.5	172.5	148.5	94.5	162.5	138.5	28.5	M18 × 1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	110	190	160	100	180	150	28.5	M18 × 1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	139	239	209	129	229	199	35.5	M22 × 1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	139	239	209	129	229	199	35.5	M26 × 1.5	8	27

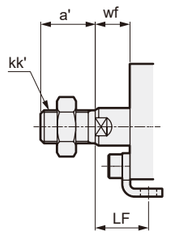
● Axial Foot Type (Compact Type) (LB2)



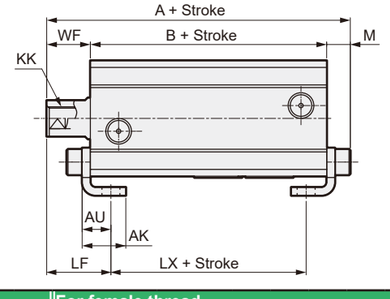
SSD-Q (L)-32 to 100-R



● For rod end male thread



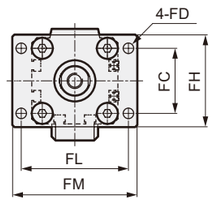
SSD-Q (L)-32 to 100-H



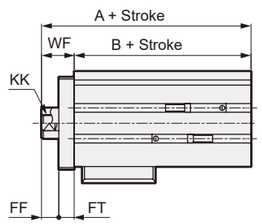
Code / Bore Size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	98.2	72	56	88.2	62	46	23.5	M14 × 1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	112.2	86	70	102.2	76	60	23.5	M14 × 1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	133.7	104.5	81.5	123.7	94.5	71.5	28.5	M18 × 1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	141.2	110	84	131.2	100	74	28.5	M18 × 1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	175.5	139	109	165.5	129	99	35.5	M22 × 1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	179	139	105	169	129	95	35.5	M26 × 1.5	18	35

Outline Dimension Drawing (Bore size: ø32 to ø100)

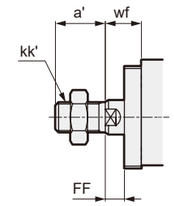
● Rod Side Flange Type (FA)



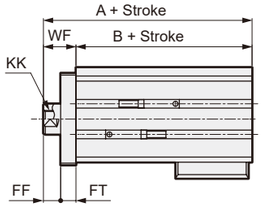
SSD-Q (L)-32 to 100-R



● For rod end male thread



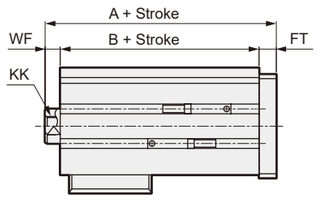
SSD-Q (L)-32 to 100-H

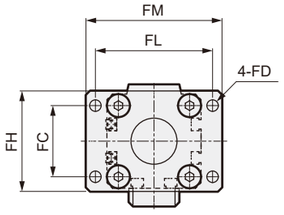


Code / Bore size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	89	72	79	62	7	23.5	M14 × 1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	103	86	93	76	7	23.5	M14 × 1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	122.5	104.5	112.5	94.5	6	28.5	M18 × 1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	128	110	118	100	6	28.5	M18 × 1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	159	139	149	129	7	35.5	M22 × 1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	161	139	151	129	7	35.5	M26 × 1.5	18

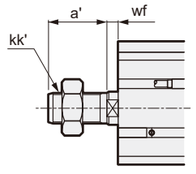
● Head Side Flange Type (FB)

SSD-Q (L)-32 to 100-R

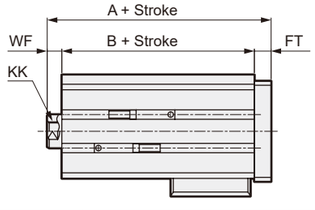




● For rod end male thread



SSD-Q (L)-32 to 100-H

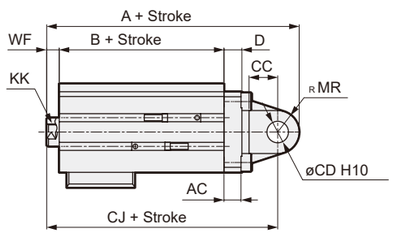


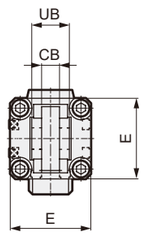
Code / Bore size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf
ø32	34	5.5	48	56	65	8	M8 depth 13	7	87	72	77	62	23.5	M14 × 1.5	5
ø40	40	5.5	54	62	72	8	M8 depth 13	7	101	86	91	76	23.5	M14 × 1.5	5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	121.5	104.5	111.5	94.5	28.5	M18 × 1.5	5
ø63	60	9	80	92	108	9	M10 depth 15	8	127	110	117	100	28.5	M18 × 1.5	5
ø80	77	11	99	116	134	11	M16 depth 21	10	160	139	150	129	35.5	M22 × 1.5	8
ø100	94	11	117	136	154	11	M20 depth 27	12	162	139	152	129	35.5	M26 × 1.5	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

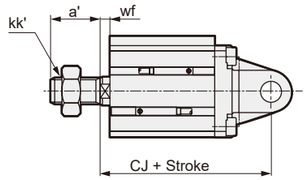
● Double Knuckle Clevis Type (CB)

SSD-Q (L)-32 to 100-R

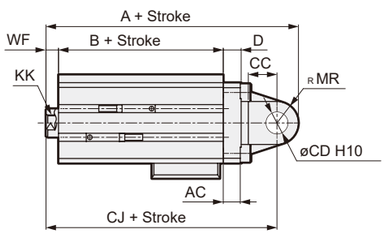




● For rod end male thread



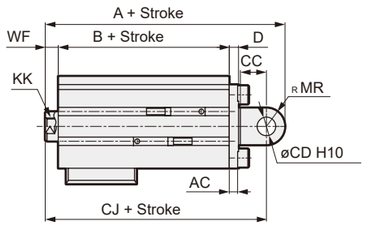
SSD-Q (L)-32 to 100-H

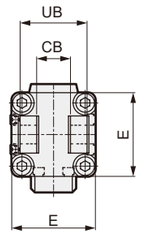


Code	Common dimension										For female thread							For male thread				
Bore size (mm)	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
													A	B	CJ	A	B	CJ				CJ	CJ
ø32	9.5	–	$10^{+0.4}_{+0.1}$	16	12	10	45	–	12	$21^{0.1}_{0.4}$	M8 depth 13	7	121	72	109	111	62	99	23.5	M14 × 1.5	5	107	97
ø40	6.5	–	$18^{+0.4}_{+0.1}$	18	12	10	52	–	12	$36^{0.1}_{0.4}$	M8 depth 13	7	137	86	125	127	76	115	23.5	M14 × 1.5	5	123	113
ø50	6.5	–	$18^{+0.4}_{+0.1}$	18	12	10	64	–	12	$36^{0.1}_{0.4}$	M10 depth 15	8	156.5	104.5	144.5	146.5	94.5	134.5	28.5	M18 × 1.5	5	141.5	131.5
ø63	7.5	–	$20^{+0.4}_{+0.1}$	24	14	10	77	–	16	$40^{0.1}_{0.4}$	M10 depth 15	8	171	110	155	161	100	145	28.5	M18 × 1.5	5	152	142
ø80	10.5	–	$28^{+0.4}_{+0.1}$	30	20	14	98	–	20	$56^{0.1}_{0.4}$	M16 depth 21	10	221	139	201	211	129	191	35.5	M22 × 1.5	8	199	189
ø100	10.5	–	$28^{+0.4}_{+0.1}$	30	20	16	117	–	20	$56^{0.1}_{0.4}$	M20 depth 27	12	223	139	203	213	129	193	35.5	M26 × 1.5	8	199	189

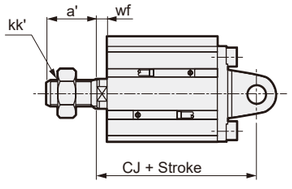
● Double clevis type (Compact type) (CB2)

SSD-Q (L)-32 to 100-R

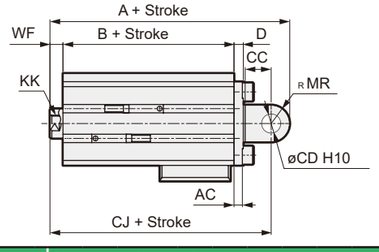




● For rod end male thread



SSD-Q (L)-32 to 100-H

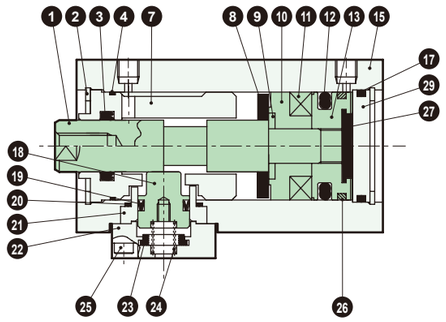


Code	Common dimension										For female thread							For male thread				
Bore size (mm)	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
													A	B	CJ	A	B	CJ				CJ	CJ
ø32	4.5	–	$18^{+0.4}_{+0.1}$	14	10	5	45	–	10	$36^{0.1}_{0.3}$	M8 depth 13	7	109	72	99	99	62	89	23.5	M14 × 1.5	5	97	87
ø40	5	–	$18^{+0.4}_{+0.1}$	14	10	6	52	–	10	$36^{0.1}_{0.3}$	M8 depth 13	7	125	86	115	115	76	105	23.5	M14 × 1.5	5	113	103
ø50	6	–	$22^{+0.4}_{+0.1}$	20	14	7	64	–	14	$44^{0.1}_{0.3}$	M10 depth 15	8	154.5	104.5	140.5	144.5	94.5	130.5	28.5	M18 × 1.5	5	137.5	127.5
ø63	7	–	$22^{+0.4}_{+0.1}$	20	14	8	77	–	14	$44^{0.1}_{0.3}$	M10 depth 15	8	162	110	148	152	100	138	28.5	M18 × 1.5	5	145	135
ø80	9	–	$28^{+0.4}_{+0.1}$	27	18	10	98	–	18	$56^{0.1}_{0.3}$	M16 depth 21	10	205	139	187	195	129	177	35.5	M22 × 1.5	8	185	175
ø100	12	–	$32^{+0.4}_{+0.1}$	31	22	13	117	–	22	$64^{0.1}_{0.3}$	M20 depth 27	12	218	139	196	208	129	186	35.5	M26 × 1.5	8	192	182

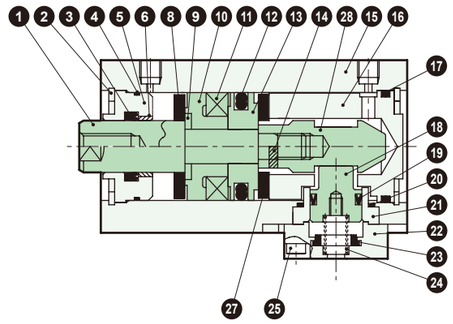
MEMO

Internal structure diagram/materials (bore size: ø16 to ø25)

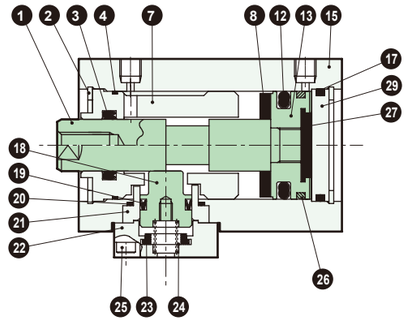
●SSD-QL-16 to 25-R
(Double acting, with switch, with rod side fall prevention)



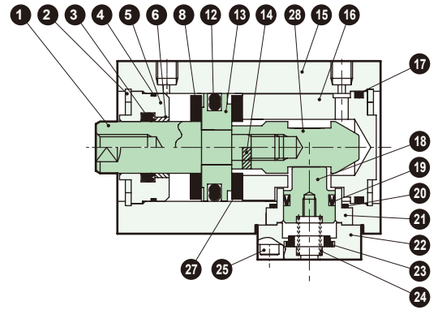
●SSD-QL-16 to 25-H
(Double acting, with switch, with head side fall prevention)



●SSD-Q-16 to 25-R
(Double acting, with rod side fall prevention)



●SSD-Q-16 to 25-H
(Double acting, with head side fall prevention)



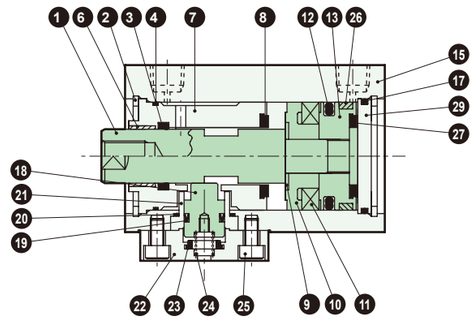
Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Alumite
6	Bushing	Bearing Alloy	ø20, ø25 H side only
7	Rod Cover	Aluminum Alloy	Alumite
8	Cushion Rubber (R)	Urethane Rubber	
9	Spacer washer	Stainless Steel	
10	Spacer	Special Resin	
11	Magnet	Plastic	
12	Piston Packing	Nitrile Rubber	
13	Piston	Aluminum Alloy	Chromate
14	Spring Pin	Steel	Blackening (ø20, ø25 only)
15	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
16	Head Cover	Aluminum Alloy	Chromate
17	O-ring	Nitrile Rubber	
18	Stopper Piston	Steel	Nitriding Treatment
19	Stopper packing	Nitrile Rubber	
20	O-ring	Nitrile Rubber	
21	Stopper housing	Aluminum Alloy	Alumite
22	Stopper Cover	Aluminum Alloy	Alumite
23	Cushion Rubber	Urethane Rubber	
24	Coil Spring	Piano Wire	Electrodeposition Coating
25	Hexagon Socket Head Cap Screw	Steel	Black zinc plating
26	Wear Ring	Polyacetal	
27	Cushion rubber (H)	Urethane Rubber	
28	Sleeve	Steel	Nitriding Treatment
29	Cover	Aluminum Alloy	Chromate

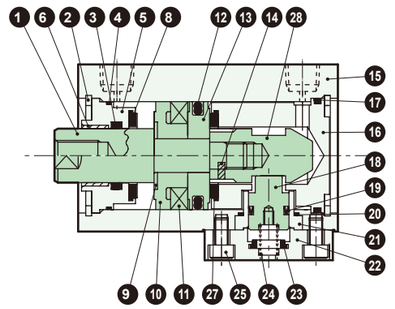
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal structure diagram/materials (ø32 to ø40)

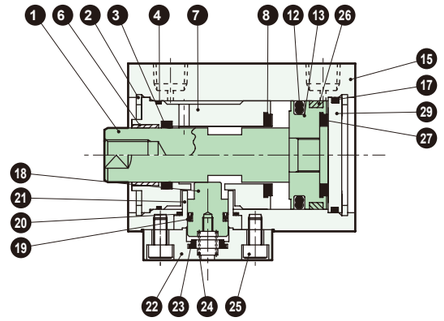
●SSD-QL-32 to 40-R
(Double acting, with switch, with rod side fall prevention)



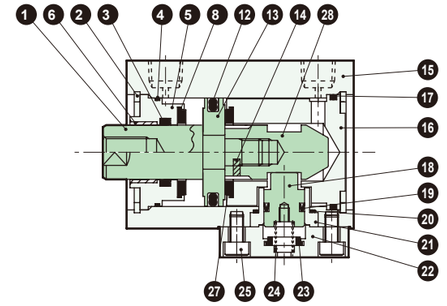
●SSD-QL-32 to 40-H
(Double acting, with switch, with head side fall prevention)



●SSD-Q-32 to 40-R
(Double acting, with rod side fall prevention)



●SSD-Q-32 to 40-H
(Double acting, with head side fall prevention)



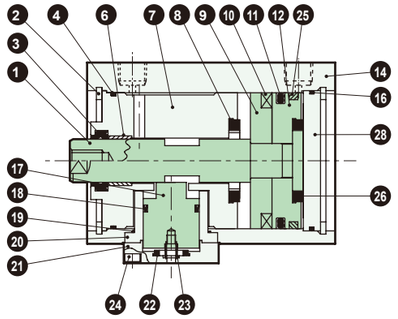
Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber	
5	Rod Metal	Special aluminum	Alumite
6	Bushing	Bearing Alloy	
7	Rod Cover	Aluminum Alloy	Alumite
8	Cushion rubber (R)	Urethane Rubber	
9	Spacer washer	Stainless Steel	
10	Spacer	Special Resin	
11	Magnet	Plastic	
12	Piston Packing	Nitrile Rubber	
13	Piston	Aluminum Alloy	Chromate
14	Spring Pin	Steel	Black Oxide
15	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
16	Head Cover	Aluminum Alloy	Chromate
17	O-ring	Nitrile Rubber	
18	Stopper Piston	Steel	Nitriding Treatment
19	Stopper packing	Nitrile Rubber	
20	O-ring	Nitrile Rubber	
21	Stopper housing	Aluminum Alloy	Alumite
22	Stopper Cover	Aluminum Alloy	Alumite
23	Cushion Rubber	Urethane Rubber	
24	Coil Spring	Piano Wire	Electrodeposition Coating
25	Hexagon Socket Head Cap Screw	Steel	Black zinc plating
26	Wear Ring	Polyacetal	
27	Cushion rubber (H)	Urethane Rubber	
28	Sleeve	Steel	Nitriding Treatment
29	Cover	Aluminum Alloy	Chromate

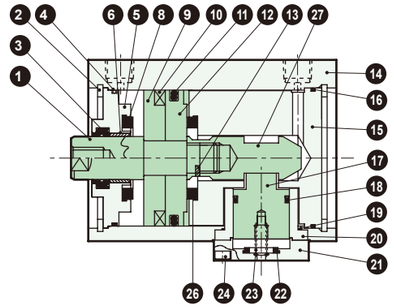
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal structure diagram/materials (ø50 to ø100)

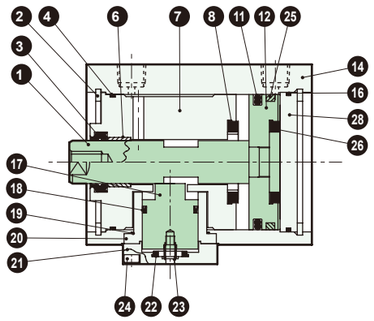
●SSD-QL-50 to 100-R
(Double acting, with switch, with rod side fall prevention)



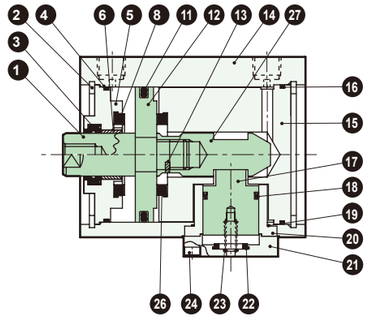
●SSD-QL-50 to 100-H
(Double acting, with switch, with head side fall prevention)



●SSD-Q-50 to 100-R
(Double acting, with rod side fall prevention)



●SSD-Q-50 to 100-H
(Double acting, with head side fall prevention)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Chromate
6	Bushing	Bearing Alloy	
7	Rod Cover	Aluminum Alloy	Chromate
8	Cushion rubber (R)	Urethane Rubber	
9	Spacer	ø50: Special resin ø63 to ø100: Aluminum alloy	ø63 to ø100: Chromate
10	Magnet	Plastic	
11	Piston Packing	Nitrile Rubber	
12	Piston	Aluminum Alloy	Chromate
13	Spring Pin	Steel	Black Oxide
14	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
15	Head Cover	Aluminum Alloy	Chromate
16	O-ring	Nitrile Rubber	
17	Stopper Piston	Steel	Nitriding Treatment
18	Stopper packing	Nitrile Rubber	
19	O-ring	Nitrile Rubber	
20	Stopper housing	Aluminum Alloy	Alumite
21	Stopper Cover	Aluminum Alloy	Alumite
22	Cushion Rubber	Urethane Rubber	
23	Coil Spring	Piano Wire	Electrodeposition Coating
24	Hexagon Socket Head Cap Screw	Steel	Black zinc plating
25	Wear Ring	Polyacetal	
26	Cushion rubber (H)	Urethane Rubber	
27	Sleeve	Steel	Nitriding Treatment
28	Cover	Aluminum Alloy	Chromate

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, Creep Speed Type

SSD-F / SSD-KF Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-F - 12 - □ - 5 ——— N - LB - I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD-LF - 12 - □ - 5 - T0H - R - N - LB - I
1 2 3 4 5 6 7 8 9

Off-delay type, With T1□ switch
(ø12/ø16 only)

SSD-L1F - 12 - □ - 10 - T2JH - R - N - LB - I
1 2 3 4 5 6 7 8 9

1 Model No. | 2 Bore size | 3 Piping thread type | 4 Stroke | 5 Switch Model No. | 6 Number of Switches | 7 Option | 8 Mounting bracket | 9 Accessories

1 Model No.

Code	Content
SSD-F	Double Acting/Ultra-slow Speed Type
SSD-LF	Double acting, Ultra low speed type, With switch
SSD-L1F	Double acting, Ultra low speed type, Off-delay type, With T1□ switch (ø12, ø16)
SSD-KF	Double Acting, High Load Type
SSD-KLF	Double Acting, High Load Type, With Switch

2 Bore Size (mm)

Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

3 Port Thread Type:

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

●SSD-F

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	

●SSD-KF

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 100	Every 1 mm
ø25 to ø50	1 to 150	
ø63 to ø100	1 to 200	

Note: For details on stroke, please refer to P. 476.

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*7

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on the following bore sizes.
・SSD-L1F: ø12 to ø32
・SSD-KLF: ø12, ø16
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

8 Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (Pin and Retaining Ring Included)	
CB2	Double Clevis Type (Compact type) (Pins and retaining rings included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 369, 370, 373, 374, 393, 394, 398, and 399 for outline dimension drawings. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-F -..... - XP5

SSD-KF -..... - XP5

Switch Single Unit Model No. Notation Method

SW - T0H
5

Switch Model No.

Specifications

Item	SSD-F, SSD-LF (with switch)										SSD-KF, SSD-KLF (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type																			
Operating Fluid	Compressed Air																			
Max. Operating Pressure MPa	1.0																			
Min. Operating Pressure MPa	0.1						0.05				0.1						0.05			
Proof pressure MPa	1.6																			
Ambient Temperature °C	5 to 60																			
Port Size	M5			Rc1/8		Rc1/4		Rc3/8			M5			Rc1/8		Rc1/4		Rc3/8		
Stroke tolerance mm	+1.0 0										+2.0 0									
Operating Piston Speed mm/s	1 to 200																			
Cushion	None										Rubber Cushion									
Lubrication	Not Available																			
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

●SSD-F

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30			50						
Intermediate Stroke *2		Every 1 mm									

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator, off-delay type, for AC strong magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, see P. 477.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 369, P. 373.**

●SSD-KF

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●			
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●	●	●
	60				●	●	●	●	●	●	●
	70				●	●	●	●	●	●	●
	80				●	●	●	●	●	●	●
	90				●	●	●	●	●	●	●
	100				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		100			150				200		
Intermediate stroke *2		Every 1 mm									

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator type or AC magnetic field switch cannot be manufactured. For the number of mountable switches and the minimum stroke, see P. 477.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 393, 397, 398.**

Number of Switches Mounted and Min. Stroke (mm)

●SSD-LF

Switch Model No.	SSD-LF				SSD-KLF			
	T□		T2WL		T□		T2WL	
Number of Switches / Bore size (mm)	1	2	1	2	1	2	1	2
ø12	5	5	20	20	5	5	20	20
ø16	5	5	20	20	5	5	20	20
ø20	5	5	20	20	5	5	15	15
ø25	5	5	20	20	5	5	15	15
ø32	5	5	20	20	5	5	15	15
ø40	5	5	15	15	5	5	10	15
ø50	5	5	15	15	5	5	10	15
ø63	5	5	10	15	5	5	10	15
ø80	5	5	10	15	5	5	10	15
ø100	5	5	10	15	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

Same as double acting, single rod SSD series and double acting, high load SSD-K series.
See P. 368 to 375 and 392 to 400.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

●SSD-F

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	197	288	228	319
ø32	122	236	144	258	166	280	188	302	209	323	231	345	275	389	318	432
ø40	183	326	210	353	236	379	263	406	290	433	316	459	369	512	422	565
ø50	299	493	341	535	383	577	425	619	467	661	510	704	594	788	678	872
ø63	452	731	507	786	-	-	617	896	-	-	727	1006	838	1117	948	1227
ø80	841	1254	928	1341	-	-	1101	1514	-	-	1274	1687	1448	1861	1621	2034
ø100	1319	1886	1433	2000	-	-	1660	2227	-	-	1888	2455	2115	2682	2343	2910

●SSD-KF

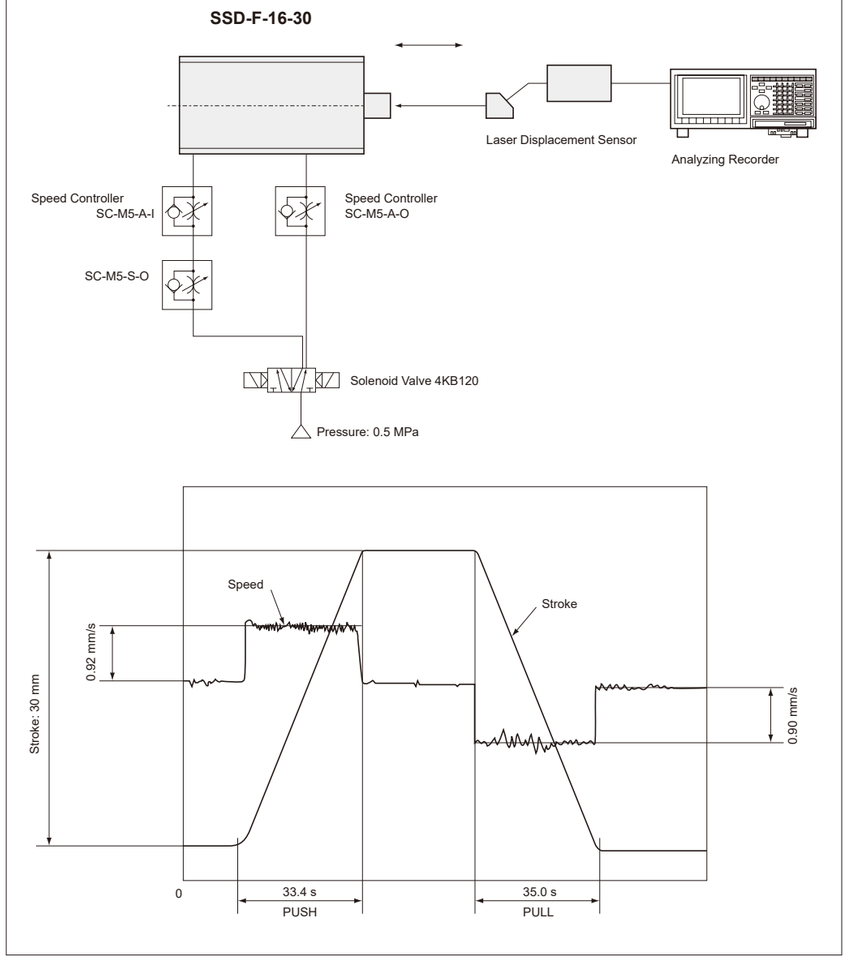
(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50		60		70		80		90		100	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø12	44	86	53	95	61	103	70	112	78	121	87	129	104	146	121	163	138	180	155	197	172	214	189	231	206	248
ø16	59	104	69	114	80	125	91	136	102	147	113	158	135	169	157	191	179	213	201	235	223	257	245	279	267	301
ø20	75	150	88	163	101	176	113	188	126	201	138	213	163	238	188	263	213	288	238	313	263	338	288	363	313	388
ø25	-	-	118	209	134	225	150	241	165	256	182	273	214	305	246	337	278	369	310	401	342	433	374	465	406	497
ø32	-	-	188	302	209	323	231	345	253	367	275	389	318	432	361	475	404	518	447	561	490	604	533	647	576	690
ø40	-	-	263	406	290	433	316	459	342	485	369	512	422	565	475	618	528	671	581	724	634	777	687	830	740	883
ø50	-	-	425	619	467	661	510	704	553	747	594	788	678	872	762	956	846	1040	930	1124	1014	1208	1098	1292	1182	1376
ø63	-	-	617	896	-	-	727	1006	-	-	838	1117	948	1227	1058	1337	1168	1447	1278	1557	1388	1667	1498	1777	1608	1887
ø80	-	-	1101	1514	-	-	1274	1687	-	-	1448	1861	1621	2034	1794	2207	1967	2380	2140	2553	2313	2726	2486	2899	2659	3072
ø100	-	-	1660	2227	-	-	1888	2455	-	-	2115	2682	2343	2910	2571	3138	2799	3366	3027	3594	3255	3822	3483	4050	3711	4278

Stroke (mm)	110		120		130		140		150		160		170		180		190		200	
Bore size (mm)	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø25	438	529	470	561	502	593	534	625	566	657	-	-	-	-	-	-	-	-	-	-
ø32	619	733	662	776	705	819	748	862	791	905	-	-	-	-	-	-	-	-	-	-
ø40	793	936	846	989	899	1042	952	1095	1005	1148	-	-	-	-	-	-	-	-	-	-
ø50	1266	1460	1350	1544	1434	1628	1518	1712	1602	1796	-	-	-	-	-	-	-	-	-	-
ø63	1718	1997	1828	2107	1938	2217	2048	2327	2158	2437	2268	2547	2378	2657	2488	2767	2598	2877	2708	2987
ø80	2832	3245	3005	3418	3178	3591	3351	3764	3524	3937	3697	4110	3870	4283	4043	4456	4216	4629	4389	4802
ø100	3939	4506	4167	4734	4395	4962	4623	5190	4851	5418	5079	5646	5307	5874	5535	6102	5763	6830	5991	6558

Measurement Data

● Measurement method

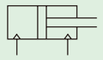




Compact Cylinder Double Acting, Low Speed Type

SSD-O Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø83, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-O – 12 – □ – 5 ——— N – LB – I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD-OL – 12 – □ – 5 – T0H – R – N – LB – I
1 2 3 4 5 6 7 8 9

Off-delay type, With T1□ switch
(ø12, ø16 only)

SSD-OL1 – 12 – □ – 10 – T2JH – R – N – LB – I
1 2 3 4 5 6 7 8 9

1 Model No. 2 Bore size 3 Piping thread type 4 Stroke 5 Switch Model No. 6 Number of Switches 7 Option 8 Mounting bracket 9 Accessories

1 Model No.

Code	Content
SSD-O	Double Acting/Low Speed Type
SSD-OL	Double acting, Low speed type, With switch
SSD-OL1	Double acting, Low speed type, Off-delay type, With T1□ switch (ø12, ø16 only)

2 Bore Size (mm)

Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

3 Piping thread type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 482.

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12 to ø32.
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

8 Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (Pin and Retaining Ring Included)	
CB2	Double Clevis Type (Compact type) (Pins and retaining rings included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 369, P. 370, P. 373, P. 374. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to P. 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-O – ..... – XP5

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

SSD-O – ..... – P7□

Switch Single Unit Model No. Notation Method

SW – T0H
5
Switch Model No.

Specifications

Item	SSD-O SSD-OL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	M5				Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	+1.0 0									
Operating Piston Speed mm/s	10 to 200									
Cushion	None									
Lubrication	Not Available									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30			50						
Intermediate Stroke *2		Every 1 mm									

***1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator, off-delay type, AC magnetic field type, T1*, T8* switch. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 369, P. 373.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	197	288	228	319
ø32	122	236	144	258	166	280	188	302	209	323	231	345	275	389	318	432
ø40	183	326	210	353	236	379	263	406	290	433	316	459	369	512	422	565
ø50	299	493	341	535	383	577	425	619	467	661	510	704	594	788	678	872
ø63	452	731	507	786	-	-	617	896	-	-	727	1006	838	1117	948	1227
ø80	841	1254	928	1341	-	-	1101	1514	-	-	1274	1687	1448	1861	1621	2034
ø100	1319	1886	1433	2000	-	-	1660	2227	-	-	1888	2455	2115	2682	2343	2910

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

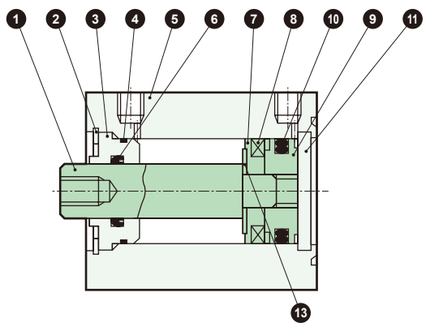
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing

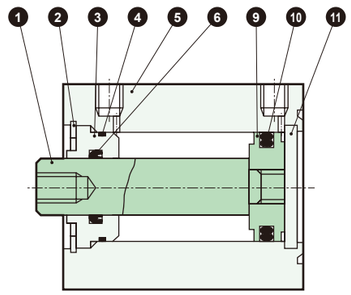
Same as double acting, single rod SSD series. See P. 368 to 375.

Internal Structure Diagram/Material

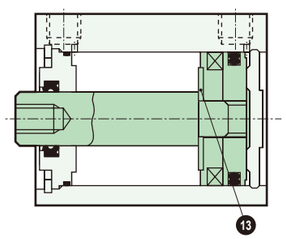
●SSD-OL-12 to 25 (Double acting, Low speed type, With switch)



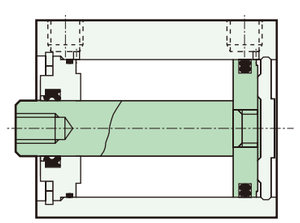
●SSD-O-12 to 25 (Double acting, Low speed type)



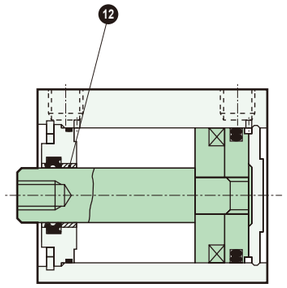
●SSD-OL-32 to 50 (Double acting, Low speed type, With switch)



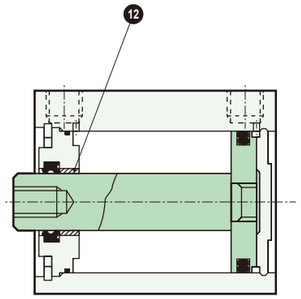
●SSD-O-32 to 50 (Double acting, Low speed type)



●SSD-OL-63 to 100 (Double acting, Low speed type, With switch)



●SSD-O-63 to 100 (Double acting, Low speed type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø100: Steel	ø16 to ø100: Industrial hard chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12, ø63 to ø100: Aluminum alloy ø16 to ø50: Special resin	ø12, ø63 to ø100: Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to ø25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100: Anodized
12	Bushing	Bearing Alloy	
13	Spacer washer	Stainless Steel	

Fluorine-based grease is used.

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO



Compact Cylinder Double Acting, High Load, Low Friction Type

SSD-KU Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-KU – 20 – ( ) – 5 ——— N – LB – I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch
(Built-in magnet for switch)

SSD-KUL – 20 – ( ) – 5 – T0H – R – N – LB – I

Model No. ❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Bore size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting bracket ❽ Accessories

❶Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Piping thread type

Code	Content
Blank	M5 thread (ø20/ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❸Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20	5 to 200	Every 1 mm
ø25 to ø50	5 to 300	
ø63 to ø100	5 to 300	

Note: For details on stroke, please refer to P. 488.

❹Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*5

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

❺Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø20 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❼Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
CB2	Double Clevis Type (Compact type) (Pins and retaining rings included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. Refer to outline dimension drawings on P. 393, P. 394, P. 398, P. 399. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

❽Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-KU – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
❹
Switch Model No.

Specifications

Item	SSD-KU SSD-KUL (with switch)							
Bore size	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type							
Operating Fluid	Compressed Air							
Max. Operating Pressure MPa	0.7							
Min. Operating Pressure MPa	0.03							
Proof pressure MPa	1.0							
Ambient Temperature °C	5 to 60							
Port Size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	+2.0 0							
Operating piston speed m/s	10 to 500					10 to 300		
Cushion	Rubber Cushion							
Lubrication	Not Available							
Allowable absorbed energy J	0.16	0.16	0.40	0.62	0.98	1.56	2.51	3.92
Internal leakage ℓ/min	5						8	

Stroke

Stroke (mm)		Applicable Bore							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●							
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	60		●	●	●	●	●	●	●
	70		●	●	●	●	●	●	●
	80		●	●	●	●	●	●	●
	90		●	●	●	●	●	●	●
	100		●	●	●	●	●	●	●
Minimum Stroke (mm) *1		5							
Maximum Stroke (mm)		200	300						
Intermediate Stroke *2		Every 1 mm							

***1: Products less than 10 mm with 2-color indicator, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: For minimum stroke for mounting brackets LB, LB2, refer to P. 393, 397, 398.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

Note: Foot type mounting brackets are 2 pcs/set.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore size (mm)	5		10		15		20		25		30		40		50		60		70		80		90		100	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	75	150	88	163	101	176	113	188	126	201	138	213	163	238	188	263	213	288	238	313	263	338	288	363	313	388
ø25	-	-	118	209	134	225	150	241	165	256	182	273	214	305	246	337	278	369	310	401	342	433	374	465	406	497
ø32	-	-	188	302	209	323	231	345	253	367	275	389	318	432	361	475	404	518	447	561	490	604	533	647	576	690
ø40	-	-	263	406	290	433	316	459	342	485	369	512	422	565	475	618	528	671	581	724	634	777	687	830	740	883
ø50	-	-	425	619	467	661	510	704	553	747	594	788	678	872	762	956	846	1040	930	1124	1014	1208	1098	1292	1182	1376
ø63	-	-	617	896	-	-	727	1006	-	-	838	1117	948	1227	1058	1337	1168	1447	1278	1557	1388	1667	1498	1777	1608	1887
ø80	-	-	1101	1514	-	-	1274	1687	-	-	1448	1861	1621	2034	1794	2207	1967	2380	2140	2553	2313	2726	2486	2899	2659	3072
ø100	-	-	1660	2227	-	-	1888	2455	-	-	2115	2682	2343	2910	2571	3138	2799	3366	3027	3594	3255	3822	3483	4050	3711	4278

Stroke (mm) / Bore size (mm)	110		120		130		140		150		160		170		180		190		200	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	338	413	363	438	388	463	413	488	438	513	463	538	488	563	513	588	538	613	563	638
ø25	438	529	470	561	502	593	534	625	566	657	598	689	630	721	662	753	694	785	726	817
ø32	619	733	662	776	705	819	748	862	791	905	833	947	876	990	919	1033	962	1076	1005	1119
ø40	793	936	846	989	899	1042	952	1095	1005	1148	1058	1201	1111	1254	1164	1307	1217	1360	1270	1413
ø50	1266	1460	1350	1544	1434	1628	1518	1712	1602	1796	1700	1894	1785	1979	1870	2064	1955	2149	2040	2234
ø63	1718	1997	1828	2107	1938	2217	2048	2327	2158	2437	2268	2547	2378	2657	2488	2767	2598	2877	2708	2987
ø80	2832	3245	3005	3418	3178	3591	3351	3764	3524	3937	3697	4110	3870	4283	4043	4456	4216	4629	4389	4802
ø100	3939	4506	4167	4734	4395	4962	4623	5190	4851	5418	5079	5646	5307	5874	5535	6102	5763	6830	5991	6558

Stroke (mm) / Bore size (mm)	210		220		230		240		250		260		270		280		290		300	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø25	769	849	801	881	833	913	865	945	897	977	929	1009	961	1041	993	1073	1025	1105	1057	1137
ø32	1048	1162	1091	1205	1134	1248	1177	1291	1220	1334	1263	1377	1306	1420	1349	1463	1392	1506	1435	1549
ø40	1323	1466	1376	1519	1429	1572	1482	1625	1535	1678	1588	1731	1641	1784	1694	1837	1747	1890	1800	1943
ø50	2125	2319	2210	2404	2295	2489	2380	2574	2465	2659	2550	2744	2635	2829	2720	2914	2805	2999	2890	3084
ø63	2817	3096	2927	3206	3037	3316	3147	3426	3257	3536	3367	3646	3477	3756	3587	3866	3697	3976	3807	4086
ø80	4561	4974	4734	5147	4907	5320	5080	5493	5253	5666	5426	5839	5599	6012	5772	6185	5945	6358	6118	6531
ø100	6220	6787	6448	7015	6676	7243	6904	7471	7132	7699	7360	7927	7588	8155	7816	8383	8044	8611	8272	8839

Theoretical Thrust Table

(Unit: N)

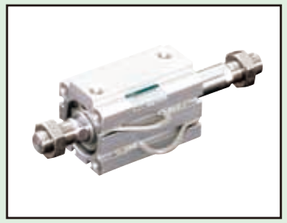
Bore size (mm)	Operating Direction	Operating Pressure MPa								
		0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø20	Push	9.42	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2
	Pull	7.07	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2
ø25	Push	14.7	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2
	Pull	11.3	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2
ø32	Push	24.1	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2
	Pull	18.1	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2
ø40	Push	37.7	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2
	Pull	31.7	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2
ø50	Push	58.9	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3
	Pull	49.5	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3
ø63	Push	93.5	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3
	Pull	84.0	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3
ø80	Push	1.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3
	Pull	1.36×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3
ø100	Push	2.36×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3
	Pull	2.14×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3

Outline Dimension Drawing

Same as double acting, high load SSD-K series. See P. 392 to 400.

Technical Data

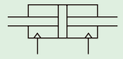
Refer to "Pneumatic Cylinder①" (No. RJ-002AA) for technical data regarding sliding resistance values. SSD-KU Series shows a similar trend to the data of "Pneumatic Cylinder①(No. RJ-002AA)", which is "SCM-U Series".



Compact Cylinder Double Acting, Double Rod Type

SSD-D Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø120, ø140, ø160

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-D – 12 – ( ) – 5 ——— N – LB – I

Model No. ❶ ❷ ❸ ❻ ❼ ❽

With Switch
(Built-in magnet for switch)

SSD-DL – 12 – ( ) – 5 – T0H – R – N – LB – I

Model No. ❶ Bore size ❷ Piping thread type ❸ Stroke ❹ Switch Model No. ❺ Number of Switches ❻ Option ❼ Mounting bracket ❽ Accessories

❶ Bore size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø120
140	ø140
160	ø160

❷ Piping thread type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø160)
NN	NPT thread (Custom product) (ø32 to ø160)
GN	G thread (Custom product) (ø32 to ø160)

❸ Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	
ø125 to ø160	10 to 300	

Note: For details on stroke, please refer to P. 492.

❹ Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12, ø16.
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

*7

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❺ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❻ Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1, *2 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.
*2: ø125 to ø160 cannot be selected.

❼ Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type) (ø12 to ø100)	
*1 FA	Rod side flange type (ø12 to ø100)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 495, 496, 498, and 499 for outline dimension drawings. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

❽ Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (Compact type)	
Y	Double Knuckle (Pin and retaining ring included)	
Y2	Double Knuckle (Compact type) (Pins and retaining rings included)	

*1: Selectable when rod end male thread "N" is selected.
*2: When selecting accessories, 2 pcs. will be included. If "IY" is specified, one of each will be included.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-D – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
❹
Switch Model No.

Specifications

Item	SSD-D / SSD-DL (with switch)												
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Actuation method	Double Acting Type												
Operating Fluid	Compressed Air												
Max. Operating Pressure MPa	1.0												
Min. Operating Pressure MPa	0.15							0.1			0.05		
Proof pressure MPa	1.6												
Ambient Temperature °C	-10 to 60 (No freezing)												
Port Size	M5				Rc1/8		Rc1/4			Rc3/8			
Stroke tolerance mm	+1.0 0										+2.0 0		
Operating Piston Speed mm/s	50 to 500							50 to 300					
Cushion	None										Rubber Cushion		
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)												
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	6.52	6.52	7.78

Stroke

Stroke (mm)		Applicable Bore												
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●			
	10	●	●	●	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●						
	20	●	●	●	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●						
	30	●	●	●	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●	●	●	●
	60											●	●	●
	70											●	●	●
	80											●	●	●
	90											●	●	●
	100											●	●	●
Minimum Stroke (mm) *1		1										10		
Maximum Stroke (mm)		30			50							300		
Intermediate Stroke *2		Every 1 mm												

***1: Cannot be manufactured for less than 5 mm with 1-color indicator switch, or less than 10 mm with 2-color indicator, off-delay type, AC magnetic field type, T1□, T8□ switch. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The handling method for intermediate strokes differs for ø12 to ø100 and ø125 to ø160 as follows. Please be careful.
[ø12 to ø100]
The overall length dimension for intermediate stroke is the same as the standard stroke above it.
[ø125 to ø160]
The overall length dimension for intermediate stroke will be handled with a length dedicated to intermediate stroke.

***3: For the minimum stroke when using mounting brackets LB and LB2, see P. 495 and 498.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	15	15
ø25	5	5	10	15
ø32	5	5	10	15
ø40	5	5	10	15
ø50	5	5	10	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15
ø125	10	10	10	15
ø140	10	10	10	15
ø160	10	10	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

● ø12 to ø100 (Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	52	105	60	105	69	115	77	124	86	134	95	147	-	-	-	-
ø16	74	133	85	133	95	144	106	156	117	168	128	177	-	-	-	-
ø20	131	187	143	222	161	238	179	254	196	269	214	285	-	-	-	-
ø25	147	238	162	253	178	269	194	285	210	301	226	316	257	348	288	379
ø32	184	299	230	344	275	390	322	436	366	481	413	527	507	617	601	707
ø40	283	426	310	453	336	479	363	506	390	533	416	569	469	612	522	665
ø50	458	652	508	702	558	751	608	803	658	851	708	901	808	1001	911	1105
ø63	827	953	902	1266	-	-	1052	1416	-	-	1202	1566	1353	1717	1503	1867
ø80	1491	1421	1608	1538	-	-	1841	2294	-	-	2074	2527	2308	2771	2541	3004
ø100	2314	2941	2483	3105	-	-	2820	3402	-	-	3158	3770	3495	4097	3833	4425

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

● ø125 to ø160 (Unit: kg)

Stroke (mm) / Bore Size (mm)	10		20		30		40		50		60		70		80		90		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø125	4.64	4.74	4.98	5.08	5.32	5.42	5.66	5.76	6	6.1	6.64	6.44	6.68	6.78	7.02	7.12	7.36	7.46	7.7	7.8
ø140	6.62	6.73	7	7.11	7.93	7.5	7.77	7.88	8.15	8.26	8.54	8.65	8.92	9.03	9.3	9.41	9.68	9.79	10.07	10.18
ø160	9.1	9.22	9.58	9.7	10.06	10.18	10.54	10.66	11.02	11.14	11.5	11.62	11.97	12.09	12.45	12.57	12.93	13.05	13.41	13.53

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Pull	-	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Pull	-	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Pull	-	-	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Pull	-	-	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Pull	-	-	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Pull	-	-	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Pull	-	-	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Pull	-	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Pull	-	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Pull	-	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3
ø125	Pull	5.65×10^2	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
ø140	Pull	7.21×10^2	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4
ø160	Pull	9.42×10^2	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4

Mounting Bracket Model No. Notation Method

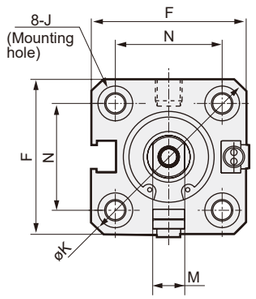
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50
Flange (FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50
Bore Size (mm) / Mounting bracket	**ø63**	**ø80**	**ø100**	**ø125**	**ø140**	**ø160**	
Foot (LB)	SSD-LB-63	SSD-LB-80	SSD-LB-100	SSD-LB-125	SSD-LB-140	SSD-LB-160	
Foot (LB2)	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100	–	–	–	
Flange (FB)	SSD-FA-63	SSD-FA-80	SSD-FA-100	–	–	–	

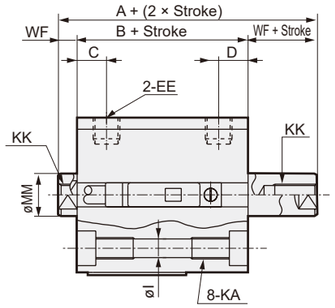
Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø12 to ø25)

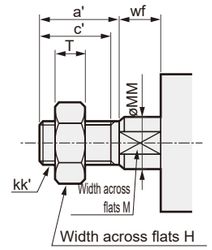
● SSD-D (L)-12 to 25

ø12, ø16

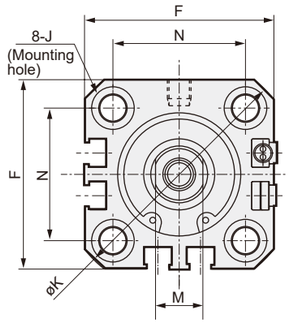


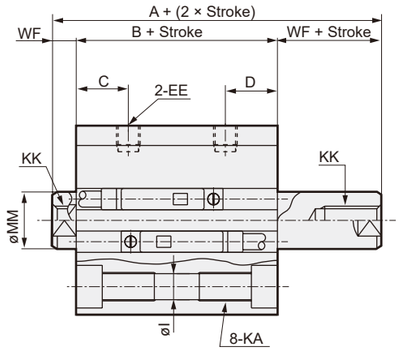


● Rod end male thread part



ø20, ø25





Note: The positions for the left and right width across flats are unspecified.

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	34	27	29	22	5.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	34	27	29	22	5.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	45	36	35	26	8	8	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	51	41	41	31	11	11	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

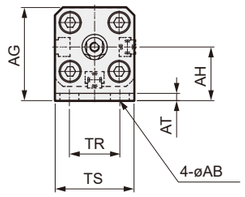
*1: When calculating A + (2 x stroke), B + stroke, and WF + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

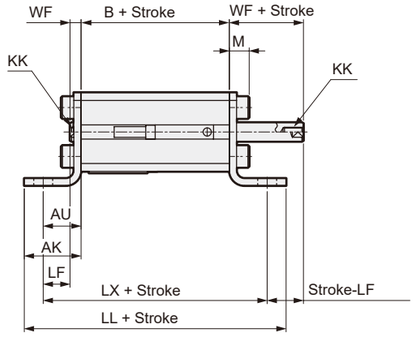
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

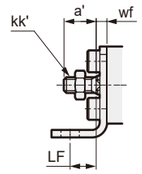
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)



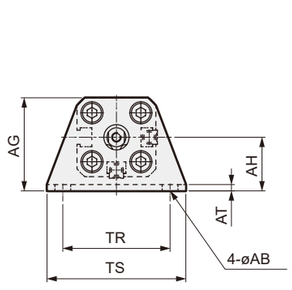


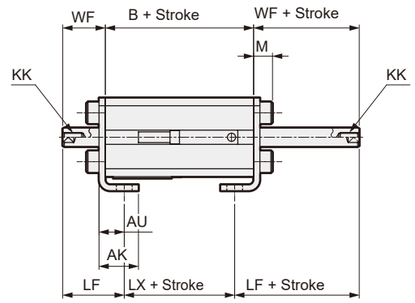
● For rod end male thread



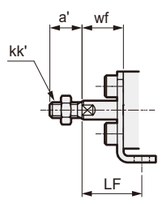
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	8.5	27	63	51	22	58	46	10.5	M5	3.5	8.5
ø16	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	27	63	51	22	58	46	12	M6	3.5	8.5
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	36	84	68	26	74	58	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	41	89	73	31	79	63	17.5	M10 × 1.25	5	11

● Axial Foot Type (Compact Type) (LB2)





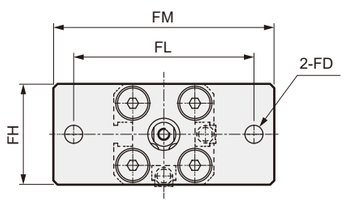
● For rod end male thread



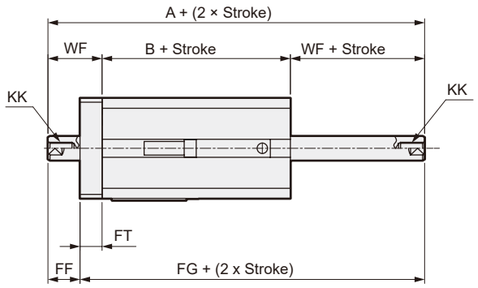
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LX	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	27	15	22	10	10.5	M5	13.5	19.5
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	27	15	22	10	12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	36	24	26	14	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	41	26	31	16	17.5	M10 × 1.25	15	22.5

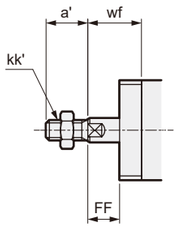
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)



● For rod end male thread

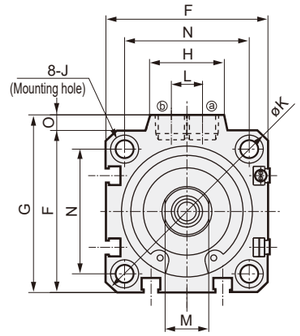


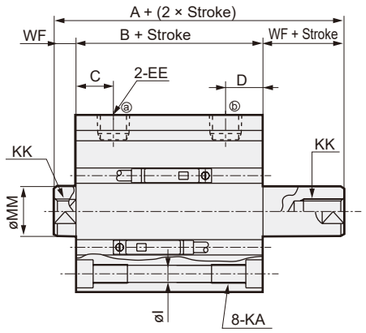


Code / Bore size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	B	FG	Without Switch A	B	FG	For male thread FF	a'	kk'	wf
ø12	4.5	25	45	55	5.5	8	M3 depth 6	13.5	54	27	46	49	22	41.0	8	10.5	M5	13.5
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	54	27	46	49	22	41	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	65	36	58.5	55	26	48.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	71	41	64	61	31	54	7	17.5	M10 × 1.25	15

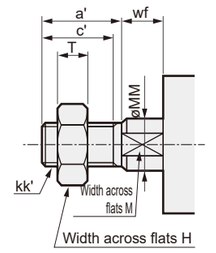
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-D (L)-32 to 100

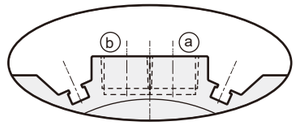




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Note: The positions for the left and right width across flats are unspecified.

Code / Bore Size (mm)	Dimension with switch A *1	B *1	Dimension without switch A *1	B *1	Common dimension C	D	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF *1
ø32	54.5	40.5	44.5	30.5	8	8	Rc1/8	45	49.5	24	5.5	9 Counterbore Depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	63	49	53	39	12	12	Rc1/8	52	57	24	5.5	9 Counterbore Depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	65	49	55	39	10.5	10.5	Rc1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	67	51	57	41	13	13	Rc1/4	77	84	33	8.7	14 Counterbore Depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	78.5	58.5	68.5	48.5	16	16	Rc3/8	98	104	38	10.5	17.5 Counterbore Depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	92	68	82	58	23	23	Rc3/8	117	123.5	38	10.5	17.5 Counter-bore depth 11	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

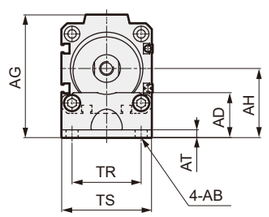
*1: When calculating A + (2 x stroke), B + stroke, and WF + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to P. 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

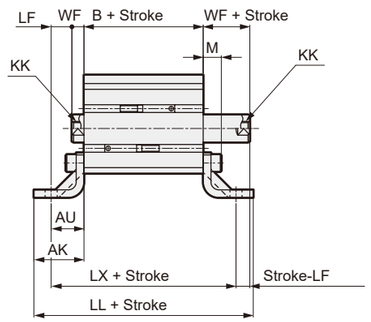
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	WF *1
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

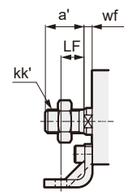
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot Type (LB)





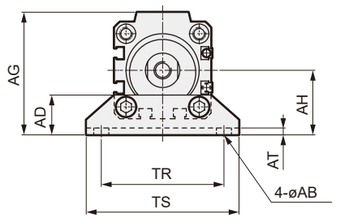
● For rod end male thread

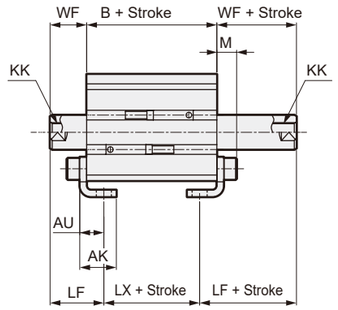


Code / Bore size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	40.5	88.5	72.5	30.5	78.5	62.5	23.5	M14 × 1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49	107	87	39	97	77	23.5	M14 × 1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	49	117	93	39	107	83	28.5	M18 × 1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	51	131	101	41	121	91	28.5	M18 × 1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	58.5	158.5	128.5	48.5	148.5	118.5	35.5	M22 × 1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	68	168	138	58	158	128	35.5	M26 × 1.5	8	27

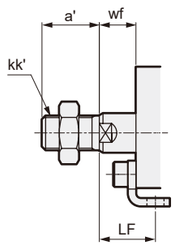
*1: If the value of B + stroke is less than or equal to the value below, LB cannot be selected.
ø80, ø100: 69 or less

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

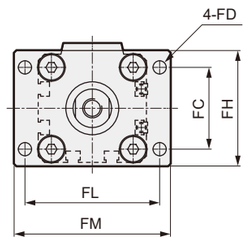


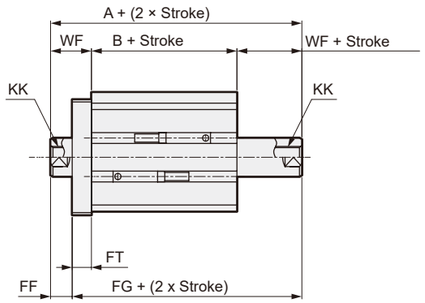
Code / Bore size (mm)	Common dimension										For female thread							For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LX	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	40.5	24.5	30.5	14.5	23.5	M14 × 1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	49	33	39	23	23.5	M14 × 1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	49	26	39	16	28.5	M18 × 1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	51	25	41	15	28.5	M18 × 1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	58.5	28.5	48.5	18.5	35.5	M22 × 1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	68	34	58	24	35.5	M26 × 1.5	18	35

*1: If the value of B + stroke is less than or equal to the value below, LB2 cannot be selected.
ø80: 72 or less ø100: 69 or less

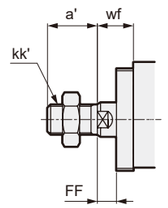
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)





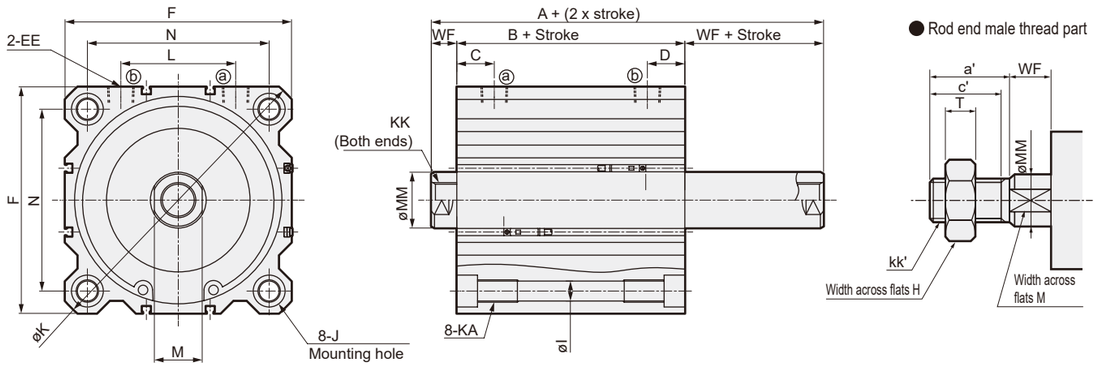
● For rod end male thread



Code / Bore size (mm)	Common dimension						For female thread										For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	With Switch FG	Without Switch A	Without Switch B	Without Switch FG	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	74.5	40.5	65.5	64.5	30.5	55.5	7	23.5	M14 × 1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	83	49	74	73	39	64	7	23.5	M14 × 1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	85	49	76	75	39	66	6	28.5	M18 × 1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	87	51	78	77	41	68	6	28.5	M18 × 1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	98.5	58.5	89.5	88.5	48.5	79.5	7	35.5	M22 × 1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	112	68	101	102	58	91	7	35.5	M26 × 1.5	18

Outline Dimension Drawing (Bore size: ø125 to ø160)

● SSD-D (L)-125 to 160



● Rod end male thread part

Note: The positions for the left and right width across flats are unspecified.

Code / Bore Size (mm)	Common dimension A	B	C	D	EE	F	I	J	K	KA	KK *2
ø125	104	72	23.5	23.5	Rc3/8	142	12.5	20 Counterbore Depth 13	190	M14 depth 25	M22 x 2.5 Depth 30 (22)
ø140	114	82	27	27	Rc3/8	158	12.5	20 Counterbore Depth 13	210	M14 depth 25	M22 x 2.5 Depth 30 (22)
ø160	125	91	30	30	Rc3/8	178	14.7	23 Counterbore depth 15.2	238	M16 depth 28	M24×3 depth 33 (24)

Code / Bore Size (mm)	Common dimension L	M	MM	N	WF
ø125	72	30	35	114	16
ø140	80	30	35	128	16
ø160	90	36	40	144	17

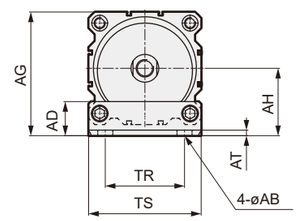
***1: For dimensions with each switch, refer to P. 674 to P. 681.**
*2: The value in parentheses for the KK dimension indicates the effective thread length on one side at 10 strokes.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

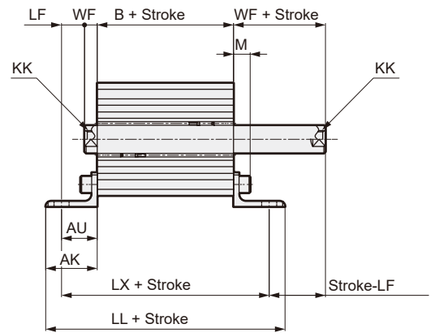
Rod End Male Thread Dimension Table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø125	45	42	46	M30 × 1.5	30	35	18	13
ø140	45	42	46	M30 × 1.5	30	35	18	13
ø160	50	47	55	M36 × 1.5	36	40	21	14

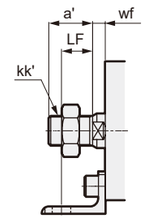
Outline Dimension Drawing (Bore size: ø125 to ø160)

● Axial Foot Type (LB)





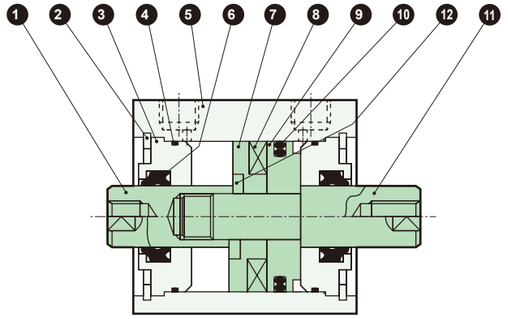
● For rod end male thread



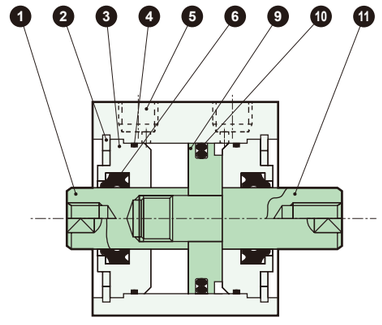
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	B	LL	LX	For male thread a'	kk'	wf	LF
ø125	19	43	156	85	65	7	45	100	142	21	M22 depth 30	16	29	72	202	162	45	M30 × 1.5	13	32
ø140	19	51	179	100	70	8	50	112	158	22	M22 depth 30	16	34	82	222	182	45	M30 × 1.5	13	37
ø160	19	52	195	106	73	10	53	118	178	26	M24 depth 33	17	36	91	237	197	50	M36 × 1.5	14	39

Internal Structure Diagram/Material (Bore size: ø12 to ø50)

● SSD-DL-12 to 50 (Double acting, Double rod type, With switch)



● SSD-D-12 to 50 (Double acting, Double rod type)

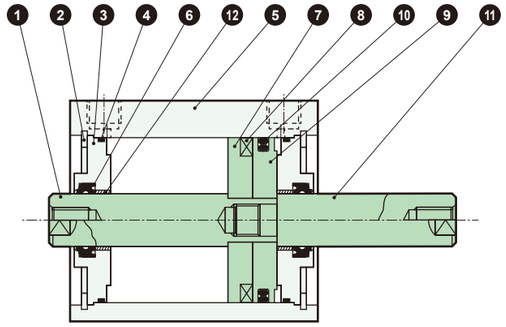


Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12, ø20, ø32, ø40: Aluminum alloy ø16, ø25, ø50: Special resin	ø12, 20, 32, 40: Chromate
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Piston Rod Ⓑ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
12	Spacer washer	Stainless Steel	ø25, 50 only

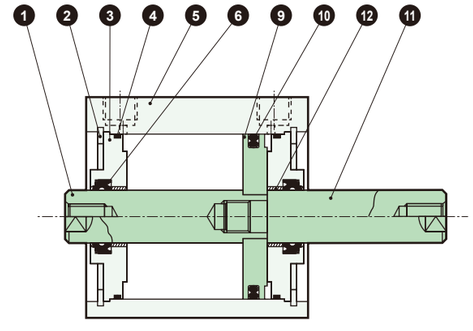
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

● SSD-DL-63 to 100 (Double acting, Double rod type, With switch)



● SSD-D-63 to 100 (Double acting, Double rod type)

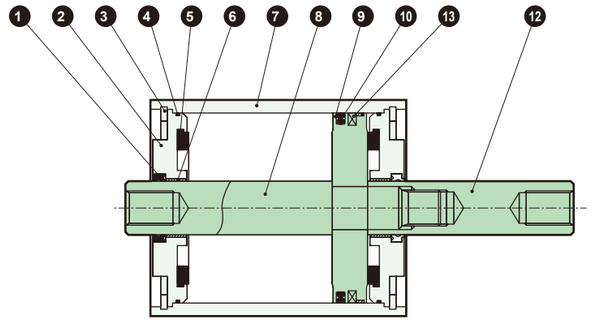


Part No.	Part Name	Material	Remarks
1	Piston Rod Ⓐ	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Piston Rod Ⓑ	Steel	Industrial Hard Chrome Plating
12	Bushing	Bearing Alloy	

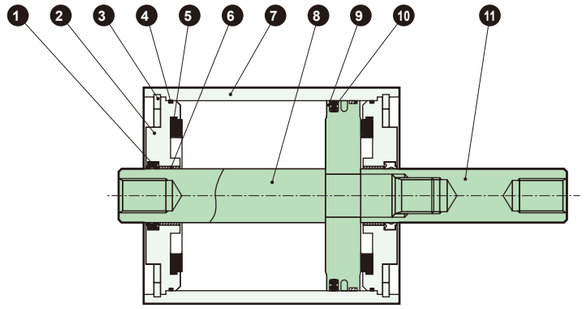
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø125 to ø160)

●SSD-DL-125 to 160 (Double acting, Double rod type, With switch)



●SSD-D-125 to 160 (Double acting, Double rod type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Packing	Nitrile Rubber		7	Cylinder Body	Aluminum Alloy	Hard Anodized
2	Rod Metal	Aluminum Alloy	Chromate	8	Piston Rod Ⓐ	Steel	Industrial Hard Chrome Plating
3	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	
4	Metal gasket	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
5	Cushion Rubber	Urethane Rubber		11	Piston Rod Ⓑ	Steel	Industrial Hard Chrome Plating
6	Bushing	Bearing Alloy		12	Magnet	Rubber	SSD-DL only

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

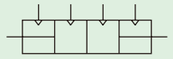
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, Back-to-Back Type

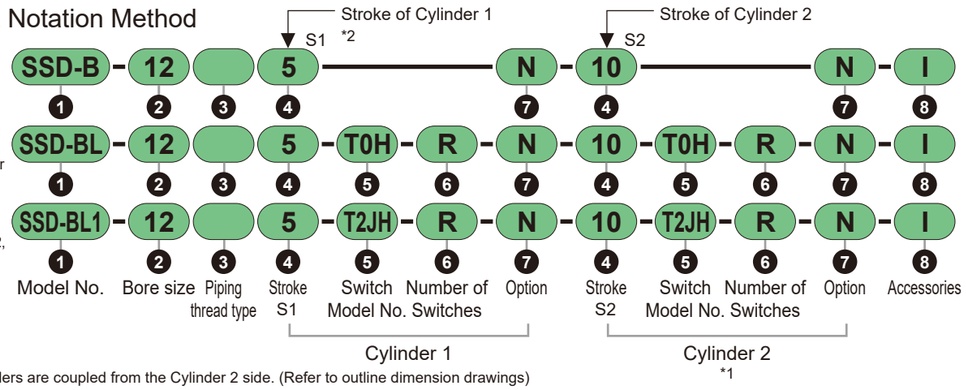
SSD-B Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method



*1: The two cylinders are coupled from the Cylinder 2 side. (Refer to outline dimension drawings) Pay attention to the mounting method and determine cylinders 1 and 2.

❶Model No.

Code	Contents
SSD-B	Double Acting, Back-to-Back Type
SSD-BL	Double Acting, Back-to-Back Type with Switch
SSD-BL1	Double acting, Back-to-back type, Off-delay type with T1□ switch (ø12, ø16)

❷Bore Size (mm)

Code	Contents	Code	Contents
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

❸Piping thread type

Code	Contents
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❹Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	

*1: For details regarding stroke, see P. 508.
*2: If the S1 stroke is less than or equal to the value in the table on the right, the length of the usable mounting bolts will differ from the standard. Please contact our sales department.

Bore	Without Switch	With Switch
	S1 Stroke	
ø20	10 or less	-
ø25	5 or less	-
ø32	5 or less	-
ø50	5 or less	-
ø63	15 or less	5 or less
ø80	20 or less	10 or less
ø100	10 or less	-

❺Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20/7 to 10	5 to 50	T8H□	T8V□	*5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12 to ø32.
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

*Lead wire length, connector specification

Code	Contents
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

❻Number of Switches

Code	Contents
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Option

*1

Code	Contents	
Blank	Rod end female thread	
N	Rod end male thread	
M	Piston Rod Material (Stainless Steel)	

*1: The option code "N" needs to be indicated for both S1 and S2 sides, but for other option codes, only the S2 side notation is required.

❽Accessories

Code	Contents	
I	Single Knuckle	
I2	Single Knuckle (Compact type)	
Y	Double Knuckle (Pin and retaining ring included)	
Y2	Double Knuckle (Compact type) (Pins and retaining rings included)	

*1: Selectable when rod end male thread "N" is selected.
*2: When selecting accessories, 2 pcs. will be included. If "IY" is selected, 1 pc. of each will be included.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-B-.....-XP5

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

SSD-B-.....-P4*

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW-T0H
5
Switch Model No.

Specifications

Item	SSD-B / SSD-BL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Back-to-Back Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0									
Min. Operating Pressure MPa	0.1							0.05		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	M5				Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$S_1=^{+1.0}_{0}$							$S_2=^{+1.0}_{0}$		
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30			50						
Intermediate Stroke *2		Every 1 mm									

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured.**
For the number of switches that can be mounted and the minimum stroke, refer to the table below.

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	84	188	102	188	122	208	140	226	160	246	178	264	-	-	-	-
ø16	108	224	132	224	154	246	178	270	202	294	226	318	-	-	-	-
ø20	160	278	188	346	218	376	248	406	276	434	306	464	-	-	-	-
ø25	212	402	246	436	282	472	318	508	354	544	388	578	460	650	530	720
ø32	282	518	330	566	378	614	426	662	472	708	520	756	616	852	710	946
ø40	404	698	462	756	518	812	578	870	634	928	690	984	804	1098	918	1212
ø50	682	1086	774	1178	866	1270	958	1362	1050	1454	1144	1548	1328	1732	1512	1916
ø63	1044	1626	1166	1748	-	-	1410	1992	-	-	1654	2236	1900	2482	2144	2726
ø80	1920	2778	2110	2968	-	-	2488	3348	-	-	2868	3730	3252	4114	3634	4500
ø100	2908	4074	3152	4320	-	-	3640	4810	-	-	4132	5302	4622	5796	5118	6292

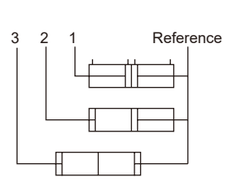
Theoretical Thrust Table

(Unit: N)

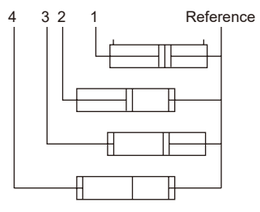
Bore size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

SSD-B Usage Example

When combining same strokes. 3 positions can be taken.

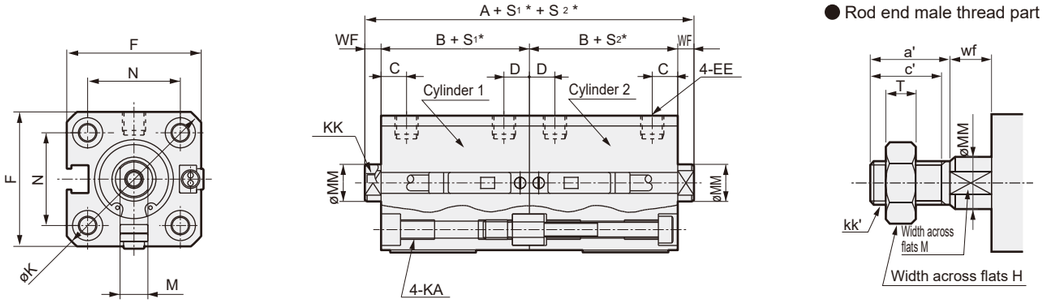


When combining different strokes. 4 positions can be taken.



Outline dimension drawing (bore size: ø12, ø16)

● SSD-B(L) -12/16



*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø12	51	22	41	17	5.5	5.5	M5	25	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	51	22	41	17	5.5	5.5	M5	29	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5

*1: When calculating A + S 1 + S 2, B + S 1, and B + S 2 dimensions for intermediate strokes, do not use the intermediate stroke values for the strokes; instead, use the values of the standard strokes above them, respectively.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

*2: In the outline dimension table above, if the stroke S1 or S2 of ø12 or ø16 with a switch is 5 mm, then (B+S1), (B+S2), and (A+S1+S2) are as shown in the table below.

Code / Bore Size	Condition	B+S1	B+S2	A+S1+S2
ø12 ø16	When S 1 = 5	32	22+S2	61+S2
	When S 2 = 5	22+S1	32	61+S1
	When S 1 = S 2 = 5	32	32	71

The S1 and S2 dimensions for intermediate strokes are the same as the standard strokes above them.

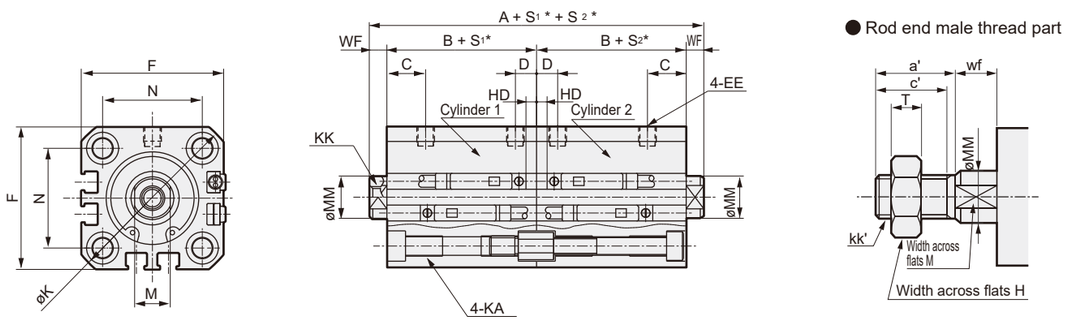
***3: For dimensions with each switch, refer to P. 674 to 681.**
***4: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5

Outline dimension drawing (bore size: ø20, ø25)

● SSD-B (L)-20/25



*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø20	68	29.5	48	19.5	8	5.5	M5	36	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	75	32.5	55	22.5	11	6	M5	40	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

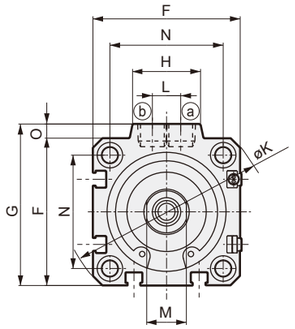
*1: When calculating A + S 1 + S 2, B + S 1, and B + S 2 dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to P. 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

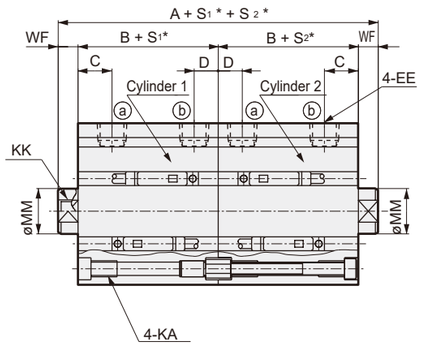
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

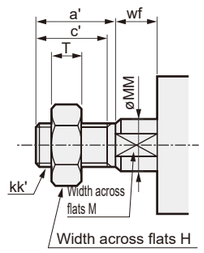
Outline Dimension Drawing (Bore size: ø32 to ø100)

●SSD-B (L)-32 to 100

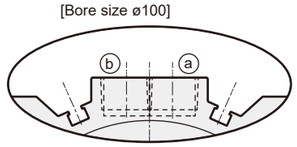




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	FB	G	H	J	K
ø32	80	33	60	23	8	8	Rc1/8	45	20.5	49.5	24	9 Counterbore depth 5.5	60
ø40	93	39.5	73	29.5	12	8.5	Rc1/8	52	27.5	57	24	9 Counterbore depth 5.5	69
ø50	97	40.5	77	30.5	10.5	10.5	Rc1/4	64	28.5	71	33	11 Counterbore Depth 6.5	86
ø63	108	46	88	36	13	11	Rc1/4	77	28.5	84	33	14 Counterbore depth 9	103
ø80	127	53.5	107	43.5	16	13	Rc3/8	98	28.5	104	38	17.5 Counterbore depth 11	132
ø100	150	63	130	53	23	15	Rc3/8	117	28.5	123.5	38	17.5 Counterbore depth 11	156

Code / Bore Size (mm)	Common dimension KA	KK	L	M	MM	N	O	WF
ø32	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A + S1 + S2, B + S1, and B + S2 dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For dimensions with each switch, refer to P. 674 to P. 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

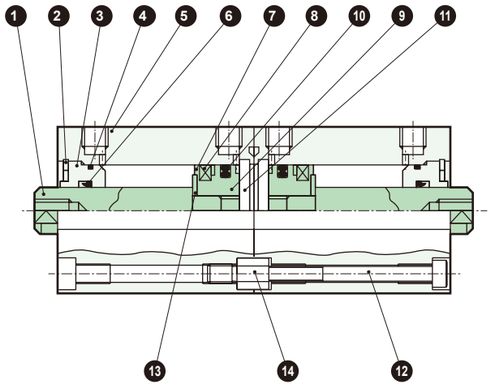
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

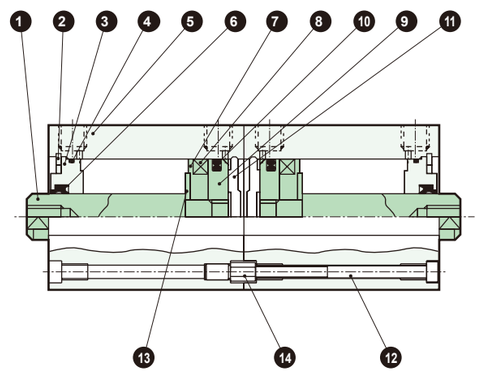
MEMO

Internal Structure Diagram/Material (Bore size: ø12 to ø25)

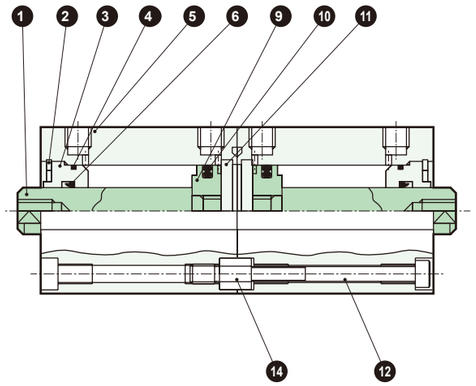
●SSD-BL-12 to 25 (Double acting, Back-to-back type, With switch)



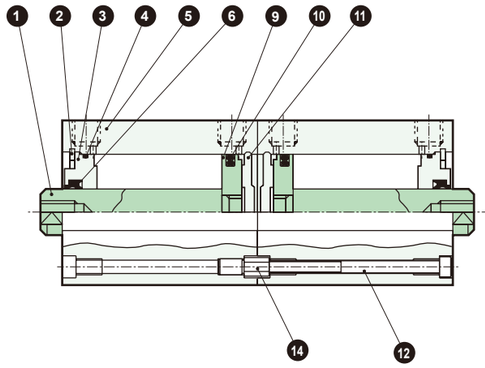
●SSD-BL-32 to 50 (Double acting, Back-to-back type, With switch)



●SSD-B-12 to 25 (Double acting, Back-to-back type)



●SSD-B-32 to 50 (Double acting, Back-to-back type)

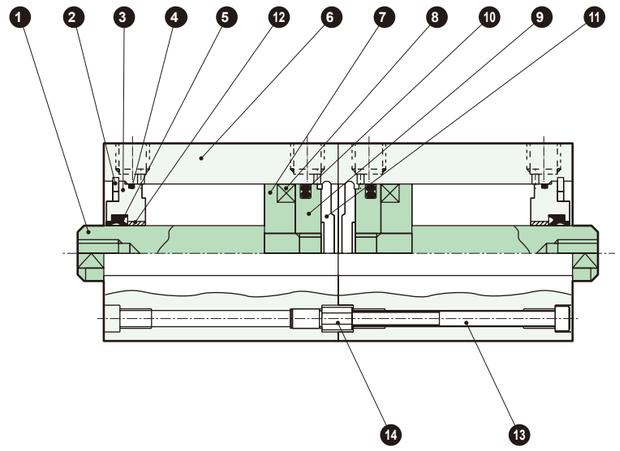


Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12: Aluminum alloy ø16 to ø50: Special resin	ø12: Chromate
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
12	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
13	Spacer washer	Stainless Steel	
14	Connector	Steel	Zinc Chromate

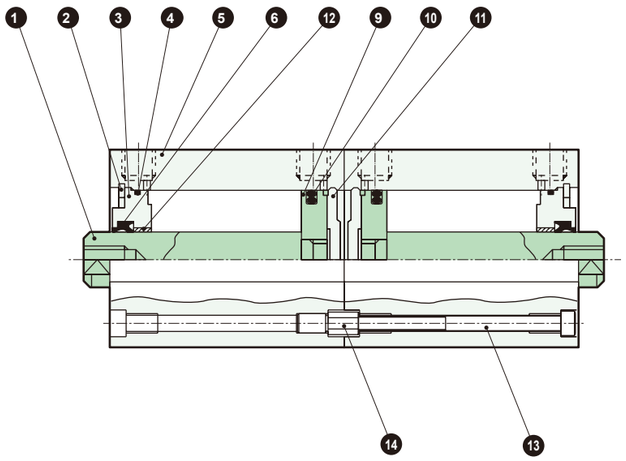
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

●SSD-BL-63 to 100 (Double acting, Back-to-back type, With switch)



●SSD-B-63 to 100 (Double acting, Back-to-back type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
13	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
14	Connector	Steel	Zinc Chromate

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



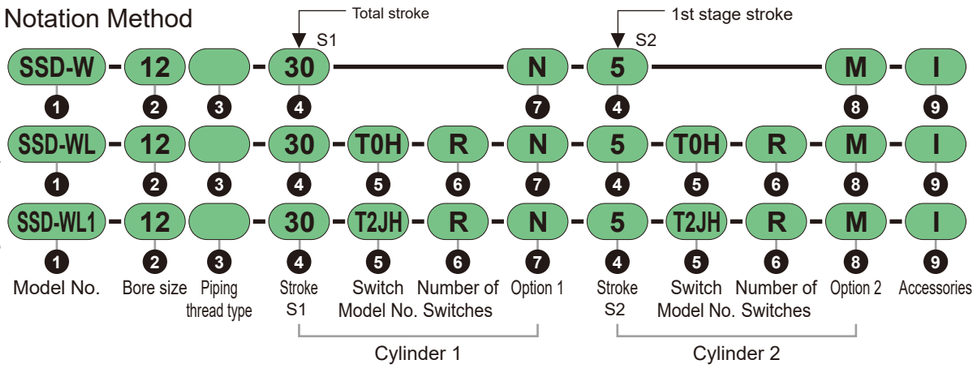
Compact Cylinder Double Acting, Tandem Type

SSD-W Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

RoHS

Model No. Notation Method



Note: As two cylinders are fastened at four positions from cylinder 2 (head side), they cannot be mounted at the head side. Head-side mounting is supported by custom order, so please request separately.

❶Model No.

Code	Content
SSD-W	Double Acting, Two-Stage Type
SSD-WL	Double Acting, Tandem Type with Switch
SSD-WL1	Double acting/two-stage, off-delay, with T1□ switch (ø12, ø16)

❷Bore Size (mm)

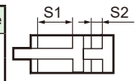
Code	Content	Code	Content
12	ø12	40	ø40
16	ø16	50	ø50
20	ø20	63	ø63
25	ø25	80	ø80
32	ø32	100	ø100

❸Piping thread type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❹Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	



Note: For details on stroke, please refer to P. 518.

❺Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*7

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12 to ø32.
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

❻Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Option 1

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❽Option 2

Code	Content
M	Piston Rod Material (Stainless Steel)

Note: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

❾Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-T2	Fluorine Packing Type
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-W – ..... – XP5

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

SSD-W – ..... – P4*

*Please contact us for details.

Switch Single Unit Model No. Notation Method

SW – T0H
5
Switch Model No.

Specifications

Item	SSD-W SSD-WL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Two-Stage Type									
Operating Fluid	Compressed Air									
Max. Operating Pressure MPa	1.0 (Note)									
Min. Operating Pressure MPa	0.15							0.1		
Proof pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	M5				Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	S_1= +1.0 0							S_2= 0 -1.5		
Operating Piston Speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Note: If S1 and S2 are the same, use with a maximum operating pressure of 0.5 MPa.

Stroke

Stroke (mm)		Applicable Bore									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●
	40				●	●	●	●	●	●	●
	50				●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1									
Maximum Stroke (mm)		30			50						
Intermediate Stroke *2		Every 1 mm									

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	88	191	104	191	122	210	138	227	156	246	163	267	-	-	-	-
ø16	122	237	144	237	164	258	186	281	208	304	230	324	-	-	-	-
ø20	194	305	218	372	249	401	280	430	309	457	340	486	-	-	-	-
ø25	234	416	264	446	296	478	328	510	360	542	391	572	454	636	516	698
ø32	306	535	374	602	441	670	510	738	575	804	644	872	782	1006	919	1139
ø40	466	752	520	806	572	858	626	912	680	966	732	1028	838	1124	944	1230
ø50	757	1145	849	1237	941	1328	1033	1422	1125	1512	1218	1605	1402	1789	1589	1977
ø63	1279	1684	1409	2052	-	-	1669	2312	-	-	1929	2572	2191	2834	2451	3094
ø80	2332	2675	2536	2879	-	-	2942	3808	-	-	3348	4214	3756	4632	4162	5038
ø100	3633	4827	3916	5105	-	-	4480	5629	-	-	5046	6225	5610	6779	6176	7335

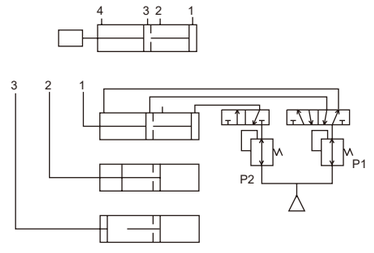
SSD-W Usage Example

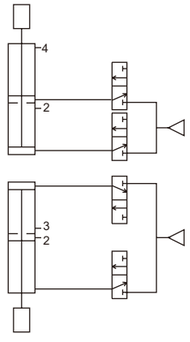
Set the pressure to P2 > P1.

● First stage push
With port 4 pressurized, pressurize port 1.

● Second stage push
With port 1 pressurized, pressurize port 3.

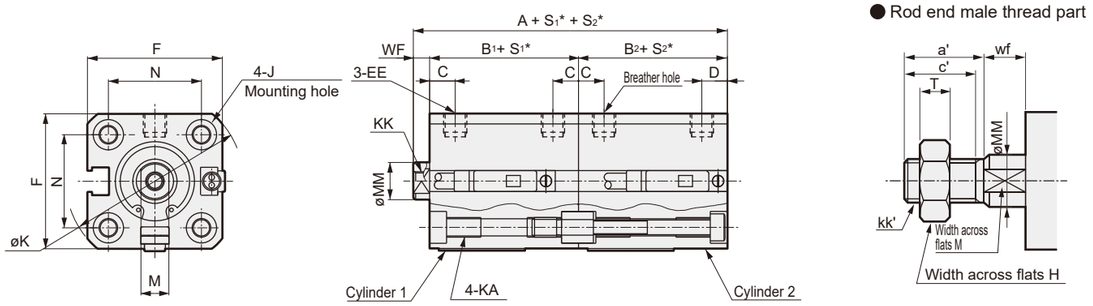
Depending on the direction of the load, P2 may not equal P1. In the case of single-acting use due to natural fall of the load, ports 2 and 4 in the right diagram, and ports 2 and 3 in the right diagram, become breather ports. Basically, Port 2, which does not require piping, has a plug with a filter.





Outline dimension drawing (bore size: ø12, ø16)

● SSD-W (L)-12/16



● Rod end male thread part

*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	B1 *1	B2 *1	Dimension without switch A *1	B1 *1	B2 *1	C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø12	52.5	27	22	42.5	22	17	5.5	5.5	M5	25	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	52.5	27	22	42.5	22	17	5.5	5.5	M5	29	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5

*1: When calculating A + S_1 + S_2, B_1 + S_1, and B_2 + S_2 dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For ø12 and ø16 with a switch, if stroke S_2 is 5 mm, (B_2 + S_2) and (A + S_1 + S_2) are as shown in the table below.

Bore size	A+S_1+S_2	B_1 +S_1	B_2 +S_2
ø12	62.5+S_1	27+S_1	32
ø16	62.5+S_1	27+S_1	32

S_1 and S_2 for intermediate strokes are the same dimensions as the standard stroke above them.

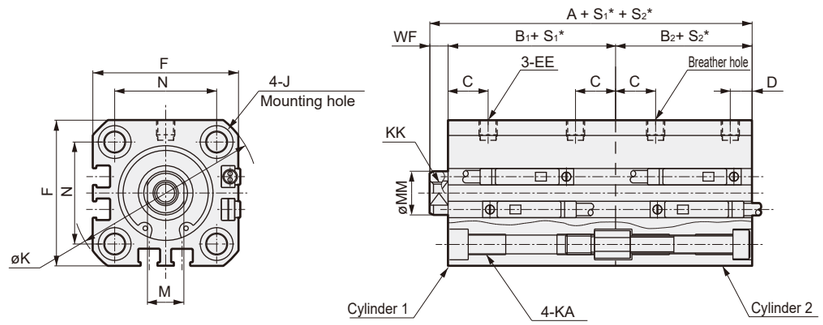
***3: For dimensions with each switch, refer to P. 674 to P. 681.**
***4: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

● Rod end male thread part dimension table

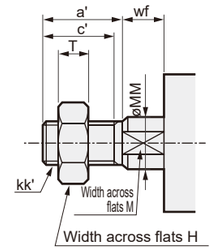
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5

Outline dimension drawing (bore size: ø20, ø25)

● SSD-W (L)-20/25



● Rod end male thread part



*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	B1 *1	B2 *1	Dimension without switch A *1	B1 *1	B2 *1	C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø20	70	36	29.5	50	26	19.5	8	5.5	M5	36	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	78.5	41	32.5	58.5	31	22.5	11	6	M5	40	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

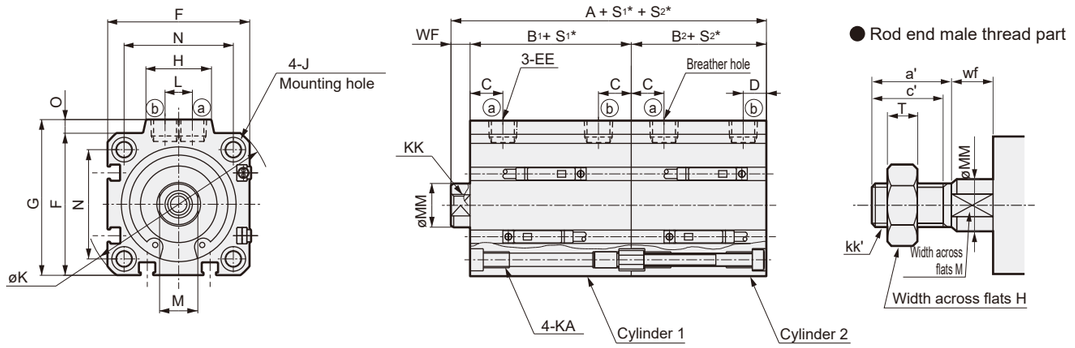
*1: When calculating A + S_1 + S_2, B_1 + S_1, and B_2 + S_2 dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to P. 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

● Rod end male thread part dimension table

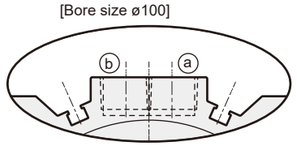
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Outline Dimension Drawing (Bore size: ø32 to ø100)

●SSD-W (L)-32 to 100



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

*: S1 = Stroke of Cylinder 1, S2 = Stroke of Cylinder 2

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B1 *1	Dimension with switch B2 *1	Dimension without switch A *1	Dimension without switch B1 *1	Dimension without switch B2 *1	C	D	EE	F	G	H	J	K	KA	KK	L	M	MM	N	O	WF
ø32	80.5	40.5	33	60.5	30.5	23	8	8	Rc1/8	45	49.5	24	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	95.5	49	39.5	75.5	39	29.5	12	8.5	Rc1/8	52	57	24	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	97.5	49	40.5	77.5	39	30.5	10.5	10.5	Rc1/4	64	71	33	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	105	51	46	85	41	36	13	11	Rc1/4	77	84	33	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	122	58.5	53.5	102	48.5	43.5	16	13	Rc3/8	98	104	38	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	143	68	53	123	58	53	23	15	Rc3/8	117	123.5	38	17.5 Counterbore depth 11	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A+S1+S2, B1+S1+B2+S2 dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it for calculation.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For dimensions with each switch, refer to P. 674 to P. 681.**

***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

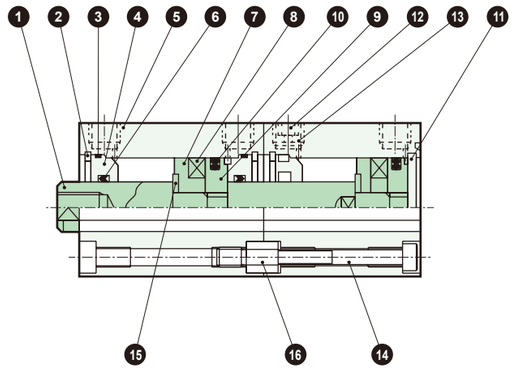
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

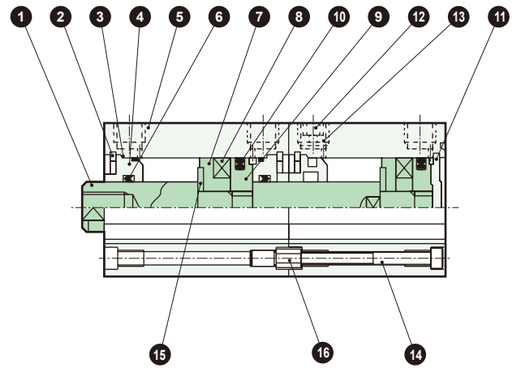
MEMO

Internal Structure Diagram/Material (Bore size: ø12 to ø25)

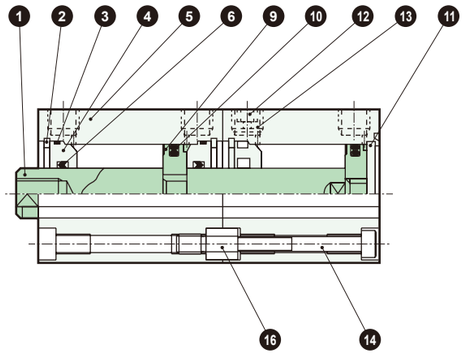
●SSD-WL-12 to 25 (Double acting, 2-stage type, With switch)



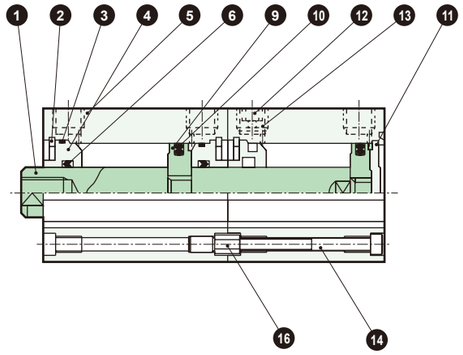
●SSD-WL-32 to 50 (Double acting, 2-stage type, With switch)



●SSD-W-12 to 25 (Double acting, 2-stage type)



●SSD-W-32 to 50 (Double acting, 2-stage type)



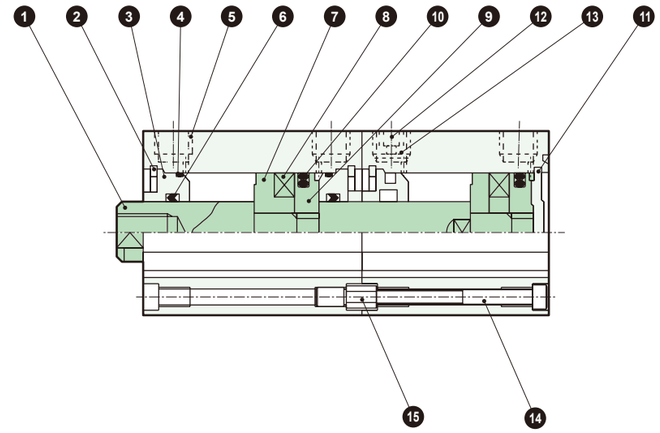
Part No.	Part Name	Material	Remarks
1	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø12: Aluminum alloy ø16 to ø50: Special resin	ø12: Chromate
8	Magnet	Plastic	

Part No.	Part Name	Material	Remarks
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
12	Plug	Stainless Steel	
13	Stainless Steel Wire Mesh	Stainless Steel	
14	Hexagon Socket Head Cap Screw	Steel	Black Oxide
15	Spacer washer	Stainless Steel	
16	Connector	Steel	

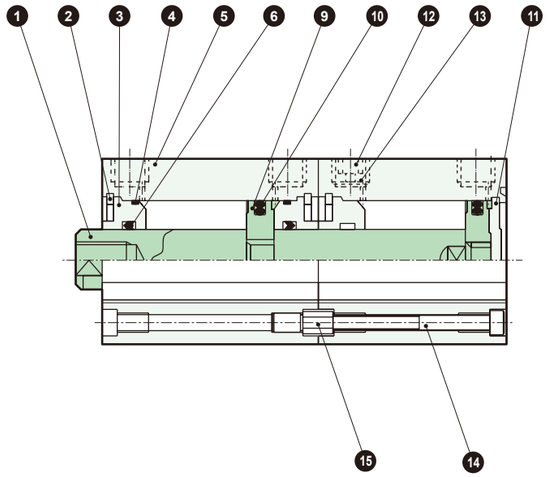
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

●SSD-WL-63 to 100 (Double acting, 2-stage type, With switch)



●SSD-W-63 to 100 (Double acting, 2-stage type)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	Aluminum Alloy	Alumite
4	Rod Metal Gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	Aluminum Alloy	Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Plug	Stainless Steel	
13	Stainless Steel Wire Mesh	Stainless Steel	
14	Hexagon Socket Head Cap Screw	Steel	Black Oxide
15	Connector	Steel	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder Double Acting, Non-rotating Type

SSD-M Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-M – 12 – 5 – N – LB – I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD-ML – 12 – 5 – T0H – R – N – LB – I
1 2 3 4 5 6 7 8 9

Off-delay type with T1* switch
(ø12, ø16 only)

SSD-ML1 – 12 – 10 – T2JH – R – N – LB – I
1 2 3 4 5 6 7 8 9

1 Model No. 2 Bore size 3 Piping thread type 4 Stroke 5 Switch Model No. 6 Number of Switches 7 Option 8 Mounting bracket 9 Accessories

1 Model No.

Code	Content
SSD-M	Double Acting, Non-Rotating Type
SSD-ML	Double Acting, Non-rotating Type with Switch
SSD-ML1	Double acting, Non-rotating type, Off-delay type with T1□ switch (ø12, ø16)

2 Bore Size (mm)

Code	Content	Code	Content
12	ø12	32	ø32
16	ø16	40	ø40
20	ø20	50	ø50
25	ø25	63	ø63

3 Piping thread type

Code	Content
Blank	M5 thread (ø12 to ø25)
	Rc thread (ø32 to ø63)
NN	NPT thread (custom order) (ø32 to ø63)
GN	G thread (custom order) (ø32 to ø63)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø12 to ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63	1 to 50	

Note: For details on stroke, please refer to P. 528.

5 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	*4
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*5

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*7

*7: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: AC magnetic field resistant switches cannot be mounted on ø12, ø16.
*5: T8□ switches cannot be mounted on ø12 to ø32.
*6: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	
*1 M	Piston Rod Material (Stainless Steel)	

*1: The piston rod material for ø12 to ø25 is stainless steel as standard. C-type retaining ring changes from steel to stainless steel. The nut material for rod end male thread type will be stainless steel.

8 Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (Pin and Retaining Ring Attached)	
CB2	Clevis bracket (compact) (pin and snap ring attached)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 531, 532, 535, and 536 for outline dimension drawings. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-M – ..... – XP5

Switch Single Unit Model No. Notation Method

SW – T0H
5
Switch Model No.

Specifications

Item		SSD-M SSD-ML (with switch)							
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Max. Operating Pressure	MPa	1.0							
Min. Operating Pressure	MPa	0.1							0.05
Proof pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (No freezing)							
Port Size		M5				Rc1/8		Rc1/4	
Stroke tolerance	mm	+1.0 0							
Operating Piston Speed	mm/s	50 to 500							50 to 300
Cushion		None							
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)							
Non-rotation accuracy		±2°		±1.5°			±1°		
Allowable Absorbed Energy	J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12

Stroke

Stroke (mm)		Applicable Bore							
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	5	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	
	30	●	●	●	●	●	●	●	●
	40				●	●	●	●	●
	50				●	●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		30			50				
Intermediate Stroke *2		Every 1 mm							

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø12	5	5	20	20
ø16	5	5	20	20
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15

Note: Less than 10mm with 2-color display, off-delay, AC magnetic field proof, T1□, T8□ switches is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø12	44	94	52	94	61	103	69	111	78	120	80	122	—	—	—	—
ø16	58	114	69	114	79	124	90	135	101	146	112	157	—	—	—	—
ø20	76	131	88	163	101	176	114	189	126	201	139	214	—	—	—	—
ø25	102	193	117	208	133	224	149	240	165	256	180	271	212	303	243	334
ø32	166	280	188	302	210	324	232	346	253	367	275	389	319	433	362	476
ø40	210	353	237	380	263	406	290	433	317	460	343	486	396	539	449	592
ø50	341	535	383	577	425	619	467	661	509	703	552	746	636	830	720	914
ø63	507	786	562	841	—	—	672	951	—	—	782	1061	893	1172	1003	1282

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	23.6	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	37.8	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3

Mounting Bracket Model No. Notation Method

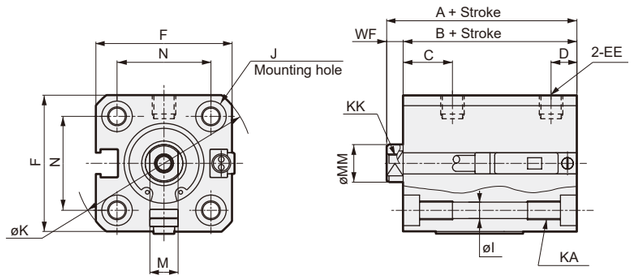
Bore Size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Foot (LB)	SSD-LB-12	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63
Foot (LB2)	SSD-LB2-12	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63
Flange (FA/FB)	SSD-FA-12	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63
Double Clevis (CB)	SSD-CB-12	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63
Double knuckle clevis (CB2)	SSD-CB2-12	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63

Note: Foot type mounting brackets are 2 pcs/set.

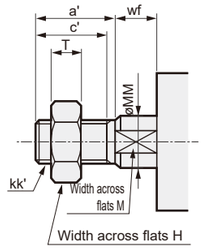
Outline Dimension Drawing (Bore size: ø12 to ø25)

● SSD-M (L)-12 to 25

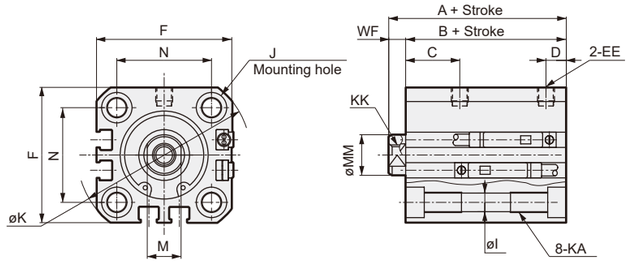
ø12, ø16



● Rod end male thread part



ø20, ø25



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	30.5	27	25.5	22	10.5	5.5	M5	25	3.5	6.5 Counterbore depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	30.5	27	25.5	22	10.5	5.5	M5	29	3.5	6.5 Counterbore depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	39	34.5	29	24.5	13	5.5	M5	36	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	42.5	37.5	32.5	27.5	16	6	M5	40	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 Depth 12	10	12	28	5

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

*2: For ø12 and ø16 with a switch and a 5 mm stroke, the (A + stroke) and (B + stroke) dimensions are as shown in Table 1.

***3: For dimensions with each switch, refer to P. 674 to 681.**

***4: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

Table 1 *2

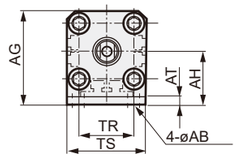
Bore size	A + Stroke	B + Stroke
ø12	40.5	37
ø16	40.5	37

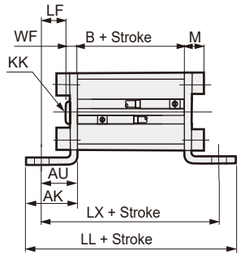
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

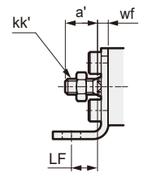
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Axial Foot Type (LB)





● For rod end male thread

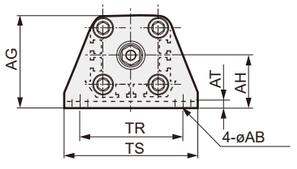


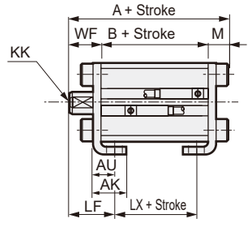
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	6	29.5	17	18	2.3	12	16	25	6.3	M3 depth 6	3.5	8.5	27	63	51	22	58	46	10.5	M5	3.5	8.5
ø16	6	33.5	19	18	2.3	12	16	29	6.3	M4 depth 8	3.5	8.5	27	63	51	22	58	46	12	M6	3.5	8.5
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	34.5	82.5	66.5	24.5	72.5	56.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	37.5	85.5	69.5	27.5	75.5	59.5	17.5	M10 × 1.25	5	11

*1: For 5 strokes with switch, the dimensions are as follows.

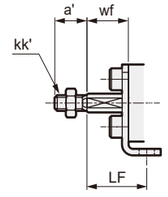
Bore size	For female thread B	LL	LX
ø12	32	68	56
ø16	32	68	56

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



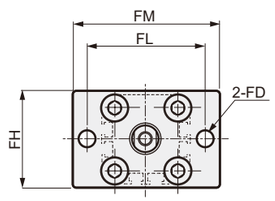
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø12	5	29.5	17	12.5	2	8	34	44	6	M3 depth 6	13.5	19.5	46.5	27	15	41.5	22	10	10.5	M5	13.5	19.5
ø16	5	33.5	19	13	2	8	38	48	6	M4 depth 8	13.5	19.5	46.5	27	15	41.5	22	10	12	M6	13.5	19.5
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	58.2	34.5	22.5	48.2	24.5	12.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	61.7	37.5	22.5	51.7	27.5	12.5	17.5	M10 × 1.25	15	22.5

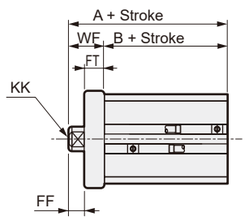
*1: For 5 strokes with switch, the dimensions are as follows.

Bore size	For female thread A	B	LX
ø12	51.5	32	20
ø16	51.5	32	20

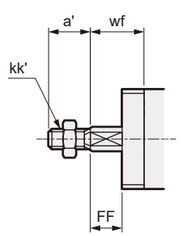
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Rod Side Flange Type (FA)





● For rod end male thread

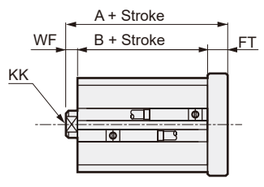


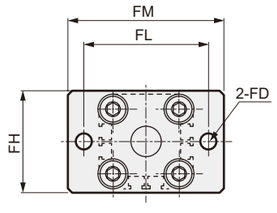
Code / Bore size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread FF	a'	kk'	wf
ø12	4.5	25	45	55	5.5	8	M3 depth 6	13.5	40.5	27	35.5	22	8	10.5	M5	13.5
ø16	4.5	30	45	55	5.5	8	M4 depth 8	13.5	40.5	27	35.5	22	8	12	M6	13.5
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	49	34.5	39	24.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	52.5	37.5	42.5	27.5	7	17.5	M10 × 1.25	15

*1: For 5 strokes with switch, the dimensions are as follows.

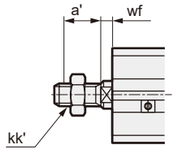
Bore size	For female thread A	B
ø12	45.5	32
ø16	45.5	32

● Head Side Flange Type (FB)





● For rod end male thread



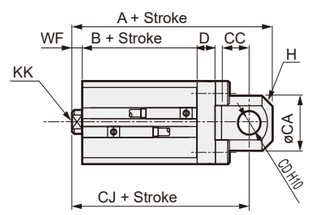
Code / Bore size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	For male thread a'	kk'	wf
ø12	4.5	25	45	55	5.5	M3 depth 6	3.5	36	27	31	22	10.5	M5	3.5
ø16	4.5	30	45	55	5.5	M4 depth 8	3.5	36	27	31	22	12	M6	3.5
ø20	6.6	39	48	60	8	M5 depth 7	4.5	47	34.5	37	24.5	14	M8	4.5
ø25	6.6	42	52	64	8	M6 Depth 12	5	50.5	37.5	40.5	27.5	17.5	M10 × 1.25	5

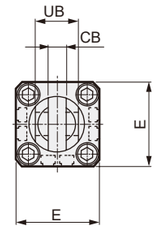
*1: For 5 strokes with switch, the dimensions are as follows.

Bore size	For female thread A	B
ø12	41	32
ø16	41	32

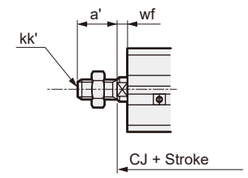
Outline Dimension Drawing (Bore size: ø12 to ø25)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

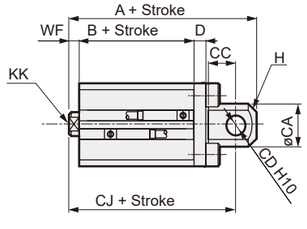


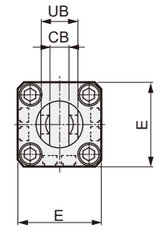
Code / Bore size (mm)	Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	13.5	6.5 +0.4 +0.1	7	5	5	25	C1.5	12 -0.1 -0.4	M3 depth 6	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	3.5	44.5	39.5
ø16	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	51.5	27	45.5	46.5	22	40.5	12	M6	3.5	45.5	40.5
ø20	24	8 +0.4 +0.1	12	10	8	36	C4	19 -0.1 -0.4	M5 depth 7	4.5	72	34.5	62	62	24.5	52	14	M8	4.5	62	52
ø25	27.5	10 +0.4 +0.1	16	12	8	40	C5	21 -0.1 -0.4	M6 Depth 12	5	81.5	37.5	69.5	71.5	27.5	59.5	17.5	M10 × 1.25	5	69.5	59.5

*1: For 5 strokes with switch, the dimensions are as follows.

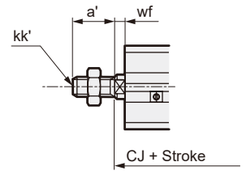
Bore size	For female thread A	B	CJ	For male thread CJ
ø12	55.5	32	49.5	49.5
ø16	56.5	32	50.5	50.5

● Double clevis type (Compact type) (CB2)





● For rod end male thread



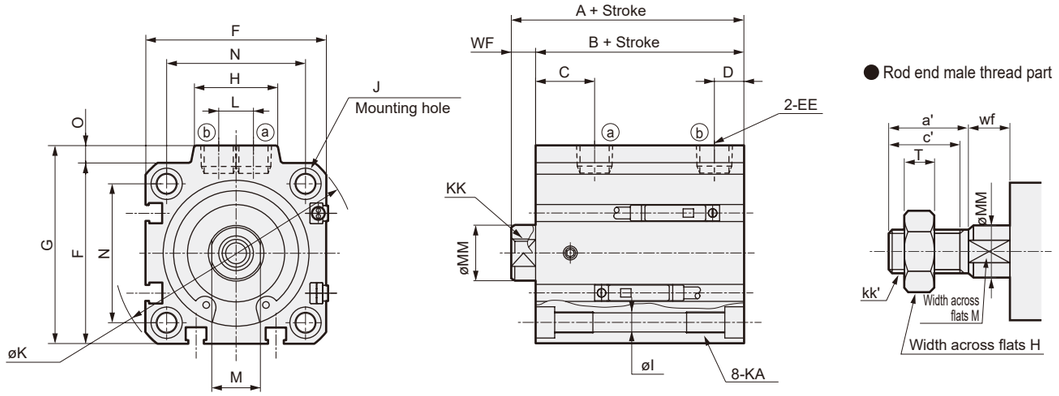
Code / Bore size (mm)	Common dimension CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø12	12	5 +0.4 +0.1	7	5	4	25	C1.5	10 -0.1 -0.3	M3 depth 6	3.5	50.5	27	44.5	45.5	22	39.5	10.5	M5	3.5	44.5	39.5
ø16	15	6.5 +0.4 +0.1	8	5	5	29	C2	12 -0.1 -0.4	M4 depth 8	3.5	51.5	27	45.5	46.5	22	40.5	12	M6	3.5	45.5	40.5
ø20	20	8 +0.4 +0.1	12	8	5	36	C4	16 -0.1 -0.3	M5 depth 7	4.5	66	34.5	57	56	24.5	47	14	M8	4.5	57	47
ø25	24	10 +0.4 +0.1	14	10	5	40	C5	20 -0.1 -0.3	M6 Depth 12	5	72.5	37.5	62.5	62.5	27.5	52.5	17.5	M10 × 1.25	5	62.5	52.5

*1: For 5 strokes with switch, the dimensions are as follows.

Bore size	For female thread A	B	CJ	For male thread CJ
ø12	55.5	32	49.5	49.5
ø16	56.5	32	50.5	50.5

Outline dimension drawing (bore size: ø32 to ø63)

● SSD-M (L)-32 to 63



Code / Bore Size (mm)	Dimension with switch A	Dimension with switch B	Dimension without switch A *1	Dimension without switch B *1	C	D	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	50	43	40	33	18	8	Rc1/8	45	49.5	24	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	51.5	44.5	41.5	34.5	17	8.5	Rc1/8	52	57	24	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	53.5	45.5	43.5	35.5	15.5	10.5	Rc1/4	64	71	33	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	18	20	50	7	8
ø63	59	51	49	41	18	11	Rc1/4	77	84	33	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	15	18	20	60	7	8

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to P. 381.**

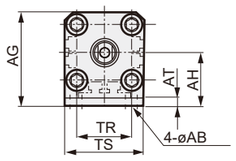
● Rod end male thread part dimension table

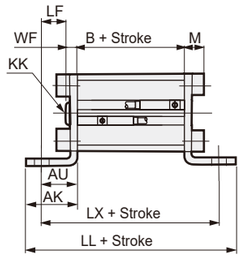
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	18	20	11	5
ø63	28.5	26	27	M18 × 1.5	18	20	11	5

Outline dimension drawing (bore size: ø32 to ø63)

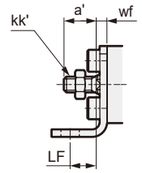
● Axial Foot Type (LB)

• ø32

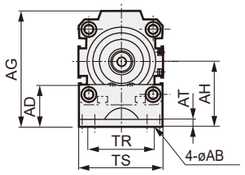


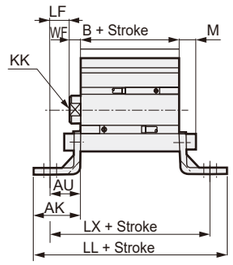


● For rod end male thread

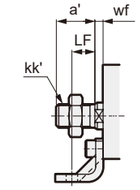


• ø40 to ø63





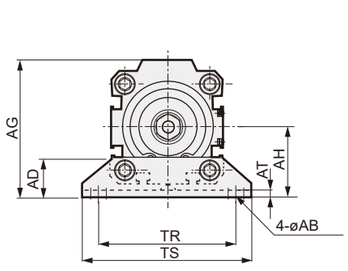
● For rod end male thread

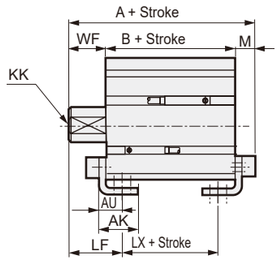


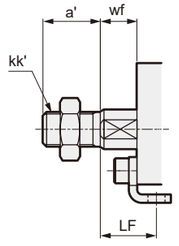
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	43	91	75	33	81	65	23.5	M14 × 1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	44.5	102.5	82.5	34.5	92.5	72.5	23.5	M14 × 1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	45.5	113.5	89.5	35.5	103.5	79.5	28.5	M18 × 1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	51	131	101	41	121	91	28.5	M18 × 1.5	5	20

● Axial Foot Type (Compact Type) (LB2)

● For rod end male thread



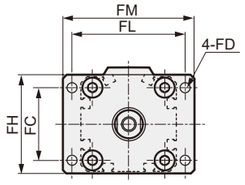


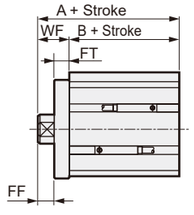


Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	69.2	43	27	59.2	33	17	23.5	M14 × 1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	70.7	44.5	28.5	60.7	34.5	18.5	23.5	M14 × 1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	74.7	45.5	22.5	64.7	35.5	12.5	28.5	M18 × 1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	82.2	51	25	72.2	41	15	28.5	M18 × 1.5	15	28

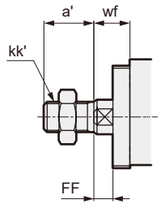
Outline dimension drawing (bore size: ø32 to ø63)

● Rod Side Flange Type (FA)



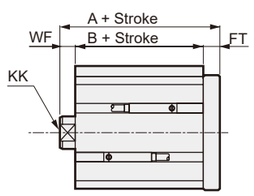


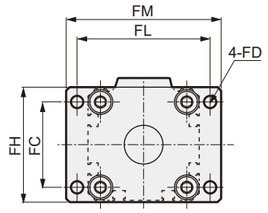
● For rod end male thread



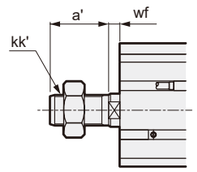
Code	Common dimension						For female thread							For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	60	43	50	33	7	23.5	M14 × 1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	61.5	44.5	51.5	34.5	7	23.5	M14 × 1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	63.5	45.5	53.5	35.5	6	28.5	M18 × 1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	69	51	59	41	6	28.5	M18 × 1.5	15

● Head Side Flange Type (FB)





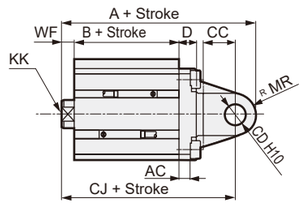
● For rod end male thread

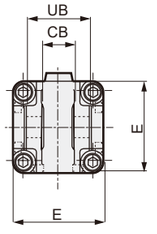


Code	Common dimension						For female thread						For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	
ø32	34	5.5	48	56	65	8	M8 depth 13	7	58	43	48	33	23.5	M14 × 1.5	5	
ø40	40	5.5	54	62	72	8	M8 depth 13	7	59.5	44.5	49.5	34.5	23.5	M14 × 1.5	5	
ø50	50	6.6	67	76	89	9	M10 depth 15	8	62.5	45.5	52.5	35.5	28.5	M18 × 1.5	5	
ø63	60	9	80	92	108	9	M10 depth 15	8	68	51	58	41	28.5	M18 × 1.5	5	

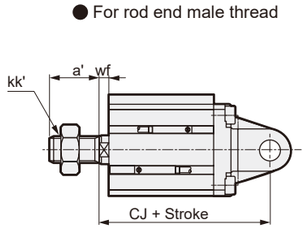
Outline dimension drawing (bore size: ø32 to ø63)

● Double Knuckle Clevis Type (CB)



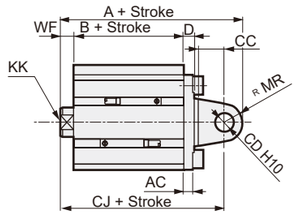


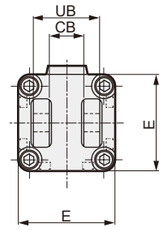
● For rod end male thread



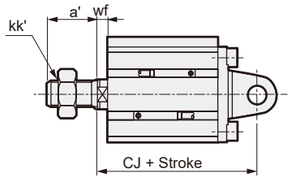
Code	Common dimension								For female thread								For male thread				
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	92	43	80	82	33	70	23.5	M14 × 1.5	5	78	68
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	95.5	44.5	83.5	85.5	34.5	73.5	23.5	M14 × 1.5	5	81.5	71.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	97.5	45.5	85.5	87.5	35.5	75.5	28.5	M18 × 1.5	5	82.5	72.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	112	51	96	102	41	86	28.5	M18 × 1.5	5	93	83

● Double clevis type (Compact type) (CB2)





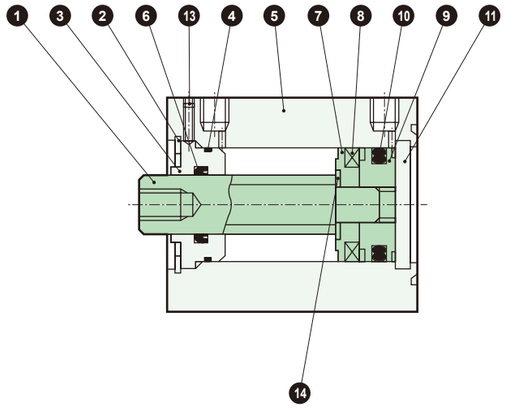
● For rod end male thread



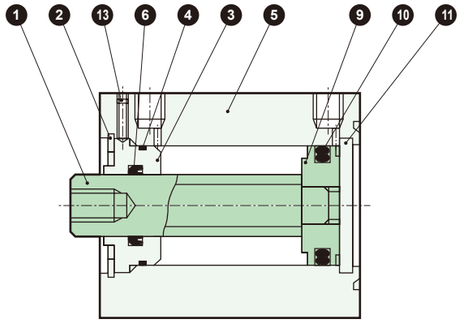
Code	Common dimension								For female thread								For male thread				
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	80	43	70	70	33	60	23.5	M14 × 1.5	5	68	58
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	83.5	44.5	73.5	73.5	34.5	63.5	23.5	M14 × 1.5	5	71.5	61.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	95.5	45.5	81.5	85.5	35.5	71.5	28.5	M18 × 1.5	5	78.5	68.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	103	51	89	93	41	79	28.5	M18 × 1.5	5	86	76

Internal Structure Diagram/Material (Bore size: ø12 to ø25)

●SSD-ML-12 to 25 (Double acting, Non-rotating type, With switch)



●SSD-M-12 to 25 (Double acting, Non-rotating type)

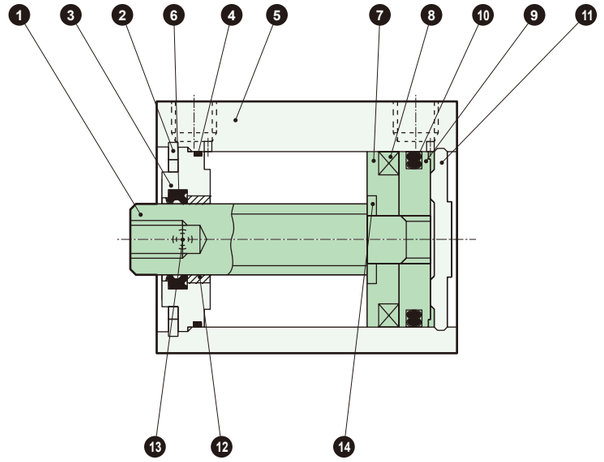


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel		8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Alumite	10	Piston Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		11	Cover	Stainless Steel	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Hexagon socket head set screw	Steel	
6	Rod Packing	Nitrile Rubber		14	Spacer washer	Stainless Steel	ø20 to ø25 only
7	Spacer	ø12: Aluminum alloy ø16 to ø25: Special resin	ø12: Chromate				

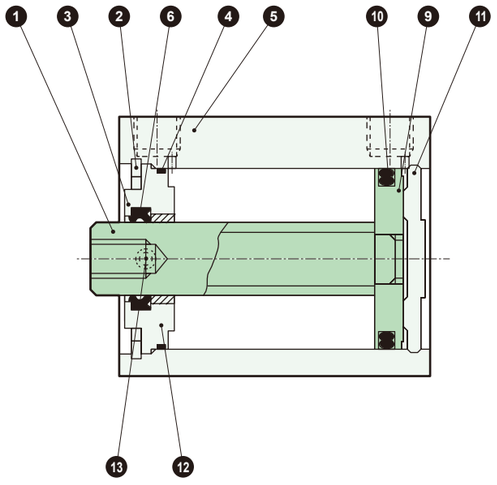
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø32 to ø63)

●SSD-ML-32 to 63 (Double acting, Non-rotating type, With switch)



●SSD-M-32 to 63 (Double acting, Non-rotating type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Magnet	Plastic	
2	C-type retaining ring	Steel	Zinc phosphate	9	Piston	Aluminum Alloy	Chromate
3	Rod Metal	Aluminum Alloy	Alumite	10	Piston Packing	Nitrile Rubber	
4	Rod metal gasket	Nitrile Rubber		11	Cover	Aluminum Alloy	Alumite
5	Cylinder Body	Aluminum Alloy	Hard Anodized	12	Bushing	Oil-Impregnated Bearing Alloy	
6	Rod Packing	Nitrile Rubber		13	Hexagon socket head set screw	Steel	
7	Spacer	ø32 to ø50: Special resin ø63: Aluminum alloy	ø63: Chromate	14	Spacer washer	Stainless Steel	ø32 to ø50 only

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

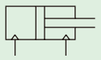


Compact Cylinder Double Acting, Cutting Oil Resistant Type

SSD-G2/G3 Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD - G2 - 16 - [ ] - 30 ——— N - LB - I

With Switch
(Built-in magnet for switch)

SSD - G2L - 16 - [ ] - 30 - T2YLH - R - N - LB - I

❶	❷	❸	❹	❺	❻	❼	❽	❾
Protection structure level	Bore size	Piping thread type	Stroke	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

❶Protection structure level

Code	Content
G2	Cutting Oil Resistant Scraper + NBR Packing
G3	Cutting Oil Resistant Scraper + FKM Packing
G2L	Cutting oil resistant scraper + NBR packing with switch
G3L	Cutting oil resistant scraper + FKM packing with switch

❷Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❸Piping thread type

Code	Content
Blank	M5 thread (ø16 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

❹Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø16, ø20	1 to 30	Every 1 mm
ø25 to ø50	1 to 50	
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 542.

❺Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
Solid State	For 2-Color Cutting Oil	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□	
Solid State	For 2-Color Cutting Oil	3-wire (NPN)	-	30 or less	-	50 or less	T3YLH□	T3YLV□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

*3

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

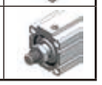
*3: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T2WLH
3 m T2WLH3
5 m T2WLH5

❻Number of Switches

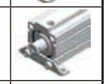
Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❼Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❽Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial foot (φ16 to φ25 customized product)	
*2	LB2	Axial foot (compact) (ø16 to ø25 customized product)	
*2	FA	Rod side flange (ø16 to ø25 custom product)	
	FB	Head Side Flange Type	
	CB	Double clevis (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. The assembly configuration at the time of product shipment is a custom specification.
*2: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 545 and 546 for outline dimension drawings. In addition, the model No. specifying the protrusion length will be printed at the end of the model No. printed on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us. (Excluding ø16 to ø25)

❾Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-G2 - ..... - XP5
SSD-G3 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YLH
5
Switch Model No.

Specifications

Item	SSD-G2/ G3 SSD-G2L/G3L (with switch)								
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type								
Operating Fluid	Compressed Air								
Max. Operating Pressure MPa	1.0								
Min. Operating Pressure MPa	0.15						0.1		
Proof pressure MPa	1.6								
Ambient Temperature °C	-10 to 60 (No freezing)								
Port Size	M5			Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$								
Operating Piston Speed mm/s	50 to 500						50 to 300		
Cushion	None								
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								
Allowable absorbed energy J	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore								
		ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1								
Maximum Stroke (mm)		30		50						
Intermediate Stroke *2		Every 1 mm								

***1: Cannot be manufactured for less than 10 mm with switch. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***3: Refer to page 545 for the min. stroke with mounting brackets LB and LB2.**

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T2YL, T3YL		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø16	10	10	20	20
ø20	10	10	20	20
ø25	10	10	20	20
ø32	10	10	20	20
ø40	10	10	15	15
ø50	10	10	15	15
ø63	10	10	10	15
ø80	10	10	10	15
ø100	10	10	10	15

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke	5		10		15		20		25		30		40		50	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø16	62	118	73	118	83	158	94	139	105	150	116	161				
ø20	108	163	120	195	133	208	146	221	158	233	171	246				
ø25	151	242	166	257	182	273	198	289	214	305	229	320	261	352	292	383
ø32	230	344	252	366	274	388	296	410	317	431	339	453	383	497	426	540
ø40	301	444	328	471	354	497	381	524	408	551	434	577	487	630	540	683
ø50	471	665	513	707	555	749	597	791	639	833	682	876	766	960	850	1044
ø63	678	957	733	1012			843	1122			953	1232	1064	1343	1174	1453
ø80	1445	1858	1532	1945			1705	2118			1878	2288	2052	2465	2225	2638
ø100	2098	2665	2212	2779			2439	3006			2667	3234	2894	3461	3122	3689

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	–	30.2	40.2	60.3	80.4	1.01×10^{2}	1.21×10^{2}	1.41×10^{2}	1.61×10^{2}	1.81×10^{2}	2.01×10^{2}
	Pull	–	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^{2}	1.21×10^{2}	1.36×10^{2}	1.51×10^{2}
ø20	Push	–	47.1	62.8	94.2	1.26×10^{2}	1.57×10^{2}	1.88×10^{2}	2.20×10^{2}	2.51×10^{2}	2.83×10^{2}	3.14×10^{2}
	Pull	–	35.3	47.1	70.7	94.2	1.18×10^{2}	1.41×10^{2}	1.65×10^{2}	1.88×10^{2}	2.12×10^{2}	2.36×10^{2}
ø25	Push	–	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	–	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	–	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	–	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	–	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	–	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	–	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	–	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

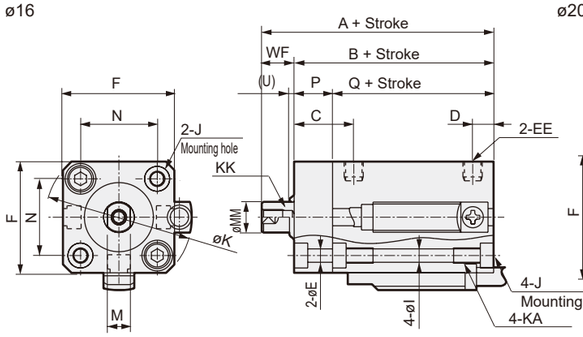
*1: Foot type mounting brackets are 2 pcs/set.

*2: For ø16 to ø25, due to the structure, foot brackets (LB, LB2) and flange brackets (FA) cannot be included to the rod side later. Please contact our sales department.

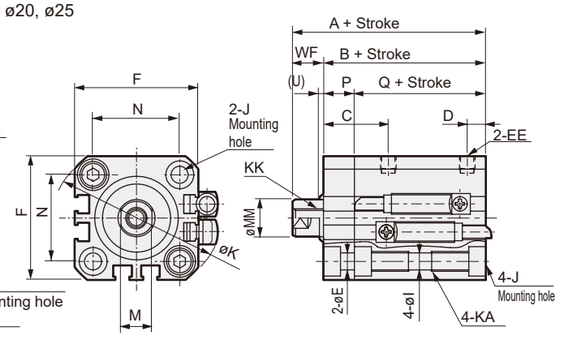
Outline Dimension Drawing

● Degree of protection: NBR Packing
SSD-G2(L)
● Degree of protection: FKM Packing
SSD-G3(L)

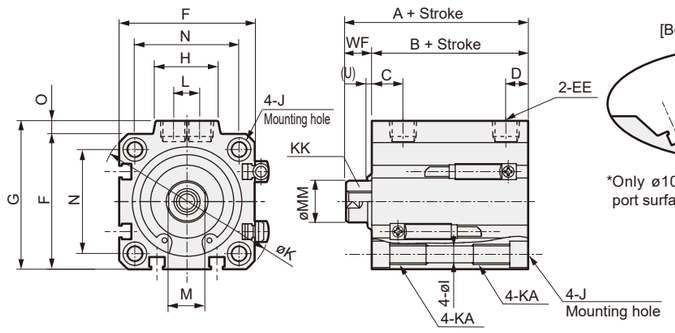
ø16



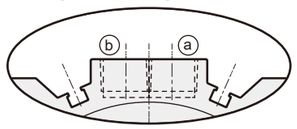
ø20, ø25



ø32 to ø100

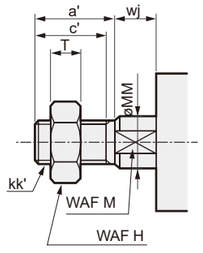


[Bore size ø100]



*Only ø100 has a switch groove on the port surface

● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1	B *1	Q *1	Dimension without switch A *1	B *1	Q *1	C	D	E	EE	F	G	H	I	J	K	KA
ø16	45.5	37	27	35.5	27	17	15.5	5.5	3.4	M5	29	–	–	3.5	ø6.5 Counterbore Depth 3.5	38	M4 depth 7
ø20	49	39.5	29.5	39	29.5	19.5	18	5.5	5.5	M5	36	–	–	5.5	ø9 Counterbore depth 5.5	47	M6 depth 11
ø25	52.5	42.5	32.5	42.5	32.5	22.5	21	6	5.5	M5	40	–	–	5.5	ø9 Counterbore depth 5.5	51	M6 depth 11
ø32	55	43	–	45	33	–	8	8	5.5	Rc1/8	45	49.5	24	5.5	ø9 Counterbore depth 5.5	60	M6 depth 11
ø40	61.5	49.5	–	51.5	39.5	–	12	8.5	5.5	Rc1/8	52	57	24	5.5	ø9 Counterbore depth 5.5	69	M6 depth 11
ø50	63.5	50.5	–	53.5	40.5	–	10.5	10.5	5.5	Rc1/4	64	71	33	6.9	ø11 Counterbore depth 6.5	86	M8 depth 13
ø63	69	56	–	59	46	–	13	11	5.5	Rc1/4	77	84	33	8.7	ø14 Counterbore depth 9	103	M10 depth 25
ø80	78.5	63.5	–	68.5	53.5	–	16	13	5.5	Rc3/8	98	104	38	10.5	ø17.5 Counterbore depth 11	132	M12 depth 28
ø100	90	73	–	80	63	–	23	15	5.5	Rc3/8	117	123.5	38	10.5	ø17.5 Counterbore depth 11	156	M12 depth 28

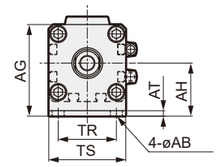
Code / Bore Size (mm)	Common dimension KK	L	M	MM	N	O	P	U	WF	Rod end male thread part outline dimension a'	c'	H	kk'	M	MM	T	wj
ø16	M4 depth 8	–	6	8	20	–	10	3	8.5	12	10	10	M6	6	8	3.6	8.5
ø20	M5 depth 7	–	8	10	25.5	–	10	3	9.5	14	12	13	M8	8	10	5	9.5
ø25	M6 Depth 12	–	10	12	28	–	10	3	10	17.5	15	17	M10×1.25	10	12	6	10
ø32	M8 depth 13	10	14	16	34	4.5	–	0	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø40	M8 depth 13	10	14	16	40	5	–	2	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø50	M10 depth 15	15	17	20	50	7	–	2	13	28.5	26	27	M18×1.5	17	20	11	10
ø63	M10 depth 15	15	17	20	60	7	–	2	13	28.5	26	27	M18×1.5	17	20	11	10
ø80	M16 depth 21	15	22	25	77	6	–	2	15	35.5	32.5	32	M22×1.5	22	25	13	13
ø100	M20 depth 27	15	27	30	94	6.5	–	2	17	35.5	32.5	41	M26×1.5	27	30	16	13

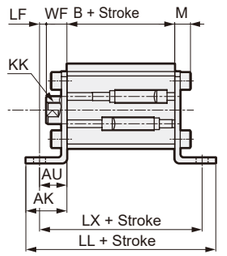
*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

Outline Dimension Drawing (Bore size: ø32 to ø100)

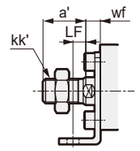
● Axial foot type (LB)

• ø32

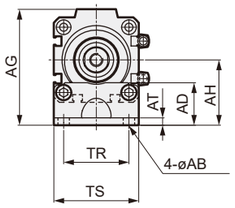


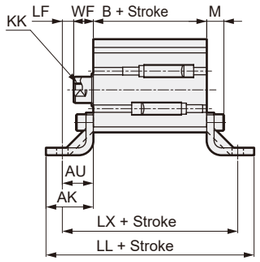


● For rod end male thread

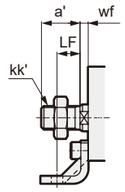


• ø40 to ø100





● For rod end male thread

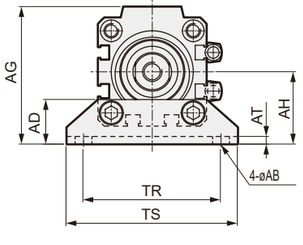


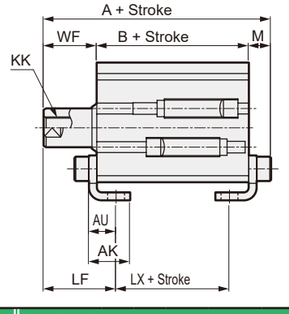
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	12	9	43	91	75	33	81	65	23.5	M14×1.5	10	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	12	12	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	10	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	13	14	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	10	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	13	17	56	136	106	46	126	96	28.5	M18×1.5	10	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	15	25	63.5	163.5	133.5	53.5	153.5	123.5	35.5	M22×1.5	13	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	17	23	73	173	143	63	163	133	35.5	M26×1.5	13	27

*1: If B + stroke is less than or equal to the value below, LB cannot be selected.
ø80, ø100: 69 or less

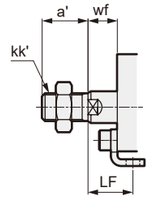
● Axial Foot Type (Compact Type) (LB2)

· ø32 to ø100





● For rod end male thread



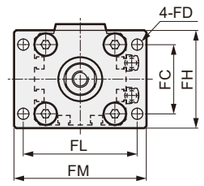
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	22	25	74.2	43	27	64.2	33	17	23.5	M14×1.5	20	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	22	25	80.7	49.5	33.5	70.7	39.5	23.5	23.5	M14×1.5	20	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	23	29.5	84.7	50.5	27.5	74.7	40.5	17.5	28.5	M18×1.5	20	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	23	31	92.2	56	30	82.2	46	20	28.5	M18×1.5	20	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	25	35	105	63.5	33.5	95	53.5	23.5	35.5	M22×1.5	23	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	27	39	118	73	39	108	63	29	35.5	M26×1.5	23	35

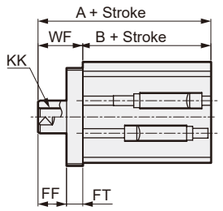
*1: If B + stroke is less than or equal to the value below, LB2 cannot be selected.
ø80: 72 or less ø100: 69 or less

Outline dimension drawing (bore size: ø16 to ø100)

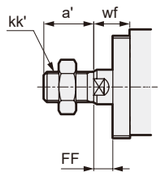
● Rod Side Flange Type (FA)

・ø32 to ø100





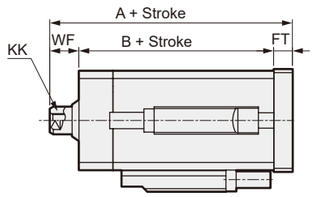
● For rod end male thread

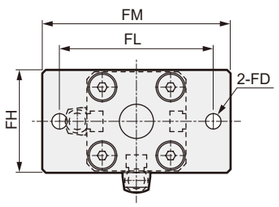


Code / Bore size (mm)	Common dimension						For female thread								For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	14	M8 depth 13	22	65	43	55	33	12	23.5	M14×1.5	20
ø40	40	5.5	54	62	72	8	14	M8 depth 13	22	71.5	49.5	61.5	39.5	12	23.5	M14×1.5	20
ø50	50	6.6	67	76	89	9	14	M10 depth 15	23	73.5	50.5	63.5	40.5	11	28.5	M18×1.5	20
ø63	60	9	80	92	108	9	14	M10 depth 15	23	79	56	69	46	11	28.5	M18×1.5	20
ø80	77	11	99	116	134	11	14	M16 depth 21	25	88.5	63.5	78.5	53.5	12	35.5	M22×1.5	23
ø100	94	11	117	136	154	11	16	M20 depth 27	27	100	73	90	63	12	35.5	M26×1.5	23

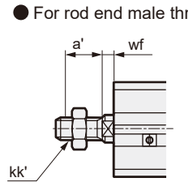
● Head Side Flange Type (FB)

・ø16 to ø25

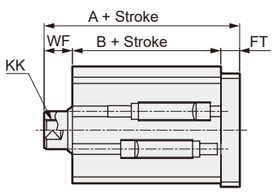


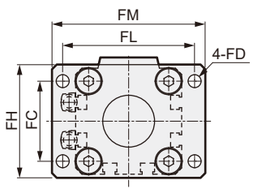


● For rod end male thread

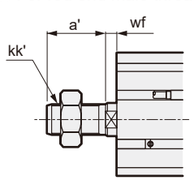


・ø32 to ø100





● For rod end male thread

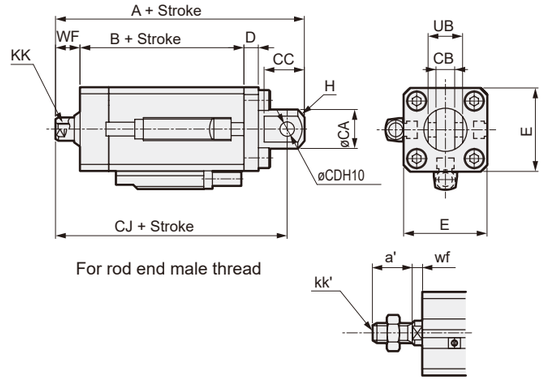


Code / Bore size (mm)	Common dimension						For female thread						For male thread		
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf
ø16	–	4.5	30	45	55	5.5	M4 depth 8	8.5	51	37	41	27	12	M6	8.5
ø20	–	6.6	39	48	60	8	M5 depth 7	9.5	57	39.5	47	29.5	14	M8	9.5
ø25	–	6.6	42	52	64	8	M6 Depth 12	10	60.5	42.5	50.5	32.5	17.5	M10×1.25	10
ø32	34	5.5	48	56	65	8	M8 depth 13	12	63	43	53	33	23.5	M14×1.5	10
ø40	40	5.5	54	62	72	8	M8 depth 13	12	69.5	49.5	59.5	39.5	23.5	M14×1.5	10
ø50	50	6.6	67	76	89	9	M10 depth 15	13	72.5	50.5	62.5	40.5	28.5	M18×1.5	10
ø63	60	9	80	92	108	9	M10 depth 15	13	78	56	68	46	28.5	M18×1.5	10
ø80	77	11	99	116	134	11	M16 depth 21	15	89.5	63.5	79.5	53.5	35.5	M22×1.5	13
ø100	94	11	117	136	154	11	M20 depth 27	17	101	73	91	63	35.5	M26×1.5	13

Outline dimension drawing (bore size: ø16 to ø100)

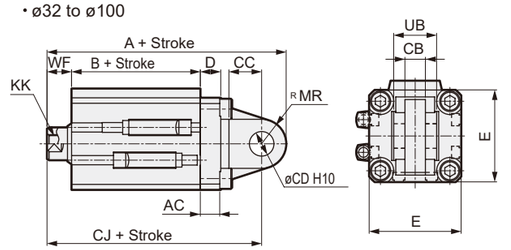
● Double Knuckle Clevis Type (CB)

・ø16 to ø25

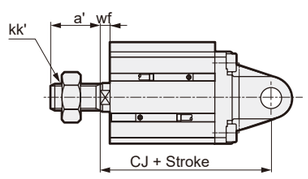


For rod end male thread

・ø32 to ø100



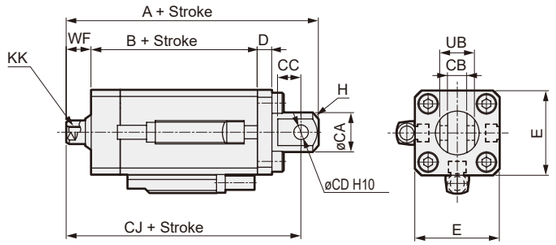
For rod end male thread



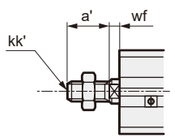
Code / Bore size (mm)	Common dimension										For female thread		With Switch			Without Switch			For male thread			With Switch	Without Switch
	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	A	B	CJ	A	B	CJ	a'	kk'	wf	CJ	CJ
ø16	–	15	6.5 +0.4 +0.1	8	5	5	29	C2	–	12 -0.1 -0.4	M4 depth 8	3.5	61.5	37	55.5	51.5	27	45.5	12	M6	3.5	55.5	45.5
ø20	–	24	8 +0.4 +0.1	12	10	8	36	C4	–	19 -0.1 -0.4	M5 depth 7	4.5	77	39.5	67	67	29.5	57	14	M8	4.5	67	57
ø25	–	27.5	10 +0.4 +0.1	16	12	8	40	C5	–	21 -0.1 -0.4	M6 Depth 12	5	86.5	42.5	74.5	76.5	32.5	64.5	17.5	M10×1.25	5	74.5	64.5
ø32	9.5	–	10 +0.4 +0.1	16	12	10	45	–	12	21 -0.1 -0.4	M8 depth 13	7	92	43	80	82	33	70	23.5	M14×1.5	5	78	68
ø40	6.5	–	18 +0.4 +0.1	18	12	10	52	–	12	36 -0.1 -0.4	M8 depth 13	7	100.5	49.5	88.5	90.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6.5	–	18 +0.4 +0.1	18	12	10	64	–	12	36 -0.1 -0.4	M10 depth 15	8	102.5	50.5	90.5	92.5	40.5	80.5	28.5	M18×1.5	5	87.5	77.5
ø63	7.5	–	20 +0.4 +0.1	24	14	10	77	–	16	40 -0.1 -0.4	M10 depth 15	8	117	56	101	107	46	91	28.5	M18×1.5	5	98	88
ø80	10.5	–	28 +0.4 +0.1	30	20	14	98	–	20	56 -0.1 -0.4	M16 depth 21	10	145.5	63.5	125.5	135.5	53.5	115.5	35.5	M22×1.5	8	123.5	113.5
ø100	10.5	–	28 +0.4 +0.1	30	20	16	117	–	20	56 -0.1 -0.4	M20 depth 27	12	157	73	137	147	63	127	35.5	M26×1.5	8	133	123

● Double clevis type (Compact type) (CB2)

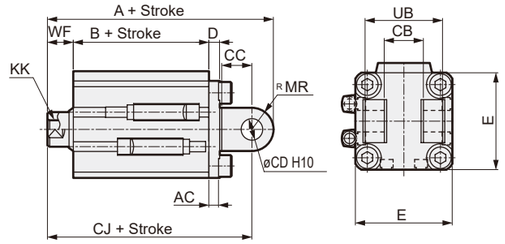
・ø16 to ø25



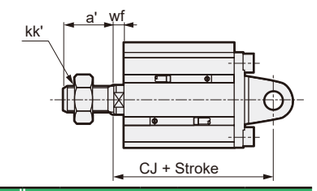
For rod end male thread



・ø32 to ø100



For rod end male thread

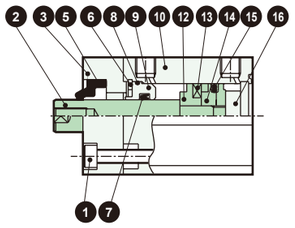


Code / Bore size (mm)	Common dimension										For female thread		With Switch			Without Switch			For male thread			With Switch	Without Switch
	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	A	B	CJ	A	B	CJ	a'	kk'	wf	CJ	CJ
ø16	–	15	6.5 +0.4 +0.1	8	5	5	29	C2	–	12 -0.1 -0.4	M4 depth 8	3.5	61.5	37	55.5	51.5	27	45.5	12	M6	3.5	55.5	45.5
ø20	–	20	8 +0.4 +0.1	12	8	5	36	C4	–	16 -0.1 -0.3	M5 depth 7	4.5	71	39.5	62	61	29.5	52	14	M8	4.5	62	52
ø25	–	24	10 +0.4 +0.1	14	10	5	40	C5	–	20 -0.1 -0.3	M6 Depth 12	5	77.5	42.5	67.5	67.5	32.5	57.5	17.5	M10×1.25	5	67.5	57.5
ø32	4.5	–	18 +0.4 +0.1	14	10	5	45	–	10	36 -0.1 -0.3	M8 depth 13	7	80	43	70	70	33	60	23.5	M14×1.5	5	68	58
ø40	5	–	18 +0.4 +0.1	14	10	6	52	–	10	36 -0.1 -0.3	M8 depth 13	7	88.5	49.5	78.5	78.5	39.5	68.5	23.5	M14×1.5	5	76.5	66.5
ø50	6	–	22 +0.4 +0.1	20	14	7	64	–	14	44 -0.1 -0.3	M10 depth 15	8	100.5	50.5	86.5	90.5	40.5	76.5	28.5	M18×1.5	5	83.5	73.5
ø63	7	–	22 +0.4 +0.1	20	14	8	77	–	14	44 -0.1 -0.3	M10 depth 15	8	108	56	94	98	46	84	28.5	M18×1.5	5	91	81
ø80	9	–	28 +0.4 +0.1	27	18	10	98	–	18	56 -0.1 -0.3	M16 depth 21	10	129.5	63.5	111.5	119.5	53.5	101.5	35.5	M22×1.5	8	109.5	99.5
ø100	12	–	32 +0.4 +0.1	31	22	13	117	–	22	64 -0.1 -0.3	M20 depth 27	12	152	73	130	142	63	120	35.5	M26×1.5	8	126	116

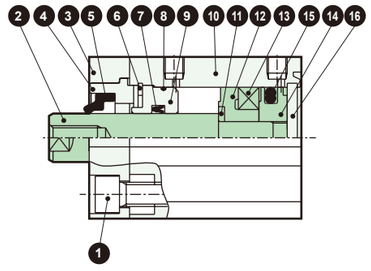
Internal Structure Diagram/Material

- Degree of protection: Packing NBR SSD-G2/G2L
- Degree of protection: Packing FKM SSD-G3/G3L

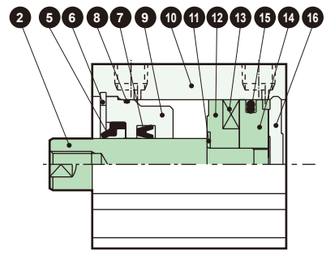
●SSD-G$\frac{2}{3}$L-16
(double acting/coolant proof scraper with switch)



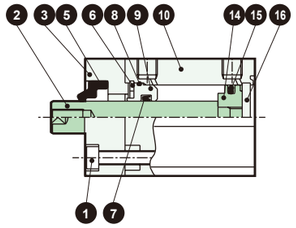
●SSD-G$\frac{2}{3}$L-20, 25
(double acting/coolant proof scraper with switch)



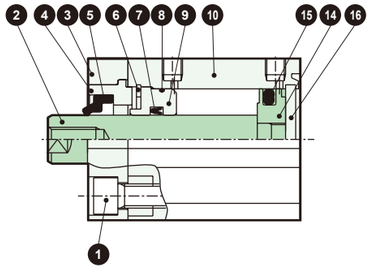
●SSD-G$\frac{2}{3}$L-32 to 50
(double acting/coolant proof scraper with switch)



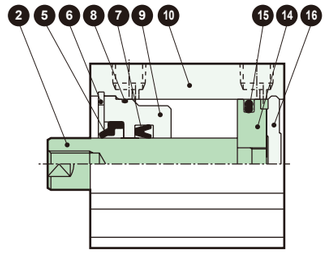
●SSD-G$\frac{2}{3}$-16
(double acting/coolant proof scraper)



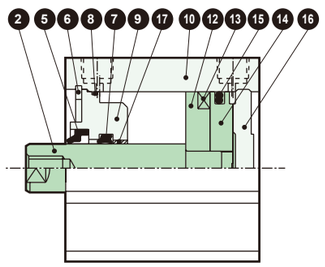
●SSD-G$\frac{2}{3}$-20, 25
(double acting/coolant proof scraper)



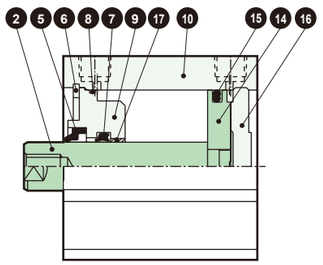
●SSD-G$\frac{2}{3}$-32 to 50
(double acting/coolant proof scraper)



●SSD-G$\frac{2}{3}$L-63 to 100
(double acting/coolant proof scraper with switch)



●SSD-G$\frac{2}{3}$-63 to 100
(double acting/coolant proof scraper)



Material

Part No.	Part Name		Material	Remarks
1	Hexagon Socket Head Cap Screw		Stainless Steel	ø16 to ø25
2	Piston Rod		Stainless Steel	Industrial Hard Chrome Plating
3	Adapter (A)		Aluminum Alloy	Alumite
4	Adapter (B)		Aluminum Alloy	Alumite
5	Scraper	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
6	C-type retaining ring (for hole)		Stainless Steel	
7	Rod Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
8	Rod metal gasket	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
9	Rod Metal		Aluminum Alloy	Alumite
10	Cylinder Body		Aluminum alloy	Hard Anodized
11	Spacer washer		Stainless Steel	
12	Spacer		ø16 to ø50: Special resin ø63 to ø100: Aluminum alloy	
13	Magnet		Plastic	
14	Piston		Aluminum Alloy	Chromate
15	Piston Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
16	Cover		ø16 to ø25: Stainless steel	
			ø32 to ø100: Aluminum alloy	Alumite
17	Bushing		Bearing Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

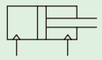


Compact Cylinder
Double Acting, High Load, Cutting Oil Resistant Type

SSD-KG2 / KG3 Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD - KG2 - 16 - 30 ——— N - LB - I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD - KG2L - 16 - 30 - T2YLH - R - N - LB - I
1 2 3 4 5 6 7 8

1 Protection structure level
2 Bore size
3 Stroke
4 Switch Model No.
5 Number of Switches
6 Option
7 Mounting bracket
8 Accessories

1 Protection structure level

Code	Content
KG2	High load + Cutting oil resistant scraper + NBR packing
KG3	High load + Cutting oil resistant scraper + FKM packing
KG2L	High load + Cutting oil resistant scraper + NBR packing with switch
KG3L	High load + Cutting oil resistant scraper + FKM packing with switch

2 Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø16, ø20	1 to 100	Every 1 mm
ø25 to ø50	1 to 150	
ø63 to ø100	1 to 200	

Note: For details on stroke, please refer to P. 552.

4 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
	2-Color For Cutting Oil	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□	
	2-Color For Cutting Oil	3-wire (NPN)	-	30 or less	-	50 or less	T3YLH□	T3YLV□	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

*3

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*3: Only T2WLH, T2WLV can be selected.

Example) Lead wire length
1 m T2WLH
3 m T2WLH3
5 m T2WLH5

5 Number of Switches

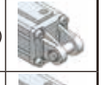
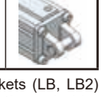
Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial foot (ø16 to ø25 customized product)	
*2	LB2	Axial foot (compact) (ø16 to ø25 customized product)	
*2	FA	Rod side flange (ø16 to ø25 custom product)	
	FB	Head Side Flange Type	
	CB	Double clevis (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: For ø16 to ø25, due to structural reasons, foot brackets (LB, LB2) and flange brackets (FA) cannot be retrofitted to the rod side. Assembly at the time of product shipment is made-to-order.
*2: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 555 and 556 for outline dimension drawings. In addition, the model No. specifying the protrusion length will be printed at the end of the model No. printed on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us. (Excluding ø16 to ø25)

8 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

*For combination of variations and options, refer to P. 356 to 361.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-KG2 - ..... - XP5
SSD-KG3 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YLH
4
Switch Model No.

Specifications

Item	SSD-KG2/KG3 SSD-KG2L/KG3L (with switch)								
Bore size mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type								
Operating Fluid	Compressed Air								
Max. Operating Pressure MPa	1.0								
Min. Operating Pressure MPa	0.15						0.1		
Proof pressure MPa	1.6								
Ambient Temperature °C	-10 to 60 (No freezing)								
Port Size	M5×0.8			Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$								
Operating Piston Speed mm/s	50 to 500						50 to 300		
Cushion	Rubber Cushion								
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								
Allowable absorbed energy J	0.09	0.16	0.16	0.4	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore								
		ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●							
	10	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●	●
	60			●	●	●	●	●	●	●
	70			●	●	●	●	●	●	●
	80			●	●	●	●	●	●	●
	90			●	●	●	●	●	●	●
	100			●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1								
Maximum Stroke (mm)		100		150				200		
Intermediate Stroke *2		Every 1 mm								

***1: Cannot be manufactured for less than 10 mm with switch. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	T2YL, T3YL		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø16	10	10	20	20
ø20	10	10	20	20
ø25	10	10	20	20
ø32	10	10	15	15
ø40	10	10	15	15
ø50	10	10	15	15
ø63	10	10	10	15
ø80	10	10	10	15
ø100	10	10	10	15

Cylinder Weight

(Unit: g)

Stroke	5		10		15		20		25		30		40		50		60		70		80		90		100	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø16	69	114	79	124	90	135	101	146	112	157	123	168	145	179	167	201	189	223	211	245	233	267	255	289	277	311
ø20	88	163	101	176	114	189	126	201	139	214	151	226	176	251	201	276	226	301	251	326	276	351	301	376	326	401
ø25			134	225	150	241	166	257	181	272	198	289	230	321	262	353	294	385	326	417	358	449	390	481	422	513
ø32			232	346	253	367	275	389	297	411	319	433	362	476	405	519	448	562	491	605	534	648	577	691	620	734
ø40			316	459	343	486	369	512	395	538	422	565	475	618	528	671	581	724	634	777	687	830	740	883	793	936
ø50			509	703	551	745	594	788	637	831	678	872	762	956	846	1040	930	1124	1014	1208	1098	1292	1182	1376	1266	1460
ø63			727	1006			837	1116			948	1227	1058	1337	1168	1447	1278	1557	1388	1667	1498	1777	1608	1887	1718	1997
ø80			1274	1687			1447	1860			1621	2034	1794	2207	1967	2380	2140	2553	2313	2726	2486	2899	2659	3072	2832	3245
ø100			1887	2454			2115	2682			2342	2909	2570	3137	2798	3365	3026	3593	3254	3821	3482	4049	3710	4277	3938	4505

Stroke	110		120		130		140		150		160		170		180		190		200	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	351	426	376	451	401	476	426	501	451	526										
ø25	454	545	486	577	518	609	550	641	582	673										
ø32	663	777	706	820	749	863	792	906	835	949										
ø40	846	989	899	1042	952	1095	1005	1148	1058	1201										
ø50	1350	1544	1434	1628	1518	1712	1602	1796	1686	1880										
ø63	1828	2107	1938	2217	2048	2327	2158	2437	2268	2547	2378	2657	2488	2767	2598	2877	2708	2987	2818	3097
ø80	3005	3418	3178	3591	3351	3764	3524	3937	3697	4110	3870	4283	4043	4456	4216	4629	4389	4802	4562	4975
ø100	4166	4733	4394	4961	4622	5189	4850	5417	5078	5645	5306	5873	5534	6101	5762	6329	5990	6557	6218	6785

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	–	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	–	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	–	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	–	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	–	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	–	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	–	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	–	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	–	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	–	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	–	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	–	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-16	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-16	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-16	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-16	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-16	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

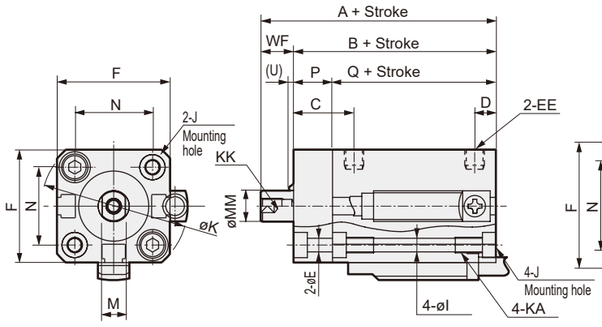
*1: Foot type mounting brackets are 2 pcs/set.

*2: For ø16 to ø25, due to the structure, foot brackets (LB, LB2) and flange brackets (FA) cannot be included to the rod side later. Please contact our sales department.

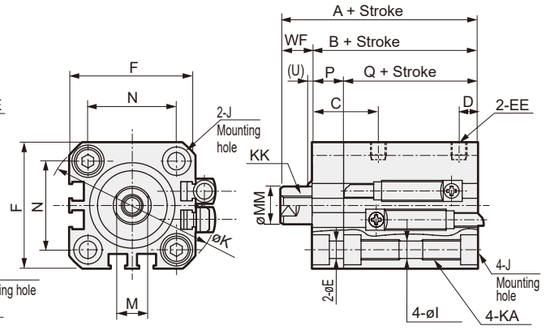
Outline Dimension Drawing

● SSD-KG2 (L) / KG3 (L)

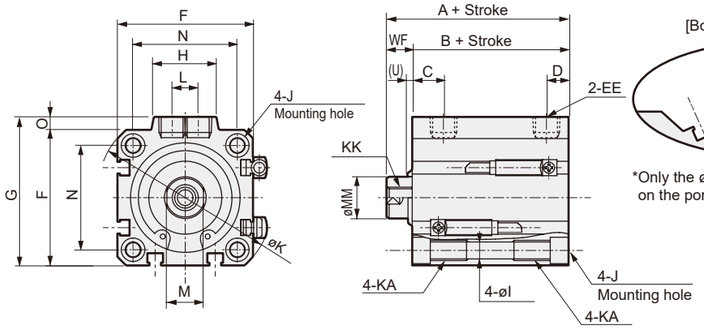
・ø16



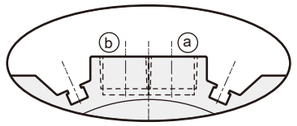
・ø20, ø25



・ø32 to ø100

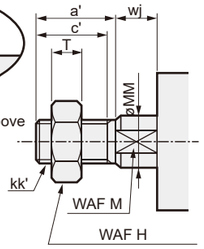


[Bore size ø100]



*Only the ø100 model has a switch groove on the port surface.

● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1	B *1	Q *1	Dimension without switch A *1	B *1	Q *1	C	D	E	EE	F	G	H	I	J	K	KA
ø16	45.5	37	27	40.5	32	22	15.5	5.5	3.4	M5	29	–	–	3.5	ø6.5 Counterbore Depth 3.5	38	M4 depth 7
ø20	54	44.5	34.5	44	34.5	24.5	18	5.5	5.5	M5	36	–	–	5.5	ø9 Counterbore depth 5.5	47	M6 depth 11
ø25	57.5	47.5	37.5	47.5	37.5	27.5	21	6	5.5	M5	40	–	–	5.5	ø9 Counterbore depth 5.5	51	M6 depth 11
ø32	65	53	–	55	43	–	8	8	5.5	Rc1/8	45	49.5	24	5.5	ø9 Counterbore depth 5.5	60	M6 depth 11
ø40	71.5	59.5	–	61.5	49.5	–	12	8.5	5.5	Rc1/8	52	57	24	5.5	ø9 Counterbore depth 5.5	69	M6 depth 11
ø50	73.5	60.5	–	63.5	50.5	–	10.5	10.5	5.5	Rc1/4	64	71	33	6.9	ø11 Counterbore depth 6.5	86	M8 depth 13
ø63	79	66	–	69	56	–	13	11	5.5	Rc1/4	77	84	33	8.7	ø14 Counterbore depth 9	103	M10 depth 25
ø80	88.5	73.5	–	78.5	63.5	–	16	13	5.5	Rc3/8	98	104	38	10.5	ø17.5 Counterbore depth 11	132	M12 depth 28
ø100	100	83	–	90	73	–	23	15	5.5	Rc3/8	117	123.5	38	10.5	ø17.5 Counterbore depth 11	156	M12 depth 28

Code / Bore Size (mm)	Common dimension KK	L	M	MM	N	O	P	U	WF	Rod End Male Thread Dimension a'	c'	H	kk'	M	MM	T	wj
ø16	M4 depth 8	–	6	8	20	–	10	3	8.5	12	10	10	M6	6	8	3.6	8.5
ø20	M5 depth 7	–	8	10	25.5	–	10	3	9.5	14	12	13	M8	8	10	5	9.5
ø25	M6 Depth 12	–	10	12	28	–	10	3	10	17.5	15	17	M10×1.25	10	12	6	10
ø32	M8 depth 13	10	14	16	34	4.5	–	0	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø40	M8 depth 13	10	14	16	40	5	–	2	12	23.5	20.5	22	M14×1.5	14	16	8	10
ø50	M10 depth 15	15	17	20	50	7	–	2	13	28.5	26	27	M18×1.5	17	20	11	10
ø63	M10 depth 15	15	17	20	60	7	–	2	13	28.5	26	27	M18×1.5	17	20	11	10
ø80	M16 depth 21	15	22	25	77	6	–	2	15	35.5	32.5	32	M22×1.5	22	25	13	13
ø100	M20 depth 27	15	27	30	94	6.5	–	2	17	35.5	32.5	41	M26×1.5	27	30	16	13

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

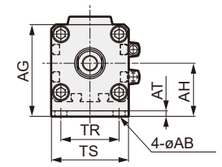
***2: For dimensions with each switch, refer to P. 674 to 681.**

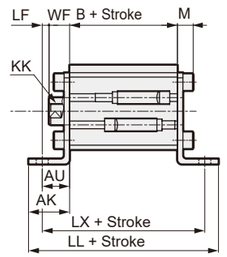
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

Outline Dimension Drawing (Bore size: ø32 to ø100)

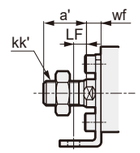
● Axial foot type (LB)

・ø32

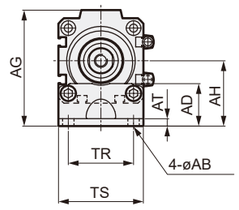


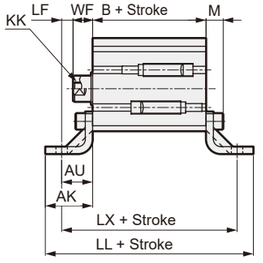


● For rod end male thread

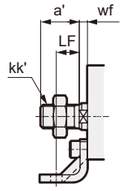


・ø40 to ø100





● For rod end male thread

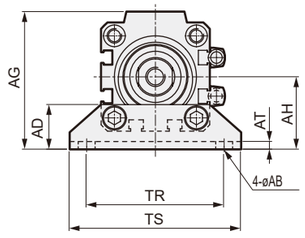


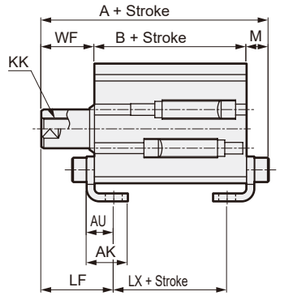
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	12	9	53	101	85	43	91	75	23.5	M14×1.5	10	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	12	12	59.5	117.5	97.5	49.5	107.5	87.5	23.5	M14×1.5	10	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	13	14	60.5	128.5	104.5	50.5	118.5	94.5	28.5	M18×1.5	10	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	13	17	66	146	116	56	136	106	28.5	M18×1.5	10	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	15	25	73.5	173.5	143.5	63.5	163.5	133.5	35.5	M22×1.5	13	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	17	23	83	183	153	73	173	143	35.5	M26×1.5	13	27

*1: If B + stroke is less than or equal to the value below, LB cannot be selected.
ø80: 69 or less

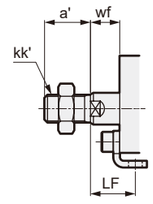
● Axial Foot Type (Compact Type) (LB2)

· ø32 to ø100





● For rod end male thread



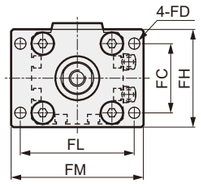
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	22	25	84.2	53	37	74.2	43	27	23.5	M14×1.5	20	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	22	25	90.7	59.5	43.5	80.7	49.5	33.5	23.5	M14×1.5	20	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	23	29.5	94.7	60.5	37.5	84.7	50.5	27.5	28.5	M18×1.5	20	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	23	31	102.2	66	40	92.2	56	30	28.5	M18×1.5	20	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	25	35	115	73.5	43.5	105	63.5	33.5	35.5	M22×1.5	23	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	27	39	128	83	49	118	73	39	35.5	M26×1.5	23	35

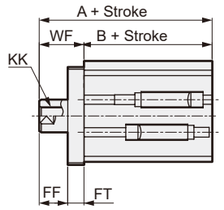
*1: If B + stroke is less than or equal to the value below, LB2 cannot be selected.
ø80: 72 or less

Outline dimension drawing (bore size: ø16 to ø100)

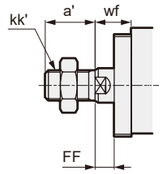
● Rod Side Flange Type (FA)

• ø32 to ø100





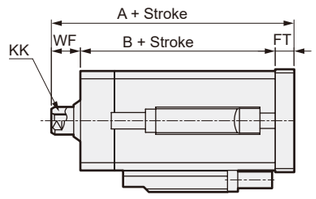
● For rod end male thread

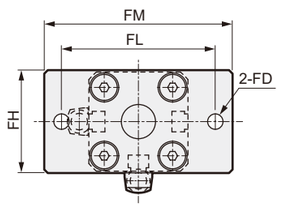


Code / Bore size (mm)	Common dimension						For female thread							For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	14	M8 depth 13	22	75	53	65	43	12	23.5	M14×1.5	20
ø40	40	5.5	54	62	72	8	14	M8 depth 13	22	81.5	59.5	71.5	49.5	12	23.5	M14×1.5	20
ø50	50	6.6	67	76	89	9	14	M10 depth 15	23	83.5	60.5	73.5	50.5	11	28.5	M18×1.5	20
ø63	60	9	80	92	108	9	14	M10 depth 15	23	89	66	79	56	11	28.5	M18×1.5	20
ø80	77	11	99	116	134	11	14	M16 depth 21	25	98.5	73.5	88.5	63.5	12	35.5	M22×1.5	23
ø100	94	11	117	136	154	11	16	M20 depth 27	27	110	83	100	73	12	35.5	M26×1.5	23

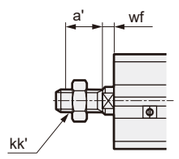
● Head Side Flange Type (FB)

• ø16 to ø25

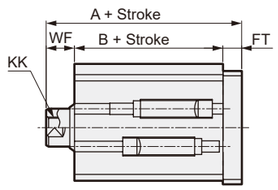


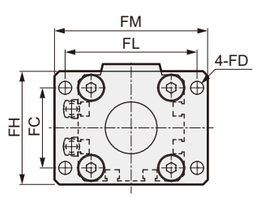


● For rod end male thread

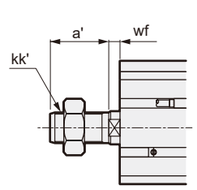


• ø32 to ø100





● In case of male thread at rod end

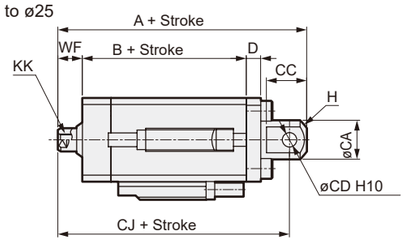


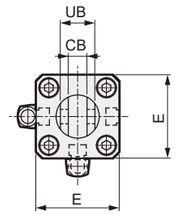
Code / Bore size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf
ø16	–	4.5	30	45	55	5.5	M4 depth 8	8.5	51	37	46	32	12	M6	8.5
ø20	–	6.6	39	48	60	8	M5 depth 7	9.5	62	44.5	52	34.5	14	M8	9.5
ø25	–	6.6	42	52	64	8	M6 Depth 12	10	65.5	47.5	55.5	37.5	17.5	M10×1.25	10
ø32	34	5.5	48	56	65	8	M8 depth 13	12	73	53	63	43	23.5	M14×1.5	10
ø40	40	5.5	54	62	72	8	M8 depth 13	12	79.5	59.5	69.5	49.5	23.5	M14×1.5	10
ø50	50	6.6	67	76	89	9	M10 depth 15	13	82.5	60.5	72.5	50.5	28.5	M18×1.5	10
ø63	60	9	80	92	108	9	M10 depth 15	13	88	66	78	56	28.5	M18×1.5	10
ø80	77	11	99	116	134	11	M16 depth 21	15	99.5	73.5	89.5	63.5	35.5	M22×1.5	13
ø100	94	11	117	136	154	11	M20 depth 27	17	111	83	101	73	35.5	M26×1.5	13

Outline dimension drawing (bore size: ø16 to ø100)

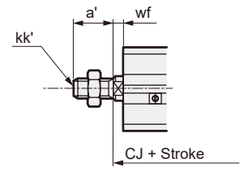
● Double Knuckle Clevis Type (CB)

• ø16 to ø25

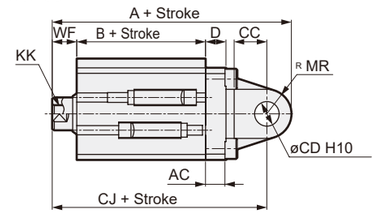


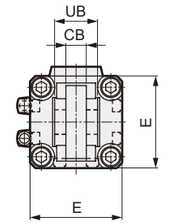


● For rod end male thread

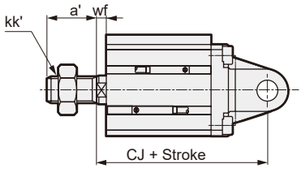


• ø32 to ø100





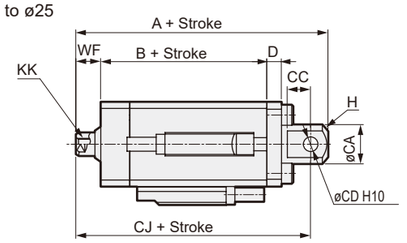
● For rod end male thread

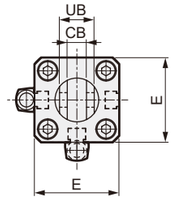


Code / Bore size (mm)	Common dimension										For female thread							For male thread				
	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø16	–	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	–	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	61.5	37	55.5	56.5	32	50.5	12	M6	3.5	55.5	50.5
ø20	–	24	$8^{+0.4}_{+0.1}$	12	10	8	36	C4	–	$19^{-0.1}_{-0.4}$	M5 depth 7	4.5	82	44.5	72	72	34.5	62	14	M8	4.5	72	62
ø25	–	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	–	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	91.5	47.5	79.5	81.5	37.5	69.5	17.5	M10×1.25	5	79.5	69.5
ø32	9.5	–	$10^{+0.4}_{+0.1}$	16	12	10	45	–	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	102	53	90	92	43	80	23.5	M14×1.5	5	88	78
ø40	6.5	–	$18^{+0.4}_{+0.1}$	18	12	10	52	–	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	110.5	59.5	98.5	100.5	49.5	88.5	23.5	M14×1.5	5	96.5	86.5
ø50	6.5	–	$18^{+0.4}_{+0.1}$	18	12	10	64	–	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	112.5	60.5	100.5	102.5	50.5	90.5	28.5	M18×1.5	5	97.5	87.5
ø63	7.5	–	$20^{+0.4}_{+0.1}$	24	14	10	77	–	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	127	66	111	117	56	101	28.5	M18×1.5	5	108	98
ø80	10.5	–	$28^{+0.4}_{+0.1}$	30	20	14	98	–	20	$56^{-0.1}_{-0.4}$	M16 depth 21	10	155.5	73.5	135.5	145.5	63.5	125.5	35.5	M22×1.5	8	133.5	123.5
ø100	10.5	–	$28^{+0.4}_{+0.1}$	30	20	16	117	–	20	$56^{-0.1}_{-0.4}$	M20 depth 27	12	167	83	147	157	73	137	35.5	M26×1.5	8	143	133

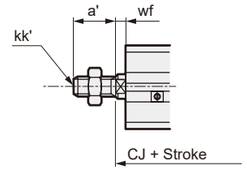
● Double clevis type (Compact type) (CB2)

• ø16 to ø25

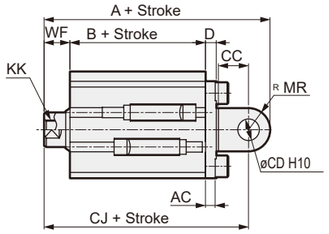


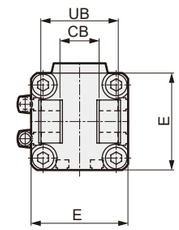


● For rod end male thread

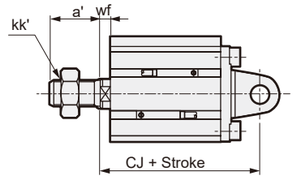


• ø32 to ø100





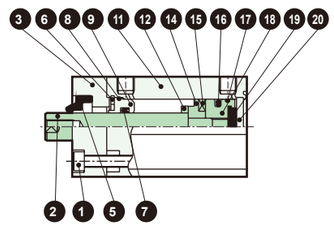
● For rod end male thread



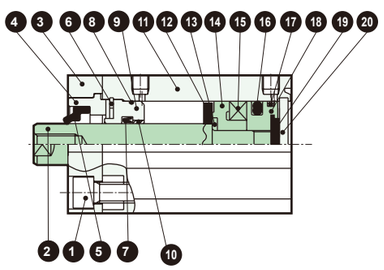
Code / Bore size (mm)	Common dimension										For female thread							For male thread				
	AC	CA	CB	CC	CD	D	E	H	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø16	–	15	$6.5^{+0.4}_{+0.1}$	8	5	5	29	C2	–	$12^{-0.1}_{-0.4}$	M4 depth 8	3.5	61.5	37	55.5	56.5	32	50.5	12	M6	3.5	55.5	50.5
ø20	–	20	$8^{+0.4}_{+0.1}$	12	8	5	36	C4	–	$16^{-0.1}_{-0.3}$	M5 depth 7	4.5	76	44.5	67	66	34.5	57	14	M8	4.5	67	57
ø25	–	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	–	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	82.5	47.5	72.5	72.5	37.5	62.5	17.5	M10×1.25	5	72.5	62.5
ø32	4.5	–	$18^{+0.4}_{+0.1}$	14	10	5	45	–	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	90	53	80	80	43	70	23.5	M14×1.5	5	78	68
ø40	5	–	$18^{+0.4}_{+0.1}$	14	10	6	52	–	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	98.5	59.5	88.5	88.5	49.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6	–	$22^{+0.4}_{+0.1}$	20	14	7	64	–	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	110.5	60.5	96.5	100.5	50.5	86.5	28.5	M18×1.5	5	93.5	83.5
ø63	7	–	$22^{+0.4}_{+0.1}$	20	14	8	77	–	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	118	66	104	108	56	94	28.5	M18×1.5	5	101	91
ø80	9	–	$28^{+0.4}_{+0.1}$	27	18	10	98	–	18	$56^{-0.1}_{-0.3}$	M16 depth 21	10	139.5	73.5	121.5	129.5	63.5	111.5	35.5	M22×1.5	8	119.5	109.5
ø100	12	–	$32^{+0.4}_{+0.1}$	31	22	13	117	–	22	$64^{-0.1}_{-0.3}$	M20 depth 27	12	162	83	140	152	73	130	35.5	M26×1.5	8	136	126

Internal Structure Diagram/Material

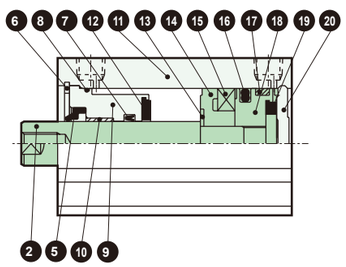
●SSD-KG $\frac{2}{3}$ L-16
(Double acting, High load, Cutting oil resistant scraper with switch)



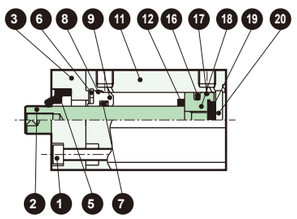
●SSD-KG $\frac{2}{3}$ L-20, 25
(Double acting, High load, Cutting oil resistant scraper with switch)



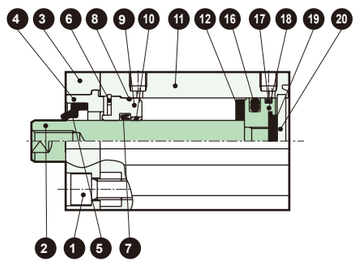
●SSD-KG $\frac{2}{3}$ L-32 to 50
(Double acting, High load, Cutting oil resistant scraper with switch)



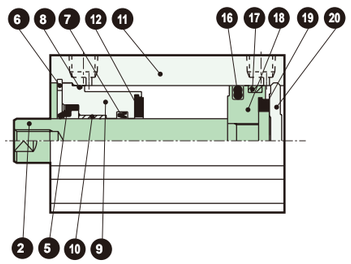
●SSD-KG $\frac{2}{3}$ -16
(Double acting, High load, Cutting oil resistant scraper)



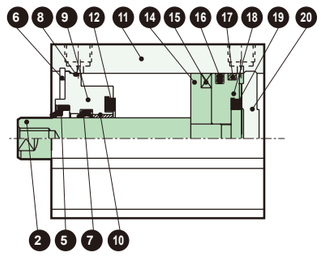
●SSD-KG $\frac{2}{3}$ -20, 25
(Double acting, High load, Cutting oil resistant scraper)



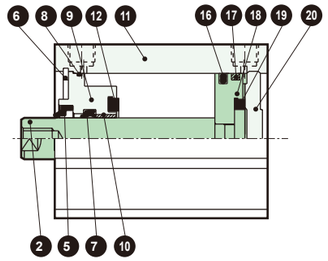
●SSD-KG $\frac{2}{3}$ -32 to 50
(Double acting, High load, Cutting oil resistant scraper)



●SSD-KG $\frac{2}{3}$ L-63 to 100
(Double acting, High load, Cutting oil resistant scraper with switch)



●SSD-KG $\frac{2}{3}$ -63 to 100
(Double acting, High load, Cutting oil resistant scraper)



Material

Part No.	Part Name		Material	Remarks
1	Hexagon Socket Head Cap Screw		Stainless Steel	ø16 to ø25 only
2	Piston Rod		Stainless Steel	Industrial Hard Chrome Plating
3	Adapter (A)		Aluminum Alloy	Alumite
4	Adapter (B)		Aluminum Alloy	Alumite
5	Scraper	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
6	C-type retaining ring (for hole)		Stainless Steel	
7	Rod Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
8	Rod metal gasket	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
9	Rod Metal		Aluminum Alloy	Alumite
10	Bushing		Bearing Alloy	

Part No.	Part Name		Material	Remarks
11	Cylinder Body		Aluminum alloy	Hard Anodized
12	Cushion rubber (R)		Urethane Rubber	
13	Spacer washer		Stainless Steel	
14	Spacer		ø16 to ø50: Special resin ø63 to ø100: Aluminum alloy	
15	Magnet		Plastic	
16	Piston Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
17	Wear Ring		Polyacetal	
18	Piston		Aluminum Alloy	Chromate
19	Cushion rubber (H)		Urethane Rubber	
20	Cover		ø16 to ø25: Stainless steel	
			ø32 to ø100: Aluminum alloy	Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double acting, Single rod, Coil scraper type

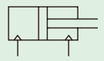
SSD-G1 Series

Compact Cylinder
Double acting, Single rod, Spatter adhesion prevention

SSD-G4 Series

● Bore size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-G4 - 32 - 10 ——— N - LB - I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD-G4L - 32 - 10 - T2YD - R - N - LB - I
1 2 3 4 5 6 7 8

1 Model No. | 2 Bore size | 3 Stroke | 4 Switch Model No. | 5 Number of Switches | 6 Option | 7 Mounting bracket | 8 Accessories

1 Model No.

Code	Content
SSD-G1	Double acting, Single rod, Coil scraper type
SSD-G1L	Double acting, Single rod, Coil scraper type with switch
SSD-G4	Double acting, Single rod, Spatter adhesion prevention type
SSD-G4L	Double acting, Single rod, Spatter adhesion prevention type with switch

2 Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø25 to ø50	1 to 50	Every 1 mm
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 562.

4 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Contact									
Solid State	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
			—		—		T2YDT□	–	

1: For "" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD3
5 m T2YD5

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 565, 566, 569, and 570 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

8 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-G1 - ..... - XP5

SSD-G4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YD□
4
Switch Model No.

Specifications

Item	SSD-G1/G4 SSD-G1L/G4L (with switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.15				0.1		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (No freezing)						
Port Size	M5	Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	+1.0 0						
Operating Piston Speed mm/s	50 to 500				50 to 300		
Cushion	None						
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)						
Allowable absorbed energy J	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore						
		ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard stroke *1	5	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●
	15	●	●	●	●			
	20	●	●	●	●	●	●	●
	25	●	●	●	●			
	30	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
Minimum stroke (mm) *2		1						
Maximum Stroke (mm)		50						
Intermediate stroke *3		Every 1 mm						

***1: If the standard stroke is exceeded, it will be a high load type (K). For specifications, see P. 390, and for outline dimensions, see P. 392 to 400.**

*2: Products less than 10 mm with an AC magnetic field switch cannot be manufactured.

*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***4: For the minimum stroke when using mounting brackets LB and LB2, see P. 565 and 569.**

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	131	222	146	237	162	253	178	269	194	285	209	300	241	332	272	363
ø32	184	298	206	320	228	342	250	364	271	385	293	407	337	451	380	494
ø40	265	408	292	435	318	461	345	488	372	515	398	541	451	594	504	647
ø50	418	612	460	654	502	696	544	738	586	780	629	823	713	907	797	991
ø63	603	882	658	937	–	–	768	1047	–	–	878	1157	989	1268	1099	1378
ø80	1093	1506	1180	1593	–	–	1353	1766	–	–	1526	1939	1700	2113	1873	2286
ø100	1654	2221	1768	2335	–	–	1995	2562	–	–	2223	2790	2450	3017	2678	3245

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push	–	73.6	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	–	56.7	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	–	1.21×10^{2}	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	–	90.5	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	–	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	–	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	–	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	–	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

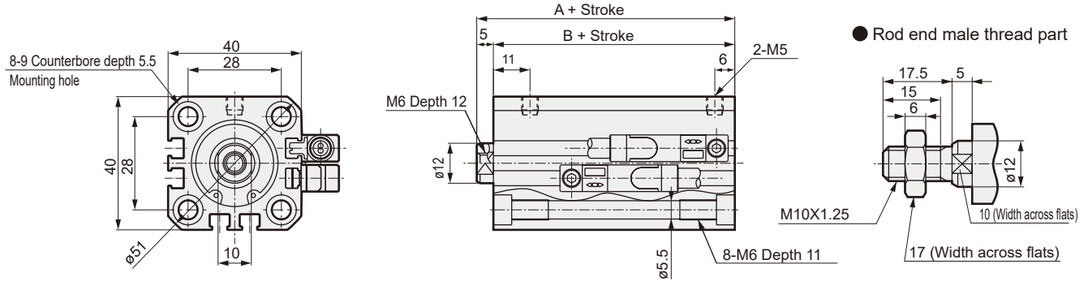
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

Note: Foot type mounting brackets are 2 pcs/set.

Outline Dimension Drawing (Bore size: ø25)

● SSD-G1 (L)/G4 (L)-25



Code / Bore Size (mm)	Dimension without switch A *1	Dimension without switch B *1	Dimension with switch A *1	Dimension with switch B *1
ø25	37.5	32.5	47.5	42.5

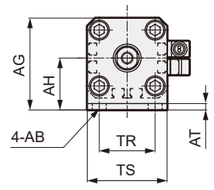
*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. (Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.

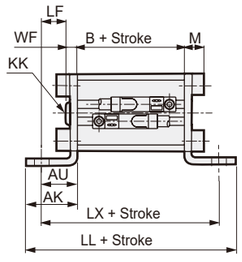
***2: For dimensions with each switch, refer to P. 674 to 681.**

***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

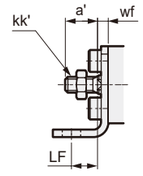
Outline Dimension Drawing (Bore size: ø25)

● Axial Foot Type (LB)



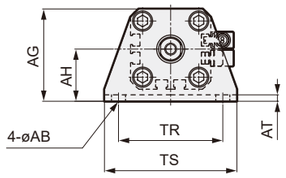


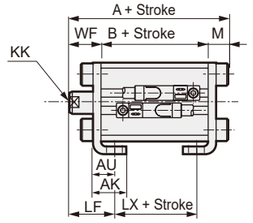
● For rod end male thread



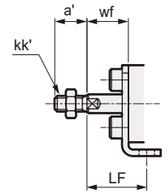
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	42.5	90.5	74.5	32.5	80.5	64.5	17.5	M10×1.25	5	11

● Axial Foot Type (Compact Type) (LB2)





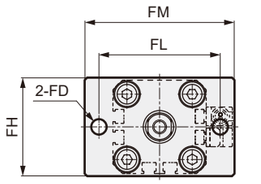
● For rod end male thread

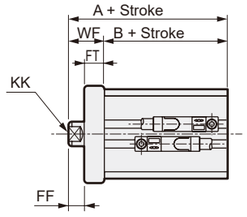


Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	66.7	42.5	27.5	56.7	32.5	17.5	17.5	M10×1.25	15	22.5

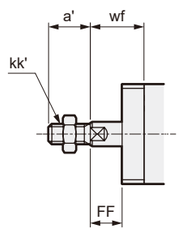
Outline Dimension Drawing (Bore size: ø25)

● Rod Side Flange Type (FA)



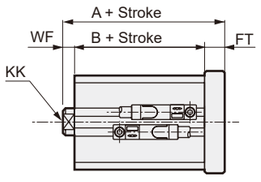


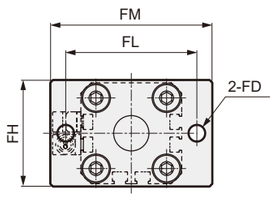
● For rod end male thread



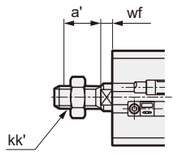
Code / Bore size (mm)	Common dimension					For female thread							For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	57.5	42.5	47.5	32.5	7	17.5	M10×1.25	15

● Head Side Flange Type (FB)





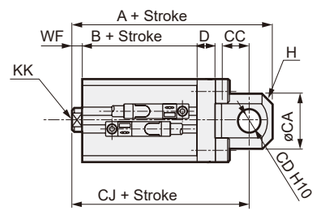
● For rod end male thread

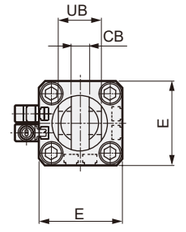


Code / Bore size (mm)	Common dimension					For female thread						For male thread			
	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	
ø25	6.6	42	52	64	8	M6 Depth 12	5	55.5	42.5	45.5	32.5	17.5	M10×1.25	5	

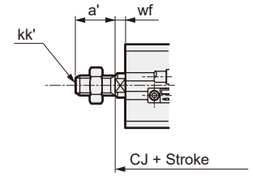
Outline Dimension Drawing (Bore size: ø25)

● Double Knuckle Clevis Type (CB)



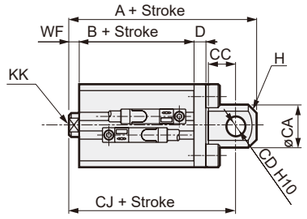


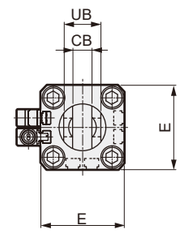
● For rod end male thread



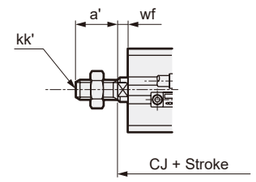
Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø25	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	86.5	42.5	74.5	76.5	32.5	64.5	17.5	M10×1.25	5	74.5	64.5

● Double clevis type (Compact type) (CB2)





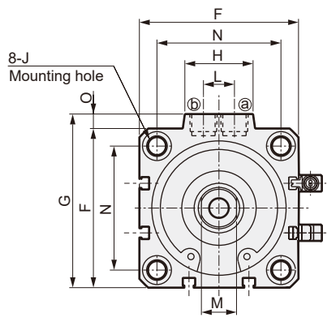
● For rod end male thread

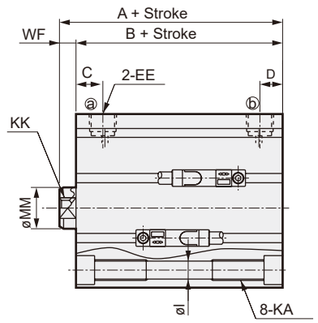


Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø25	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	77.5	42.5	67.5	67.5	32.5	57.5	17.5	M10×1.25	5	67.5	57.5

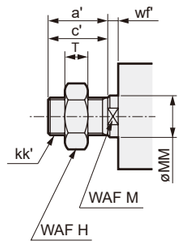
Outline Dimension Drawing (Bore size: ø32 to ø100)

●SSD-G1 (L)/G4 (L)-32 to 100





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	G	H	I
ø32	50	43	40	33	8	8	Rc1/8	45	49.5	24	5.5
ø40	56.5	49.5	46.5	39.5	12	8.5	Rc1/8	52	57	24	5.5
ø50	58.5	50.5	48.5	40.5	10.5	10.5	Rc1/4	64	71	33	6.9
ø63	64	56	54	46	13	11	Rc1/4	77	84	33	8.7
ø80	73.5	63.5	63.5	53.5	16	13	Rc3/8	98	104	38	10.5
ø100	85	73	75	63	23	15	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	Common dimension J	KA	KK	M	MM	N	O	WF
ø32	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	14	16	34	4.5	7
ø40	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	14	16	40	5	7
ø50	11 Counterbore Depth 6.5	M8 depth 13	M10 depth 15	17	20	50	7	8
ø63	14 Counterbore depth 9	M10 depth 25	M10 depth 15	17	20	60	7	8
ø80	17.5 Counterbore depth 11	M12 depth 28	M16 depth 21	22	25	77	6	10
ø100	17.5 Counterbore depth 11	M12 depth 28	M20 depth 27	27	30	94	6.5	12

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

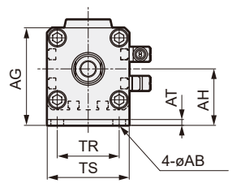
● Rod end male thread part dimension table

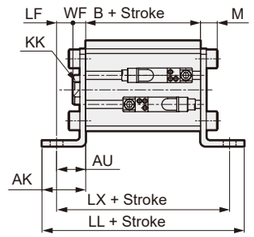
Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

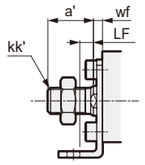
● Axial Foot Type (LB)

· ø32

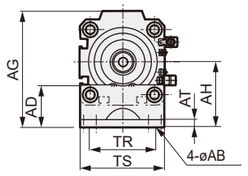


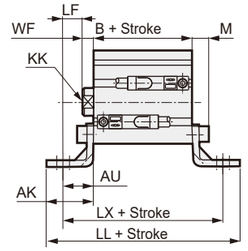


● For rod end male thread

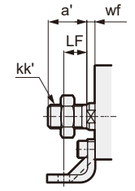


· ø40 to ø100





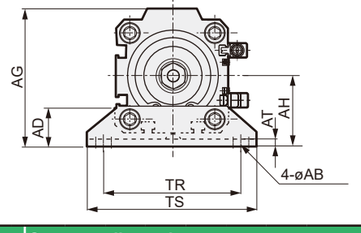
● For rod end male thread

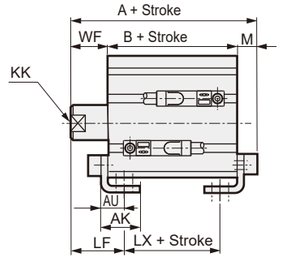


Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	43	91	75	33	81	65	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	56	136	106	46	126	96	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	63.5	163.5	133.5	53.5	153.5	123.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	73	173	143	63	163	133	35.5	M26×1.5	8	27

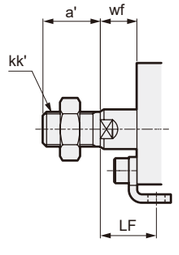
Note: LB cannot be selected when B + stroke is at or less than the value below.
ø80, ø100: 69 or less

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

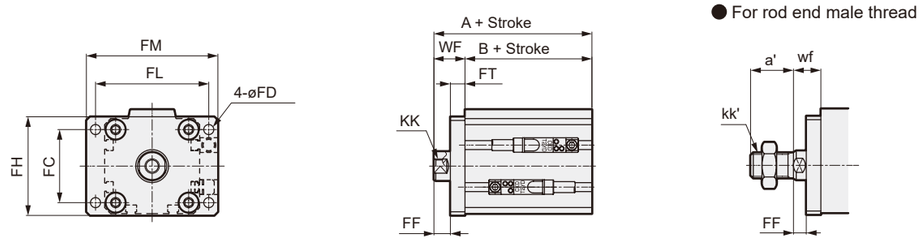


Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	69.2	43	27	59.2	33	17	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	75.7	49.5	33.5	65.7	39.5	23.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	79.7	50.5	27.5	69.7	40.5	17.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	87.2	56	30	77.2	46	20	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	100	63.5	33.5	90	53.5	23.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	113	73	39	103	63	29	35.5	M26×1.5	18	35

Note: LB2 cannot be selected when B + stroke is at or less than the value below.
ø80: 72 or less ø100: 69 or less

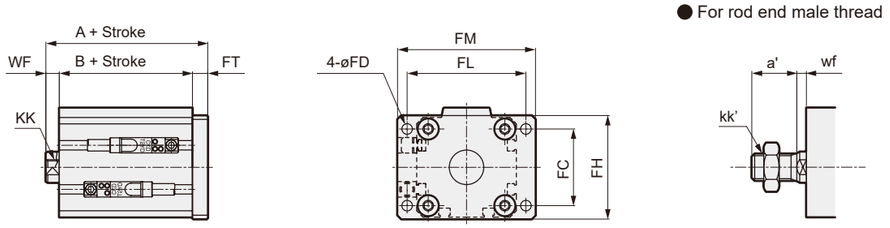
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)



Code	Common dimension						For female thread							For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	60	43	50	33	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	66.5	49.5	56.5	39.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	68.5	50.5	58.5	40.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	74	56	64	46	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	83.5	63.5	73.5	53.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	95	73	85	63	7	35.5	M26×1.5	18

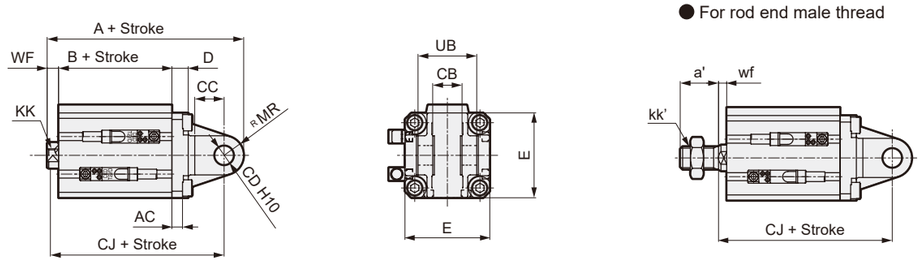
● Head Side Flange Type (FB)



Code	Common dimension						For female thread							For male thread			
Bore size (mm)	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	34	5.5	48	56	65	8	M8 depth 13	7	58	43	48	33	23.5	M14×1.5	5	68	58
ø40	40	5.5	54	62	72	8	M8 depth 13	7	64.5	49.5	54.5	39.5	23.5	M14×1.5	5	76.5	66.5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	67.5	50.5	57.5	40.5	28.5	M18×1.5	5	83.5	73.5
ø63	60	9	80	92	108	9	M10 depth 15	8	73	56	63	46	28.5	M18×1.5	5	91	81
ø80	77	11	99	116	134	11	M16 depth 21	10	84.5	63.5	74.5	53.5	35.5	M22×1.5	8	109.5	99.5
ø100	94	11	117	136	154	11	M20 depth 27	12	96	73	86	63	35.5	M26×1.5	8	126	116

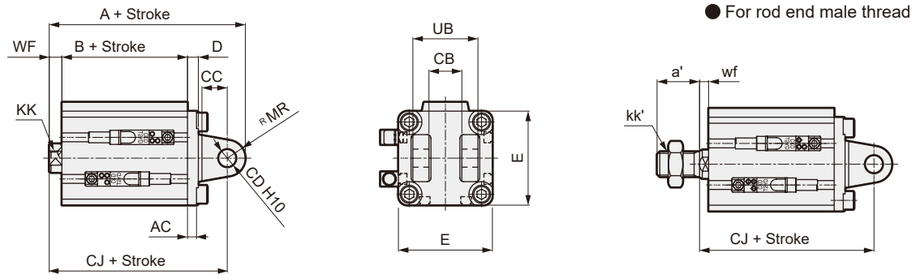
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)



Code	Common dimension								For female thread								For male thread				
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	92	43	80	82	33	70	23.5	M14×1.5	5	78	68
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	100.5	49.5	88.5	90.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	102.5	50.5	90.5	92.5	40.5	80.5	28.5	M18×1.5	5	87.5	77.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	117	56	101	107	46	91	28.5	M18×1.5	5	98	88
ø80	10.5	$28^{+0.4}_{+0.1}$	30	20	14	98	20	$56^{-0.1}_{-0.4}$	M16 depth 21	10	145.5	63.5	125.5	135.5	53.5	115.5	35.5	M22×1.5	8	123.5	113.5
ø100	10.5	$28^{+0.4}_{+0.1}$	30	20	16	117	20	$56^{-0.1}_{-0.4}$	M20 depth 27	12	157	73	137	147	63	127	35.5	M26×1.5	8	133	123

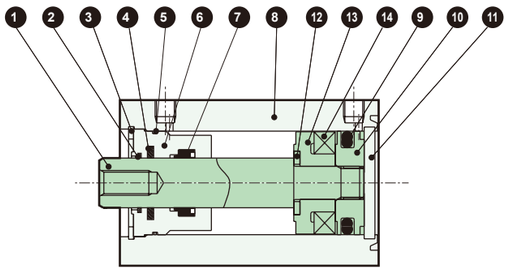
● Double clevis type (Compact type) (CB2)



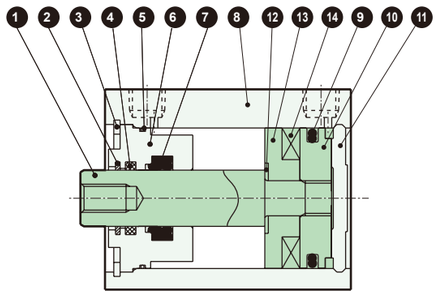
Code	Common dimension								For female thread								For male thread				
Bore size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	80	43	70	70	33	60	23.5	M14×1.5	5	68	58
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	88.5	49.5	78.5	78.5	39.5	68.5	23.5	M14×1.5	5	76.5	66.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	100.5	50.5	86.5	90.5	40.5	76.5	28.5	M18×1.5	5	83.5	73.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	108	56	94	98	46	84	28.5	M18×1.5	5	91	81
ø80	9	$28^{+0.4}_{+0.1}$	27	18	10	98	18	$56^{-0.1}_{-0.3}$	M16 depth 21	10	129.5	63.5	111.5	119.5	53.5	101.5	35.5	M22×1.5	8	109.5	99.5
ø100	12	$32^{+0.4}_{+0.1}$	31	22	13	117	22	$64^{-0.1}_{-0.3}$	M20 depth 27	12	152	73	130	142	63	120	35.5	M26×1.5	8	126	116

Internal Structure Diagram/Material

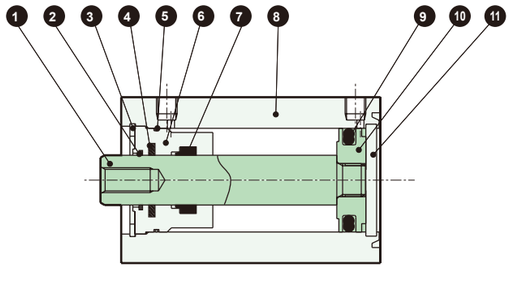
● SSD-G1L-25 (Double acting with coil scraper with switch)
SSD-G4L-25 (Double acting, Spatter adhesion prevention type with switch)



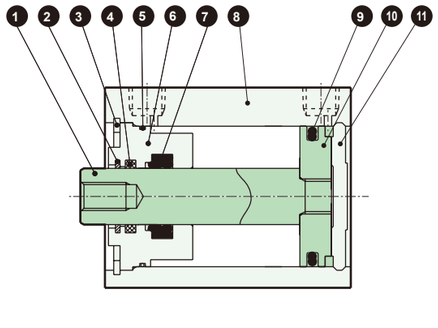
● SSD-G1L-32 to 50 (Double acting with coil scraper with switch)
SSD-G4L-32 to 50 (Double acting, Spatter adhesion prevention type with switch)



● SSD-G1-25 (Double acting with coil scraper)
SSD-G4-25 (Double acting, Spatter adhesion prevention type)



● SSD-G1-32 to 50 (Double acting with coil scraper)
SSD-G4-32 to 50 (Double acting, Spatter adhesion prevention type)

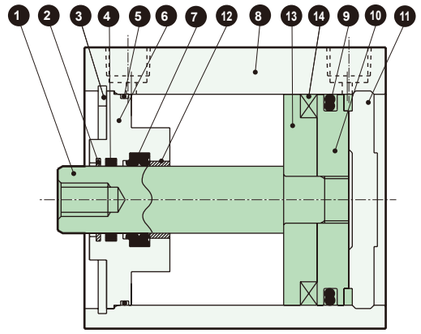


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	8	Cylinder Body	Aluminum Alloy	Hard Anodized
				9	Piston Packing	Nitrile Rubber	
2	Coil scraper	Phosphor bronze		10	Piston	Aluminum Alloy	Chromate
3	C-type retaining ring for bore	Steel	Zinc phosphate	11	Cover	ø25: Stainless steel ø32 to ø50: Aluminum alloy	Anodized (ø32 to ø50)
4	Lube keeper	Special rubber	G4, G4L only				
5	Rod metal gasket	Nitrile Rubber		12	Spacer washer	Stainless Steel	
6	Rod Metal	Aluminum Alloy	Alumite	13	Spacer	Special Resin	
7	Rod Packing	Nitrile Rubber		14	Magnet	Plastic	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

● SSD-G1L-63 to 100 (Double acting with coil scraper with switch)
SSD-G4L-63 to 100 (Double acting, Spatter adhesion prevention type with switch)



● SSD-G1-63 to 100 (Double acting with coil scraper)
SSD-G4-63 to 100 (Double acting, Spatter adhesion prevention type)

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	8	Cylinder Body	Aluminum Alloy	Hard Anodized
2	Coil scraper	Phosphor bronze		9	Piston Packing	Nitrile Rubber	
3	C-type retaining ring for bore	Steel	Zinc phosphate	10	Piston	Aluminum Alloy	Chromate
4	Lube keeper	Special rubber	G4, G4L only	11	Cover	Aluminum Alloy	Alumite
5	Rod metal gasket	Nitrile Rubber		12	Bushing	Bearing Alloy	
6	Rod Metal	Aluminum Alloy		13	Spacer	Aluminum Alloy	Chromate
7	Rod Packing	Nitrile Rubber	Chromate	14	Magnet	Plastic	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Single Rod, High Load, Coil Scraper Type

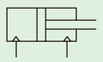
SSD-KG1 Series

Compact Cylinder
Double Acting, Single Rod, High Load, Spatter Adhesion Prevention

SSD-KG4 Series

● Bore size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-KG4 - 32 - 10 ——— N - LB - I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD-KG4L - 32 - 10 - T2YD - R - N - LB - I
1 2 3 4 5 6 7 8

1 Model No. | 2 Bore size | 3 Stroke | 4 Switch Model No. | 5 Number of Switches | 6 Option | 7 Mounting bracket | 8 Accessories

1 Model No.

Code	Content
SSD-KG1	Double Acting, Single Rod, High Load, Coil Scraper Type
SSD-KG1L	Double Acting, Single Rod, High Load, Coil Scraper Type with Switch
SSD-KG4	Double Acting, Single Rod, High Load, Spatter Adhesion Prevention Type
SSD-KG4L	Double Acting, Single Rod, High Load, Spatter Adhesion Prevention Type with Switch

2 Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø25 to ø50	1 to 300	Every 1 mm
ø63 to ø100	1 to 300	

Note: For details on stroke, please refer to P. 576.

4 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
			—		—		T2YDT□	–	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD3
5 m T2YD5

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 579, 580, 584, and 585 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

8 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-KG1 - ..... - XP5

SSD-KG4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YD
4

Switch Model No.

Specifications

Item	SSD-KG1/KG4 SSD-KG1L/KG4L (with switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.15				0.1		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (No freezing)						
Port Size	M5	Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	+2.0 0						
Operating Piston Speed mm/s	50 to 500				50 to 300		
Cushion	Rubber Cushion						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore						
		ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	10	●	●	●	●	●	●	●
	15	●	●	●	●			
	20	●	●	●	●	●	●	●
	25	●	●	●	●			
	30	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
	60	●	●	●	●	●	●	●
	70	●	●	●	●	●	●	●
	80	●	●	●	●	●	●	●
	90	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●

Minimum Stroke (mm) *1	1
Maximum Stroke (mm)	300
Intermediate Stroke *2	Every 1 mm

*1: Products less than 10 mm with an AC magnetic field switch cannot be manufactured.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	10		15		20		25		30		40		50		60		70		80		90		100	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	162	253	178	269	194	285	209	300	226	317	258	349	290	381	322	413	354	445	386	477	418	509	450	541
ø32	249	363	270	384	292	406	314	428	336	450	379	493	422	536	465	579	508	622	551	665	594	708	637	751
ø40	345	488	372	515	398	541	424	567	451	594	504	647	557	700	610	753	663	806	716	859	769	912	822	965
ø50	549	743	591	785	634	828	677	871	718	912	802	996	886	1080	970	1164	1054	1248	1138	1332	1222	1416	1306	1500
ø63	782	1061	-	-	892	1171	-	-	1003	1282	1113	1392	1223	1502	1333	1612	1443	1722	1553	1832	1663	1942	1773	2052
ø80	1382	1795	-	-	1555	1968	-	-	1729	2142	1902	2315	2075	2488	2248	2661	2421	2834	2594	3007	2767	3180	2940	3353
ø100	2029	2596	-	-	2257	2824	-	-	2484	3051	2712	3279	2940	3507	3168	3735	3396	3963	3624	4191	3852	4419	4080	4647

(Unit: g)

Stroke (mm) / Bore Size (mm)	110		120		130		140		150		160		170		180		190		200	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	482	573	514	605	546	637	578	669	610	701	642	733	674	765	706	797	738	829	770	861
ø32	680	794	723	837	766	880	809	923	852	966	894	1008	937	1051	980	1094	1023	1137	1066	1180
ø40	875	1018	928	1071	981	1124	1034	1177	1087	1230	1140	1283	1193	1336	1246	1389	1299	1442	1352	1495
ø50	1390	1584	1474	1668	1558	1752	1642	1836	1726	1920	1824	2018	1909	2103	1994	2188	2079	2273	2164	2358
ø63	1883	2162	1993	2272	2103	2382	2213	2492	2323	2602	2433	2712	2543	2822	2653	2932	2763	3042	2873	3152
ø80	3113	3526	3286	3699	3459	3872	3632	4045	3805	4218	3978	4391	4151	4564	4324	4737	4497	4910	4670	5083
ø100	4308	4875	4536	5103	4764	5331	4992	5559	5220	5787	5448	6015	5676	6243	5904	6471	6132	6699	6360	6927

(Unit: g)

Stroke (mm) / Bore Size (mm)	210		220		230		240		250		260		270		280		290		300	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	813	893	845	925	877	957	909	989	941	1021	973	1053	1005	1085	1037	1117	1069	1149	1101	1181
ø32	1109	1223	1152	1266	1195	1309	1238	1352	1281	1395	1324	1438	1367	1481	1410	1524	1453	1567	1496	1610
ø40	1405	1548	1458	1601	1511	1654	1564	1707	1617	1760	1670	1813	1723	1866	1776	1919	1829	1972	1882	2025
ø50	2249	2443	2334	2528	2419	2613	2504	2698	2589	2783	2674	2868	2759	2953	2844	3038	2929	3123	3014	3208
ø63	2982	3261	3092	3371	3202	3481	3312	3591	3422	3701	3532	3811	3642	3921	3752	4031	3862	4141	3972	4251
ø80	4842	5255	5015	5428	5188	5601	5361	5774	5534	5947	5707	6120	5880	6293	6053	6466	6226	6639	6399	6812
ø100	6589	7156	6817	7384	7045	7612	7273	7840	7501	8068	7729	8296	7957	8524	8185	8752	8413	8980	8641	9208

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push	–	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	–	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	–	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	–	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	–	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	–	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	–	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	–	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

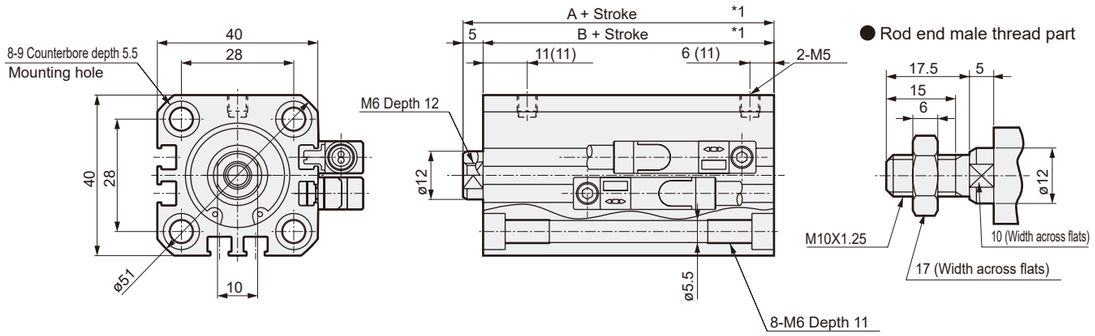
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

Outline Dimension Drawing (Bore size: ø25)

● SSD-KG1 (L)/KG4 (L)-25



Code / Bore Size (mm)	Dimension without switch A *1	Dimension without switch B *1	Dimension with switch A *1	Dimension with switch B *1
ø25	42.5	37.5	52.5	47.5

● Table 2 *2

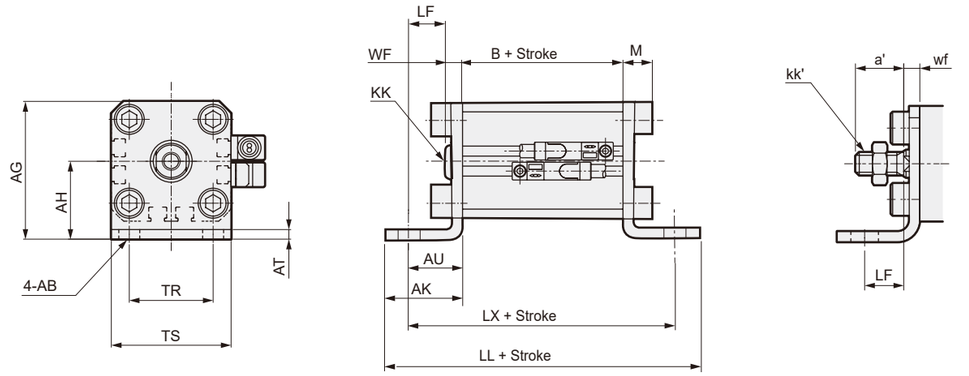
Code / Bore Size (mm)	Dimension without switch A *1	Dimension without switch B *1	Dimension with switch A *1	Dimension with switch B *1
ø25	56	51	66	61

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.
*2: When the stroke exceeds 150, the A and B dimensions are the values in Table 2. Also, there is no 9 counterbore.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**
***4: For dimensions with each switch, refer to P. 674 to 681.**

Outline Dimension Drawing (Bore size: ø25)

● Axial Foot Type (LB)

● For rod end male thread



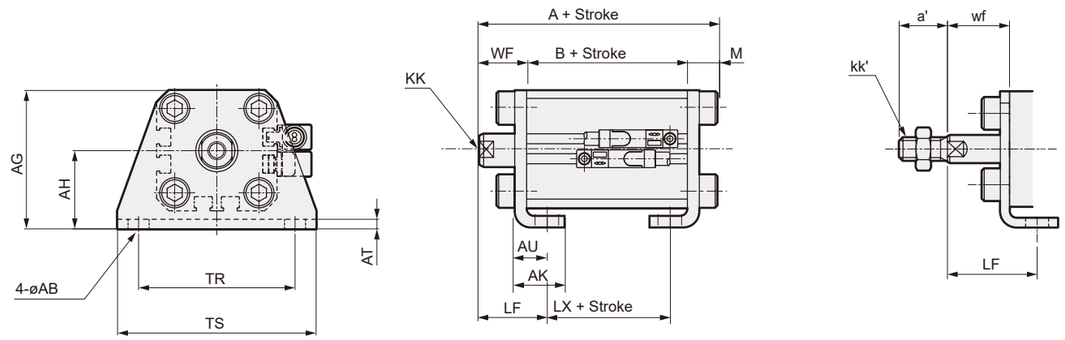
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	47.5	95.5	79.5	37.5	85.5	69.5	17.5	M10×1.25	5	11

*1: If the stroke exceeds 150, the dimensions will be as follows.

Code / Bore size (mm)	For female thread With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX
ø25	61	109	93	51	99	83

● Axial Foot Type (Compact Type) (LB2)

● For rod end male thread



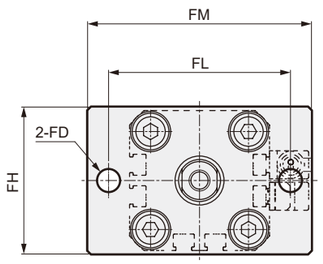
Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	71.7	47.5	32.5	61.7	37.5	22.5	17.5	M10×1.25	15	22.5

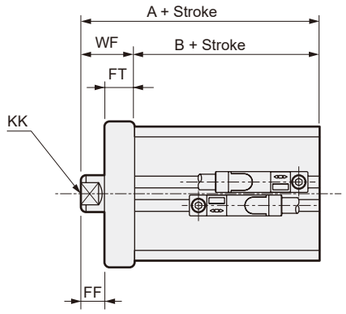
*1: If the stroke exceeds 150, the dimensions will be as follows.

Code / Bore size (mm)	For female thread With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX
ø25	85.2	61	46	75.2	51	36

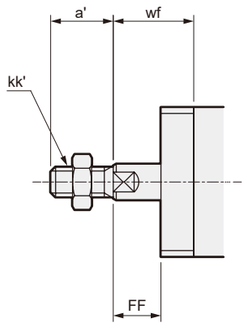
Outline Dimension Drawing (Bore size: ø25)

● Rod Side Flange Type (FA)





● For rod end male thread

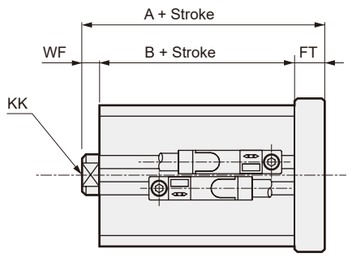


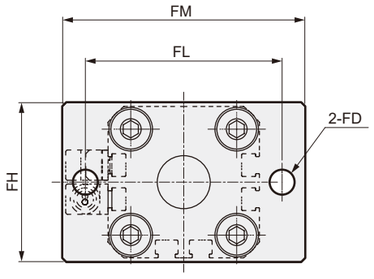
Code / Bore size (mm)	Common dimension					For female thread							For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	62.5	47.5	52.5	37.5	7	17.5	M10×1.25	15

*1: If the stroke exceeds 150, the dimensions will be as follows.

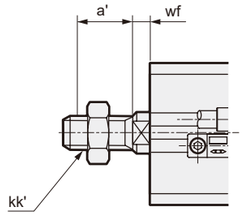
Code / Bore size (mm)	For female thread			
	With Switch A	With Switch B	Without Switch A	Without Switch B
ø25	76	61	66	51

● Head Side Flange Type (FB)





● For rod end male thread



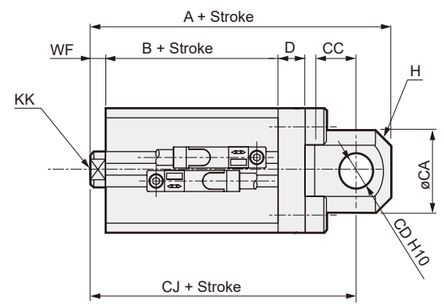
Code / Bore size (mm)	Common dimension					For female thread							For male thread			
	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B		a'	kk'	wf	
ø25	6.6	42	52	64	8	M6 Depth 12	5	60.5	47.5	50.5	37.5		17.5	M10×1.25	5	

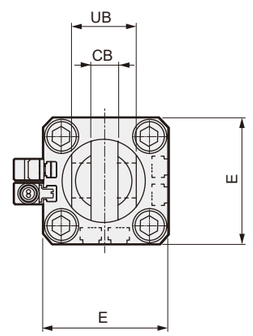
*1: If the stroke exceeds 150, the dimensions will be as follows.

Code / Bore size (mm)	For female thread			
	With Switch A	With Switch B	Without Switch A	Without Switch B
ø25	74	61	64	51

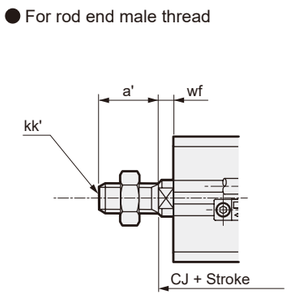
Outline Dimension Drawing (Bore size: ø25)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

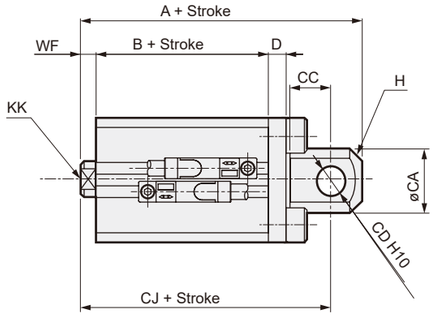


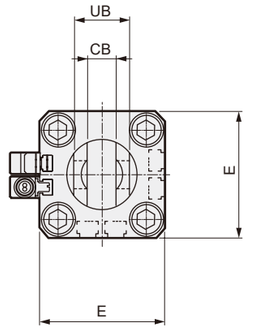
Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø25	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{-0.1}_{-0.4}$	M6 Depth 12	5	91.5	47.5	79.5	81.5	37.5	69.5	17.5	M10×1.25	5	79.5	69.5

*1: If the stroke exceeds 150, the dimensions will be as follows.

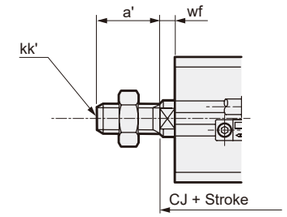
Code / Bore size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø25	105	61	93	95	51	83	93	83

● Double clevis type (Compact type) (CB2)





● For rod end male thread



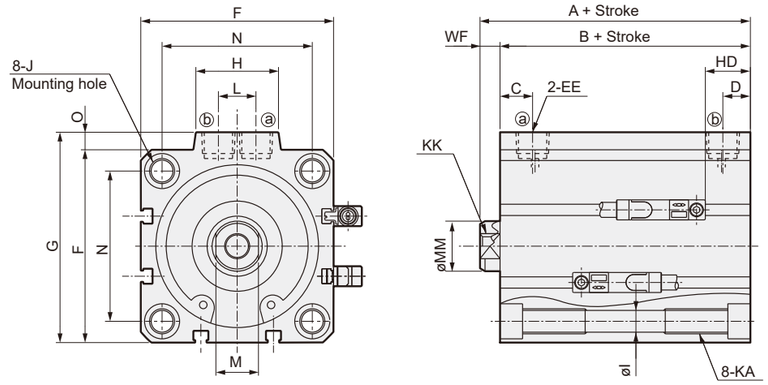
Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø25	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{-0.1}_{-0.3}$	M6 Depth 12	5	82.5	47.5	72.5	72.5	37.5	62.5	17.5	M10×1.25	5	72.5	62.5

*1: If the stroke exceeds 150, the dimensions will be as follows.

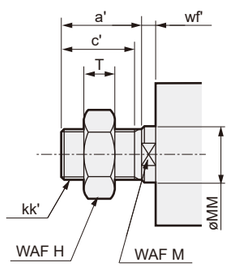
Code / Bore size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø25	96	61	86	86	51	76	86	76

Outline Dimension Drawing (Bore size: ø32 to ø100)

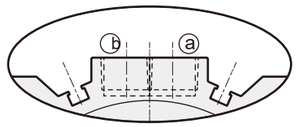
● SSD-KG1 (L)/KG4 (L)-32 to 100



● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D *2	EE	F	G	H	I	J	KA	KK
ø32	60	53	50	43	8	8 (8)	Rc1/8	45	49.5	24	5.5	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13
ø40	66.5	59.5	56.5	49.5	12	8.5 (12)	Rc1/8	52	57	24	5.5	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13
ø50	68.5	60.5	58.5	50.5	10.5	10.5 (10.5)	Rc1/4	64	71	33	6.9	11 Counterbore Depth 6.5	M8 depth 13	M10 depth 15
ø63	74	66	64	56	13	11 (13)	Rc1/4	77	84	33	8.7	14 Counterbore depth 9	M10 depth 25	M10 depth 15
ø80	83.5	73.5	73.5	63.5	16	13 (16)	Rc3/8	98	104	38	10.5	17.5 Counterbore depth 11	M12 depth 28	M16 depth 21
ø100	95	83	85	73	23	15 (23)	Rc3/8	117	123.5	38	10.5	17.5 Counterbore depth 11	M12 depth 28	M20 depth 27

Code / Bore Size (mm)	Common dimension L	M	MM	N	O	WF
ø32	10	14	16	34	4.5	7
ø40	10	14	16	40	5	7
ø50	15	17	20	50	7	8
ø63	15	17	20	60	7	8
ø80	15	22	25	77	6	10
ø100	15	27	30	94	6.5	12

*1: When calculating A + stroke and B + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it.
(Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.

*2: For ø32 to ø50: 150 strokes, ø63 to ø100: When exceeding 200 strokes A. The B dimension is the value in Table 1. There is no counterbore J.

***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

***4: For dimensions with each switch, refer to P. 674 to 681.**

Table 1 *2

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1
ø32	67.5	60.5
ø40	76	69
ø50	82	74
ø63	84	76
ø80	93.5	83.5
ø100	105	93

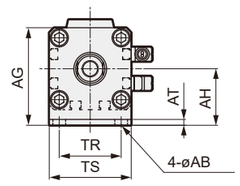
● Rod end male thread part dimension table

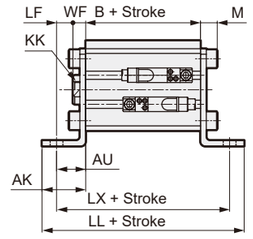
Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

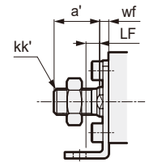
● Axial Foot Type (LB)

· ø32

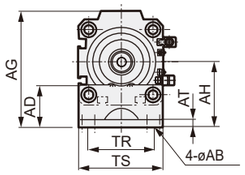


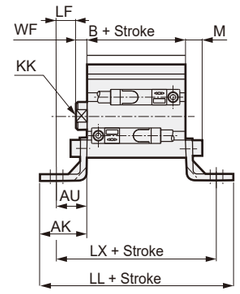


● For rod end male thread

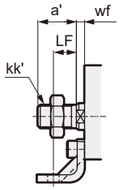


· ø40 to ø100





● For rod end male thread



Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	53	101	85	43	91	75	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	59.5	117.5	97.5	49.5	107.5	87.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	60.5	128.5	104.5	50.5	118.5	94.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	66	146	116	56	136	106	28.5	M18×1.5	5	20
ø80	13	42	117	61.5	50	6	35	77	98	18	M16 depth 21	10	25	73.5	173.5	143.5	63.5	163.5	133.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	83	183	153	73	173	143	35.5	M26×1.5	8	27

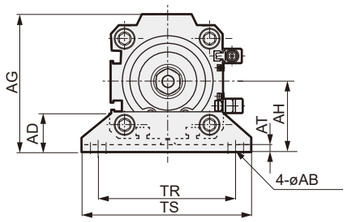
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

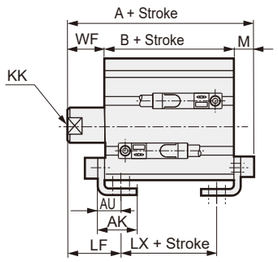
Code / Bore size (mm)	For female thread With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX
ø32	60.5	108.5	92.5	50.5	98.5	82.5
ø40	69	127	107	59	117	97
ø50	74	142	118	64	132	108
ø63	76	156	126	66	146	116
ø80	83.5	183.5	153.5	73.5	173.5	143.5
ø100	93	193	163	83	183	153

*2: If B + stroke is less than or equal to the value below, LB cannot be selected. ø80: 69 or less

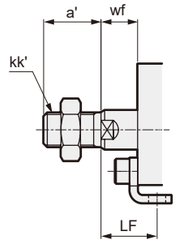
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



Code / Bore size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	79.2	53	37	69.2	43	27	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	85.7	59.5	43.5	75.7	49.5	33.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	89.7	60.5	37.5	79.7	50.5	27.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	97.2	66	40	87.2	56	30	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	110	73.5	43.5	100	63.5	33.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	123	83	49	113	73	39	35.5	M26×1.5	18	35

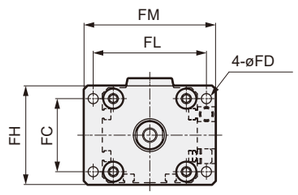
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

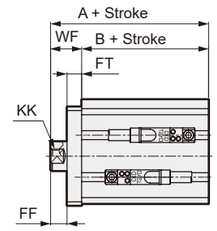
Code / Bore size (mm)	For female thread					
	With Switch			Without Switch		
	A	B	LX	A	B	LX
ø32	86.7	60.5	44.5	76.7	50.5	34.5
ø40	95.2	69	53	85.2	59	43
ø50	103.2	74	51	93.2	64	41
ø63	107.2	76	50	97.2	66	40
ø80	120	83.5	53.5	110	73.5	43.5
ø100	133	93	59	123	83	49

*2: If B + Stroke is less than or equal to the values below, LB2 cannot be selected. ø80: 72 or less

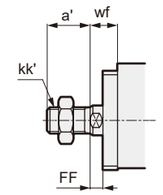
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)





● For rod end male thread



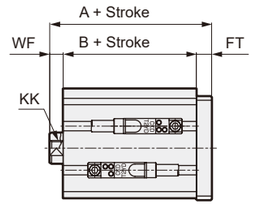
Code / Bore size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	70	53	60	43	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	76.5	59.5	66.5	49.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	78.5	60.5	68.5	50.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	84	66	74	56	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	93.5	73.5	83.5	63.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	105	83	95	73	7	35.5	M26×1.5	18

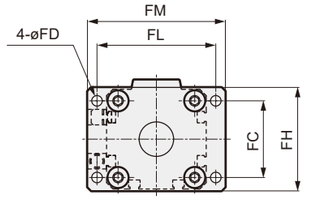
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

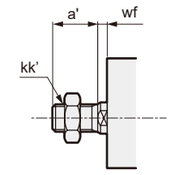
Code / Bore size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	77.5	60.5	67.5	50.5
ø40	86	69	76	59
ø50	92	74	82	64
ø63	94	76	84	66
ø80	103.5	83.5	93.5	73.5
ø100	115	93	105	83

● Head Side Flange Type (FB)

● For rod end male thread







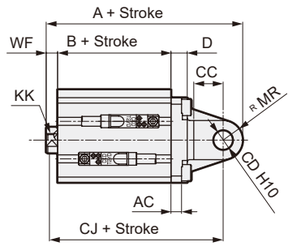
Code / Bore size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf
ø32	34	5.5	48	56	65	8	M8 depth 13	7	68	53	58	43	23.5	M14×1.5	5
ø40	40	5.5	54	62	72	8	M8 depth 13	7	74.5	59.5	64.5	49.5	23.5	M14×1.5	5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	77.5	60.5	67.5	50.5	28.5	M18×1.5	5
ø63	60	9	80	92	108	9	M10 depth 15	8	83	66	73	56	28.5	M18×1.5	5
ø80	77	11	99	116	134	11	M16 depth 21	10	94.5	73.5	84.5	63.5	35.5	M22×1.5	8
ø100	94	11	117	136	154	11	M20 depth 27	12	106	83	96	73	35.5	M26×1.5	8

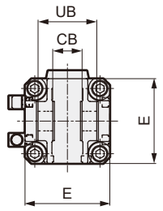
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	75.5	60.5	65.5	50.5
ø40	84	69	74	59
ø50	91	74	81	64
ø63	93	76	83	66
ø80	104.5	83.5	94.5	73.5
ø100	116	93	106	83

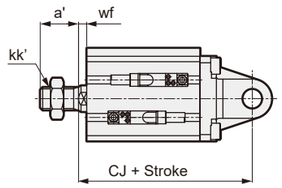
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

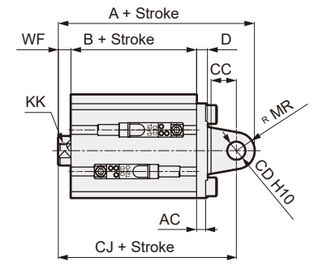


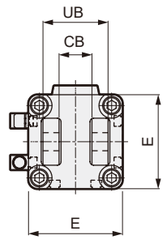
Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	9.5	$10^{+0.4}_{+0.1}$	16	12	10	45	12	$21^{-0.1}_{-0.4}$	M8 depth 13	7	102	53	90	92	43	80	23.5	M14×1.5	5	88	78
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	110.5	59.5	98.5	100.5	49.5	88.5	23.5	M14×1.5	5	96.5	86.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	112.5	60.5	100.5	102.5	50.5	90.5	28.5	M18×1.5	5	97.5	87.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	127	66	111	117	56	101	28.5	M18×1.5	5	108	98
ø80	10.5	$28^{+0.4}_{+0.1}$	30	20	14	98	20	$56^{-0.1}_{-0.4}$	M16 depth 21	10	155.5	73.5	135.5	145.5	63.5	125.5	35.5	M22×1.5	8	133.5	123.5
ø100	10.5	$28^{+0.4}_{+0.1}$	30	20	16	117	20	$56^{-0.1}_{-0.4}$	M20 depth 27	12	167	83	147	157	73	137	35.5	M26×1.5	8	143	133

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

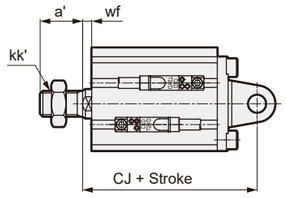
Code / Bore size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	109.5	60.5	97.5	99.5	50.5	87.5	95.5	85.5
ø40	120	69	108	110	59	98	106	96
ø50	126	74	114	116	64	104	111	101
ø63	137	76	121	127	66	111	118	108
ø80	165.5	83.5	145.5	155.5	73.5	135.5	143.5	133.5
ø100	177	93	157	167	83	147	153	143

● Double clevis type (Compact type) (CB2)





● For rod end male thread



Code / Bore size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	4.5	$18^{+0.4}_{+0.1}$	14	10	5	45	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	90	53	80	80	43	70	23.5	M14×1.5	5	78	68
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	98.5	59.5	88.5	88.5	49.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	110.5	60.5	96.5	100.5	50.5	86.5	28.5	M18×1.5	5	93.5	83.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	118	66	104	108	56	94	28.5	M18×1.5	5	101	91
ø80	9	$28^{+0.4}_{+0.1}$	27	18	10	98	18	$56^{-0.1}_{-0.3}$	M16 depth 21	10	139.5	73.5	121.5	129.5	63.5	111.5	35.5	M22×1.5	8	119.5	109.5
ø100	12	$32^{+0.4}_{+0.1}$	31	22	13	117	22	$64^{-0.1}_{-0.3}$	M20 depth 27	12	162	83	140	152	73	130	35.5	M26×1.5	8	136	126

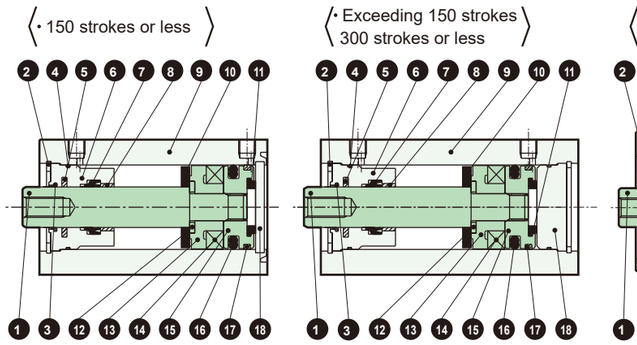
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	97.5	60.5	87.5	87.5	50.5	77.5	85.5	75.5
ø40	108	69	98	98	59	88	96	86
ø50	124	74	110	114	64	100	107	97
ø63	128	76	114	118	66	104	111	101
ø80	149.5	83.5	131.5	139.5	73.5	121.5	129.5	119.5
ø100	172	93	150	162	83	140	146	136

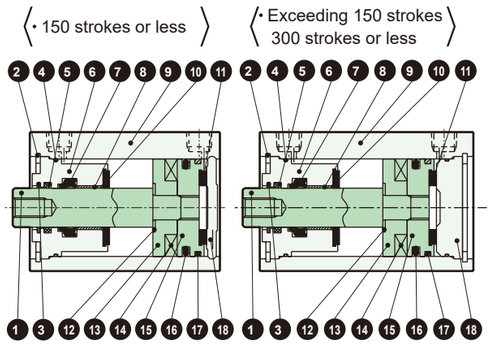
MEMO

Internal Structure Diagram/Material

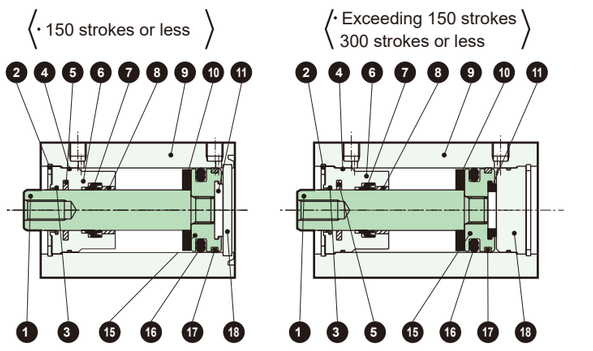
- SSD-KG1L-25 (Double acting, High load type with coil scraper with switch)
- SSD-KG4L-25 (Double acting, High load type, Spatter adhesion prevention type with switch)



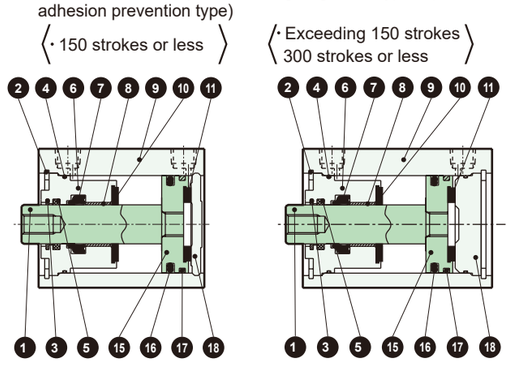
- SSD-KG1L-32 to 50 (Double acting, High load type with coil scraper with switch)
- SSD-KG4L-32 to 50 (Double acting, High load type, Spatter adhesion prevention type with switch)



- SSD-KG1-25 (Double acting, High load type with coil scraper)
- SSD-KG4-25 (Double acting, High load type, Spatter adhesion prevention type)



- SSD-KG1-32 to 50 (Double acting, High load type with coil scraper)
- SSD-KG4-32 to 50 (Double acting, High load type, Spatter adhesion prevention type)



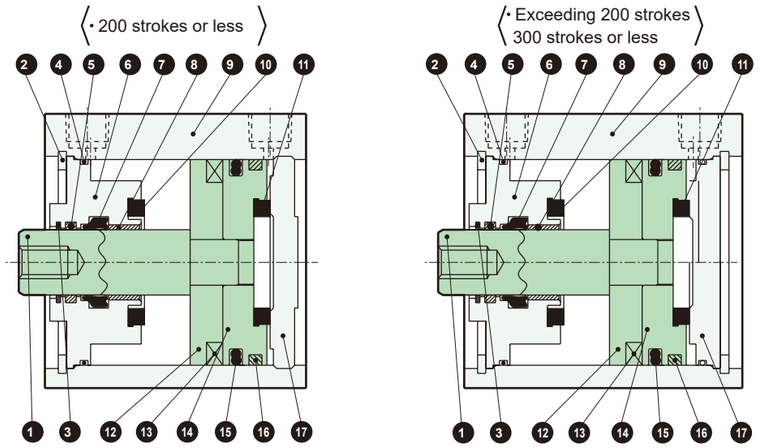
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	10	Cushion rubber R	Urethane Rubber	
				11	Cushion rubber H	Urethane Rubber	
2	C-type retaining ring for bore	Steel	Zinc phosphate	12	Spacer washer	Stainless Steel	
3	Coil scraper	Phosphor bronze		13	Spacer	Special Resin	
4	Rod metal gasket	Nitrile Rubber		14	Magnet	Plastic	
5	Lube keeper	Special rubber	G4 only	15	Piston	Aluminum Alloy	Chromate
6	Rod Metal	Special aluminum	Alumite	16	Piston Packing	Nitrile Rubber	
7	Rod Packing	Nitrile Rubber		17	Wear Ring	Polyacetal	
8	Bushing	Bearing Alloy		18	Cover	ø25: Stainless steel (*1) ø32 to ø50: Aluminum alloy	ø32 to ø50: Chromate
9	Cylinder Body	Aluminum Alloy	Hard Anodized				

Note: For cover of ø25 long stroke type (150 mm and over stroke), Aluminum Alloy, Remarks Chromate-treated.

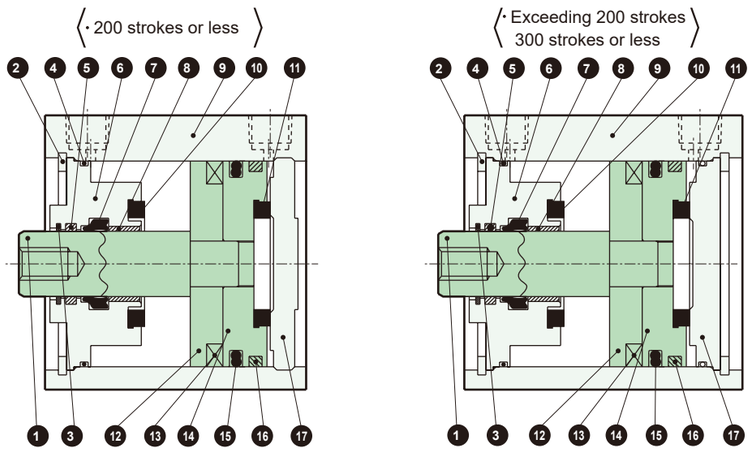
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material

- SSD-KG1L-63 to 100 (Double acting, High load type with coil scraper with switch)
- SSD-KG4L-63 to 100 (Double acting, High load type, Spatter adhesion prevention type with switch)

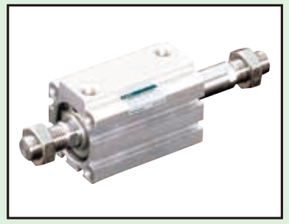


- SSD-KG1-63 to 100 (Double acting, High load type with coil scraper)
- SSD-KG4-63 to 100 (Double acting, High load type, Spatter adhesion prevention type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	10	Cushion rubber R	Urethane Rubber	
2	C-type retaining ring for bore	Steel	Zinc phosphate	11	Cushion rubber H	Urethane Rubber	
3	Coil scraper	Phosphor bronze		12	Spacer	Aluminum Alloy	Chromate
4	Rod metal gasket	Nitrile Rubber		13	Magnet	Plastic	
5	Lube keeper	Special rubber	KG4, KG4L only	14	Piston	Aluminum Alloy	Chromate
6	Rod Metal	Aluminum Alloy	Chromate	15	Piston Packing	Nitrile Rubber	
7	Rod Packing	Nitrile Rubber		16	Wear Ring	Polyacetal	
8	Bushing	Bearing Alloy		17	Cover	Aluminum Alloy	Chromate
9	Cylinder Body	Aluminum Alloy	Hard Anodized				

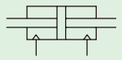
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Double Rod, Coil Scraper Type
SSD-DG1 Series

Compact Cylinder
Double Acting, Double Rod, Spatter Adhesion Prevention
SSD-DG4 Series

● Bore size: ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-DG4 - 32 - 10 ——— N - LB - I
1 2 3 6 7 8

With Switch
(Built-in magnet for switch)

SSD-DG4L - 32 - 10 - T2YD - R - N - LB - I
1 2 3 4 5 6 7 8

1 Model No. | 2 Bore size | 3 Stroke | 4 Switch Model No. | 5 Number of Switches | 6 Option | 7 Mounting bracket | 8 Accessories

1 Model No.

Code	Content
SSD-DG1	Double Acting, Double Rod, Coil Scraper Type
SSD-DG1L	Double Acting, Double Rod, Coil Scraper Type with Switch
SSD-DG4	Double Acting, Double Rod, Spatter Adhesion Prevention Type
SSD-DG4L	Double Acting, Double Rod, Spatter Adhesion Prevention Type with Switch

2 Bore Size (mm)

Code	Content
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø25 to ø50	1 to 50	Every 1 mm
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 592.

4 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Contact	2-Color for AC Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2YD□	–	
Solid State			—		—		T2YDT□	–	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD3
5 m T2YD5

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

7 Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 595, 596, 598, and 599 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

8 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-DG1 - ..... - XP5
SSD-DG4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T2YD
4

4 Switch Model No.

Specifications

Item	SSD-DG1/DG4 SSD-DG1L/DG4L (with switch)						
Bore size mm	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type						
Operating Fluid	Compressed Air						
Max. Operating Pressure MPa	1.0						
Min. Operating Pressure MPa	0.2				0.15		
Proof pressure MPa	1.6						
Ambient Temperature °C	-10 to 60 (However, no freezing)						
Port Size	Rc1/8			Rc1/4		Rc3/8	
Stroke tolerance mm	+1.0 0						
Operating Piston Speed mm/s	50 to 500					50 to 300	
Cushion	None						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Allowable absorbed energy J	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

	Stroke (mm)	Applicable Bore						
		ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●
	15	●	●	●	●			
	20	●	●	●	●	●	●	●
	25	●	●	●	●			
	30	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1						
Maximum Stroke (mm)		50						
Intermediate Stroke *2		Every 1 mm						

*1: Products less than 10 mm with an AC magnetic field switch cannot be manufactured.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		40		50	
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø25	234	325	249	340	265	356	281	372	297	388	313	403	344	435	375	466
ø32	308	423	354	468	399	514	446	560	490	605	537	651	631	741	725	831
ø40	446	589	473	616	499	642	526	669	553	696	579	732	632	775	685	828
ø50	696	890	746	940	796	989	846	1041	896	1089	946	1139	1046	1239	1149	1343
ø63	1128	1254	1203	1567	-	-	1353	1717	-	-	1503	1867	1654	2018	1804	2168
ø80	1995	1925	2112	2042	-	-	2345	2798	-	-	2578	3031	2812	3275	3045	3508
ø100	2984	3611	3153	3775	-	-	3490	4072	-	-	3828	4440	4165	4767	4503	5095

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø25	Push	-	98.2	1.47×10^{2}	1.96×10^{2}	2.45×10^{2}	2.95×10^{2}	3.44×10^{2}	3.93×10^{2}	4.42×10^{2}	4.91×10^{2}
	Pull	-	75.6	1.13×10^{2}	1.51×10^{2}	1.89×10^{2}	2.27×10^{2}	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	-	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.02×10^{2}	4.83×10^{2}	5.63×10^{2}	6.43×10^{2}	7.24×10^{2}	8.04×10^{2}
	Pull	-	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.02×10^{2}	3.62×10^{2}	4.22×10^{2}	4.83×10^{2}	5.43×10^{2}	6.03×10^{2}
ø40	Push	-	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

Mounting Bracket Model No. Notation Method

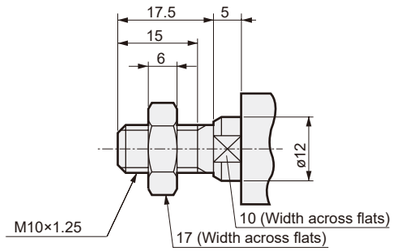
Bore Size (mm) / Mounting bracket	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA)	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

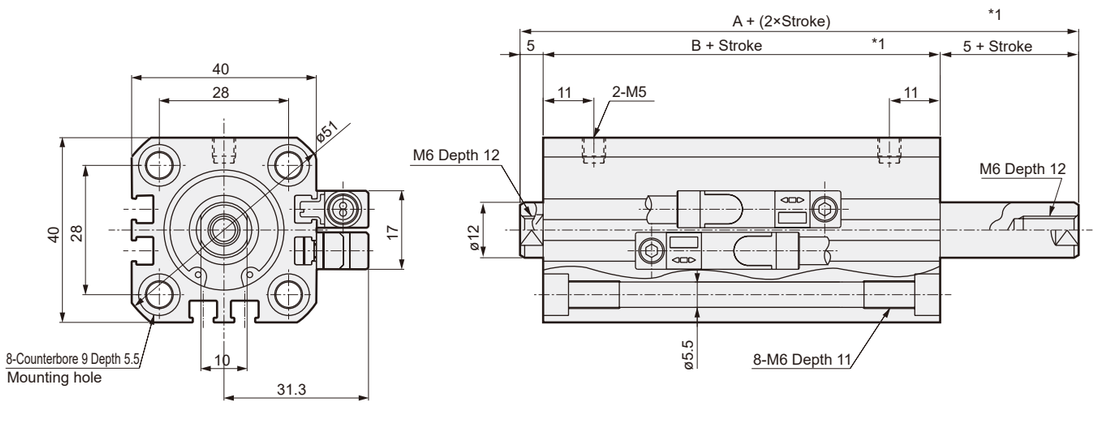
*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

Outline Dimension Drawing (Bore size: ø25)

● SSD-DG1 (L)/DG4 (L)-25

● Rod end male thread part



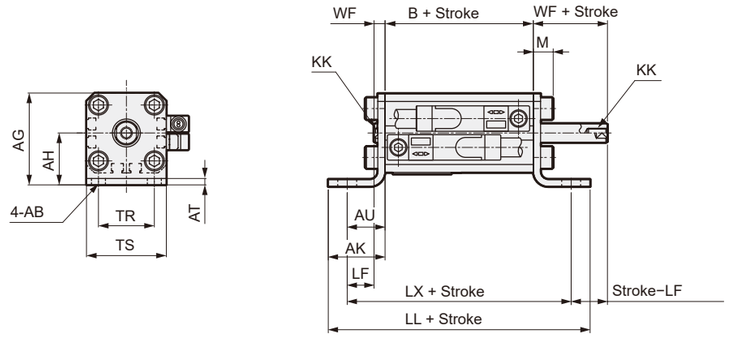


Code / Bore Size (mm)	Dimension without switch A *1	Dimension without switch B *1	Dimension with switch A *1	Dimension with switch B *1
ø25	61	51	71	61

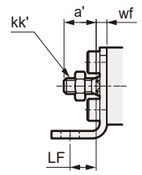
*1: When calculating A + (2 x stroke), B + stroke, and 5 + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right.
(Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.
*2: The positions of the flats for wrenches on the left and right sides are not fixed.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**
***4: For dimensions with each switch, refer to P. 674 to 681.**

Outline Dimension Drawing (Bore size: ø25)

● Axial Foot Type (LB)

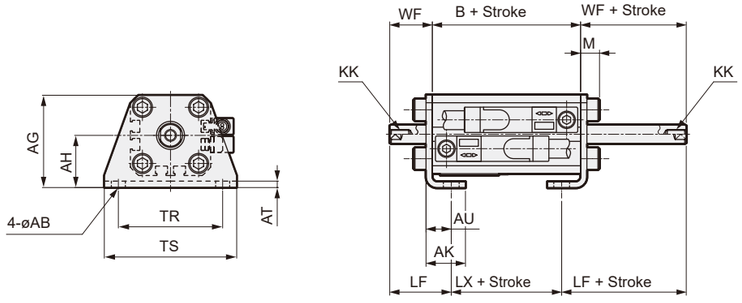


● For rod end male thread

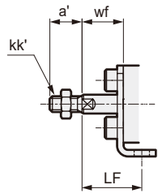


Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	61	109	93	51	99	83	17.5	M10×1.25	5	11

● Axial Foot Type (Compact Type) (LB2)



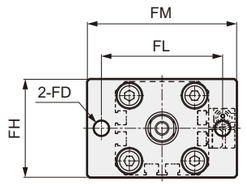
● For rod end male thread

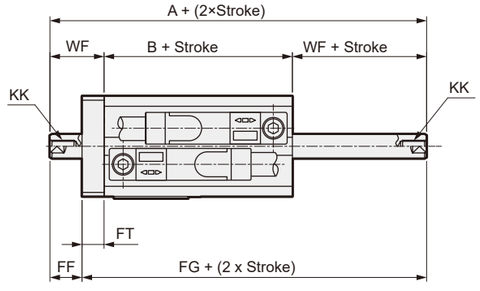


Code / Bore size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LX	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	61	46	51	36	17.5	M10×1.25	15	22.5

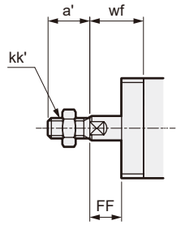
Outline Dimension Drawing (Bore size: ø25)

● Rod Side Flange Type (FA)





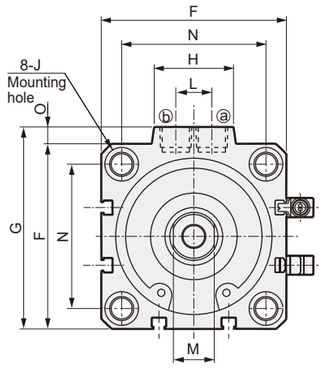
For rod end male thread

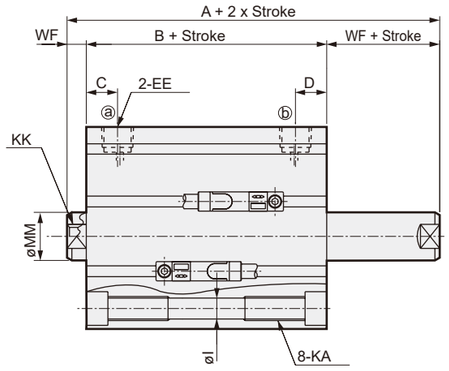


Code / Bore size (mm)	Common dimension FD	FH	FL	FM	FT	For female thread FF	KK	WF	With Switch A	With Switch B	With Switch FG	Without Switch A	Without Switch B	Without Switch FG	For male thread FF	a'	kk'	wf
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	91	61	84	81	51	74	7	17.5	M10×1.25	15

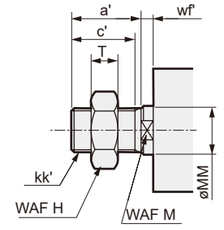
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-DG1 (L)/DG4 (L)-32 to 100

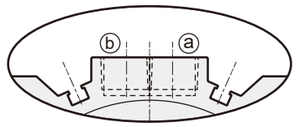




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	G	H	I
ø32	74.5	60.5	64.5	50.5	8	8	Rc1/8	45	49.5	24	5.5
ø40	83	69	73	59	12	12	Rc1/8	52	57	24	5.5
ø50	85	69	75	59	10.5	10.5	Rc1/4	64	71	33	6.9
ø63	87	71	77	61	13	13	Rc1/4	77	84	33	8.7
ø80	98.5	78.5	88.5	68.5	16	16	Rc3/8	98	104	38	10.5
ø100	112	88	102	78	23	23	Rc3/8	117	123.5	38	10.5

Code / Bore Size (mm)	Common dimension J	KA	KK	L	M	MM	N	O	WF
ø32	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	9 Counterbore depth 5.5	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	11 Counterbore Depth 6.5	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	14 Counterbore depth 9	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	17 Counterbore depth 11	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	17.5 Counterbore depth 11	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12

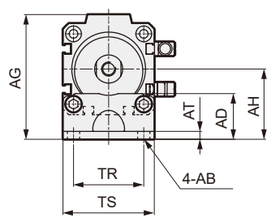
*1: When calculating A + (2 x stroke), B + stroke, and WF + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. Rod protrusion dimensions differ on the left and right.
(Example) For an intermediate stroke of 17 mm, use the standard stroke of 20 mm for calculation.
***2: For dimensions with each switch, refer to P. 674 to 681.**
*3: The position of the width across flats for spanner engagement on the left and right is not fixed.
***4: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

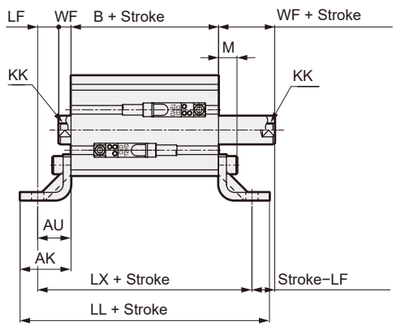
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

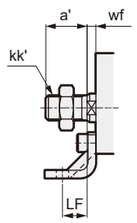
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot Type (LB)



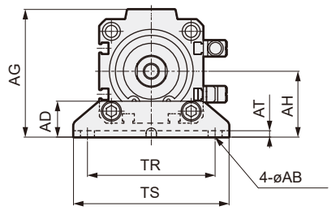


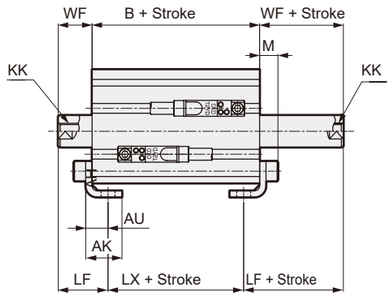
● Rod end male thread part



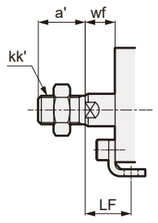
Code / Bore Size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	60.5	108.5	92.5	50.5	98.5	82.5	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	69	127	107	59	117	97	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	69	137	113	59	127	103	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	71	151	121	61	141	111	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	78.5	178.5	148.5	68.5	168.5	138.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	88	188	158	78	178	148	35.5	M26×1.5	8	27

● Axial Foot Type (Compact Type) (LB2)





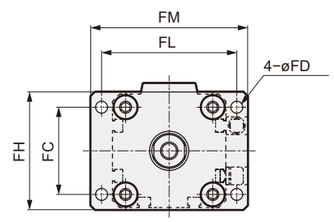
● Rod end male thread part

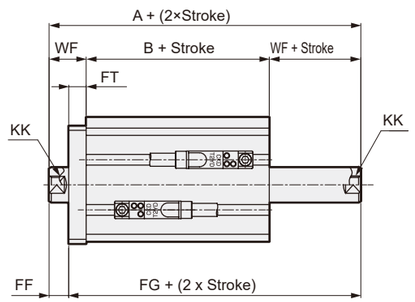


Code / Bore Size (mm)	Common dimension										For female thread							For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LX	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	60.5	44.5	50.5	34.5	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	69	53	59	43	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	69	46	59	36	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	71	45	61	35	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	78.5	48.5	68.5	38.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	88	54	78	44	35.5	M26×1.5	18	35

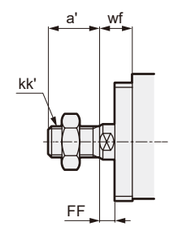
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)





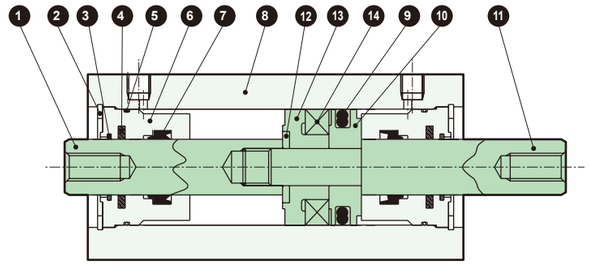
● Rod end male thread part



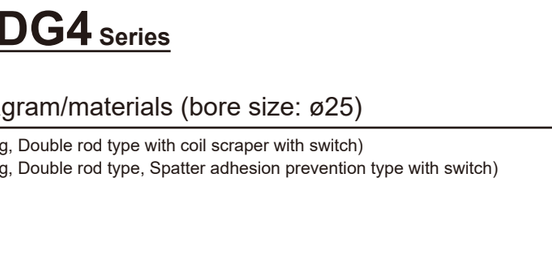
Code / Bore Size (mm)	Common dimension						For female thread										For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	With Switch FG	Without Switch A	Without Switch B	Without Switch FG	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	94.5	60.5	85.5	84.5	50.5	75.5	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	103	69	94	93	59	84	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	105	69	96	95	59	86	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	107	71	98	97	61	88	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	118.5	78.5	109.5	108.5	68.5	99.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	132	88	121	122	78	111	7	35.5	M26×1.5	18

Internal structure diagram/materials (bore size: ø25)

●SSD-DG1L-25 (Double acting, Double rod type with coil scraper with switch)
●SSD-DG4L-25 (Double acting, Double rod type, Spatter adhesion prevention type with switch)



●SSD-DG1-25 (Double acting, Double rod type with coil scraper)
●SSD-DG4-25 (Double acting, Double rod type, Spatter adhesion prevention type)

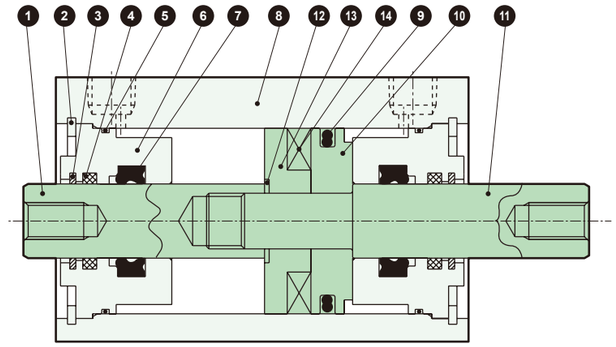


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod A	Stainless Steel	Industrial Hard Chrome Plating	8	Cylinder Body	Aluminum Alloy	Hard Anodized
2	C-type retaining ring for bore	Steel	Zinc phosphate	9	Piston Packing	Nitrile Rubber	
3	Coil scraper	Phosphor bronze		10	Piston	Aluminum Alloy	Chromate
4	Lube keeper	Special rubber	DG4, DG4L only	11	Piston Rod B	Stainless Steel	Industrial Hard Chrome Plating
5	Rod metal gasket	Nitrile Rubber		12	Spacer washer	Stainless Steel	
6	Rod Metal	Aluminum Alloy	Alumite	13	Spacer	Special Resin	
7	Rod Packing	Nitrile Rubber		14	Magnet	Plastic	

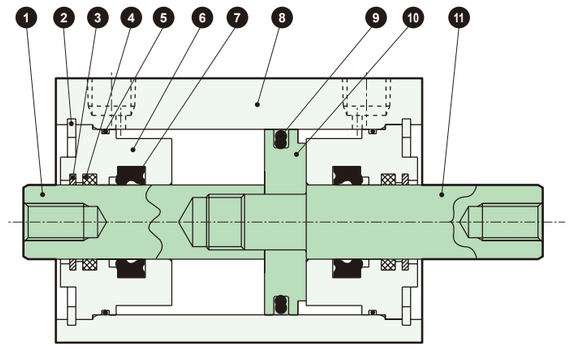
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø32 to ø50)

●SSD-DG1L-32 to 50 (Double acting, Double rod type with coil scraper with switch)
●SSD-DG4L-32 to 50 (Double acting, Double rod type, Spatter adhesion prevention type with switch)



●SSD-DG1-32 to 50 (Double acting, Double rod type with coil scraper)
●SSD-DG4-32 to 50 (Double acting, Double rod type, Spatter adhesion prevention type)

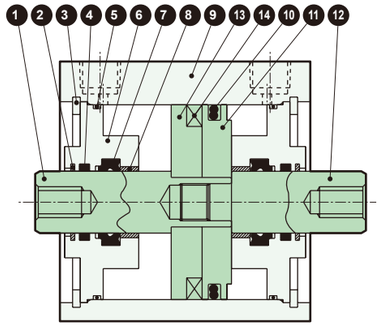


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod A	Steel	Industrial Hard Chrome Plating	9	Piston Packing	Nitrile Rubber	
2	C-type retaining ring for bore	Steel	Zinc phosphate	10	Piston	Aluminum Alloy	Chromate
3	Coil scraper	Phosphor bronze		11	Piston Rod B	Steel	Industrial Hard Chrome Plating
4	Lube keeper	Special rubber	DG4, DG4L only	12	Spacer washer	Stainless Steel	ø50
5	Rod metal gasket	Nitrile Rubber		13	Spacer	ø32, ø40: Aluminum alloy ø50: Special resin	ø32, ø40: Chromate
6	Rod Metal	Aluminum Alloy	Alumite				
7	Rod Packing	Nitrile Rubber		14	Magnet	Plastic	
8	Cylinder Body	Aluminum Alloy	Hard Anodized				

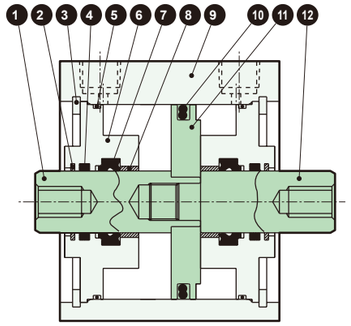
For maintenance parts, please visit the CKD Component Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

●SSD-DG1L-63 to 100 (Double acting, Double rod type with coil scraper with switch)
●SSD-DG4L-63 to 100 (Double acting, Double rod type, Spatter adhesion prevention type with switch)



●SSD-DG1-63 to 100 (Double acting, Double rod type with coil scraper)
●SSD-DG4-63 to 100 (Double acting, Double rod type, Spatter adhesion prevention type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod A	Steel	Industrial Hard Chrome Plating	8	Bushing	Bearing Alloy	
2	Coil scraper	Phosphor bronze		9	Cylinder Body	Aluminum Alloy	Hard Anodized
3	C-type retaining ring for bore	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	Chromate
4	Lube keeper	Special rubber	DG4, DG4L only	11	Piston	Aluminum Alloy	Chromate
5	Rod metal gasket	Nitrile Rubber		12	Piston Rod B	Steel	Industrial Hard Chrome Plating
6	Rod Metal	Aluminum Alloy	Chromate	13	Spacer	Aluminum Alloy	Chromate
7	Rod Packing	Nitrile Rubber		14	Magnet	Plastic	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

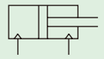
MEMO



Compact Cylinder
Double Acting, Single Rod, Environmental Resistant Scraper Type

SSD-G5 Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

Custom Products RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-G5 - 20 - [ ] - 5 ——— N - LB - I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD-G5L - 20 - [ ] - 5 - T0H - R - N - LB - I
1 2 3 4 5 6 7 8 9

1	2	3	4	5	6	7	8	9
Model No.	Bore size	Piping thread type	Stroke	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

1 Model No.

Code	Content
SSD-G5	Double Acting, Single Rod, Environmentally Resistant Scraper Type
SSD-G5L	Double Acting, Single Rod, Environmentally Resistant Scraper Type with Switch

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	M5 thread (ø20 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø50	1 to 50	Every 1 mm
ø63 to ø100	1 to 50	

Note: For details on stroke, please refer to P. 606.

5 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No LED Indicator		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: T8□ switches cannot be mounted on ø20 to ø32.
*5: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

*6

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

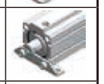
Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

8 Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: The WF and wf dimensions of cylinders for "LB2" and "FA" are set 10 mm longer than standard products. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

9 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-G5 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T0H
5
Switch Model No.

Specifications

Item		SSD-G5 / SSD-G5L (with switch)							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Max. Operating Pressure	MPa	1.0							
Min. Operating Pressure	MPa	0.2					0.15		
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (However, no freezing)							
Port Size		M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance	mm	+1.0 0							
Operating piston speed	mm/s	50 to 500					50 to 300		
Cushion		None							
Lubrication		Not required (When lubricating, use turbine oil class 1 ISO VG32)							
Allowable Absorbed Energy	J	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
Minimum stroke (mm) *2		1							
Maximum Stroke (mm)		50							
Intermediate stroke *3		Every 1 mm							

***1: If the standard stroke is exceeded, it will be a high load type (K). For specifications, see P. 390, and for outline dimensions, see P. 392 to 400.**

***2: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator type, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*3: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

***4: For the minimum stroke when using mounting brackets LB and LB2, see P. 609 and 613.**

Number of switches mountable and minimum stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø20	5	5	20	20
ø25	5	5	15	15
ø32	5	5	20	20
ø40	5	5	15	15
ø50	5	5	15	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1□ or T8□ switch is not available.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50	
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch
ø20	95	150	107	182	120	195	133	208	145	220	158	233	183	258	208	283
ø25	131	222	146	237	162	253	178	269	194	285	209	300	241	332	272	363
ø32	185	299	207	321	229	343	251	365	272	386	294	408	338	452	381	495
ø40	269	412	296	439	322	465	349	492	376	519	402	545	455	598	508	651
ø50	434	628	476	670	518	712	560	754	602	796	645	839	729	923	813	1007
ø63	648	927	703	982	-	-	813	1092	-	-	923	1202	1074	1313	1144	1423
ø80	1153	1566	1240	1653	-	-	1413	1826	-	-	1586	1990	1760	2173	1933	2346
ø100	1765	2332	1879	2446	-	-	2106	2673	-	-	2334	2901	2561	3128	2789	3356

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

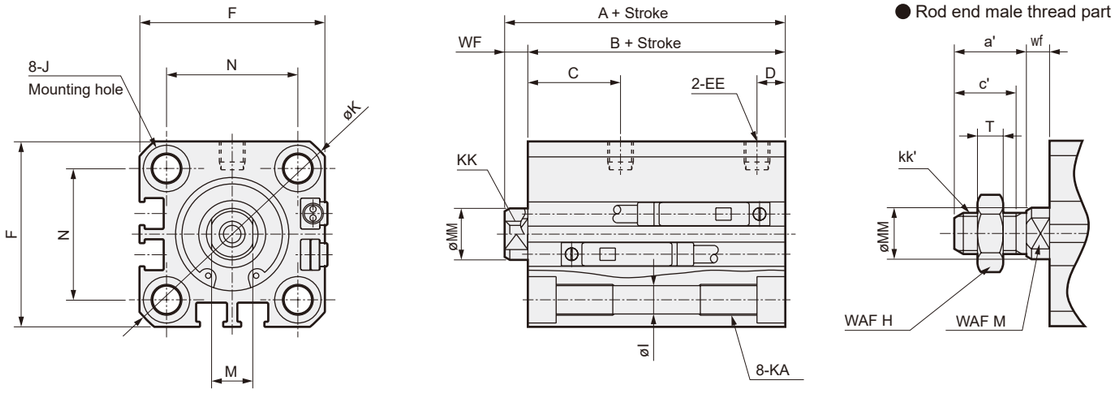
Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

*1: Foot type mounting brackets are 2 pcs/set.

*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

Outline Dimension Drawing (Bore size: ø20, ø25)

● SSD-G5 (L)-20, 25



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F
ø20	44	39.5	34	29.5	18	5.5	M5	36
ø25	47.5	42.5	37.5	32.5	21	6	M5	40

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	WF
ø20	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 depth 11	10	12	28	5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

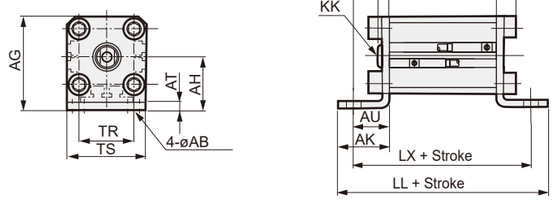
***3: For dimensions with each switch, refer to P. 674 to 681.**

● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

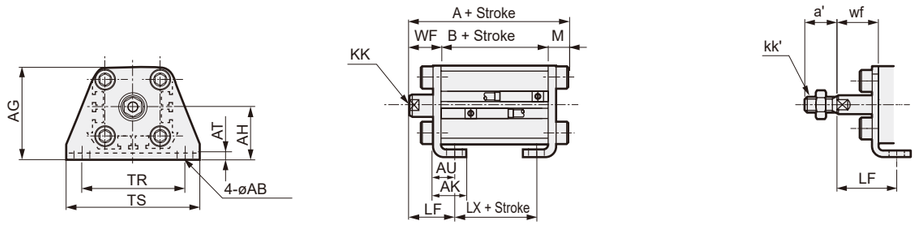
Outline Dimension Drawing (Bore size: ø20, ø25)

● Axial Foot Type (LB)



Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	39.5	87.5	71.5	29.5	77.5	61.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	42.5	90.5	74.5	32.5	80.5	64.5	17.5	M10×1.25	5	11

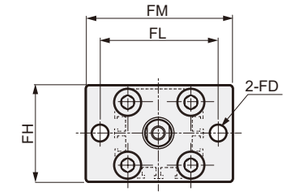
● Axial Foot Type (Compact Type) (LB2)

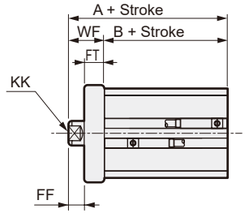


Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	63.2	39.5	27.5	53.2	29.5	17.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	66.7	42.5	27.5	56.7	32.5	17.5	17.5	M10×1.25	15	22.5

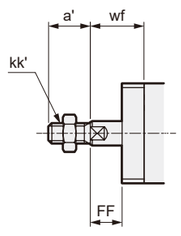
Outline Dimension Drawing (Bore size: ø20, ø25)

● Rod Side Flange Type (FA)



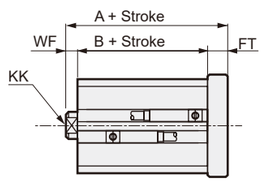


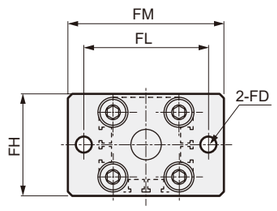
● For rod end male thread



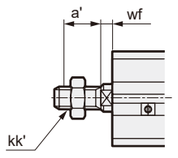
Code / Bore Size (mm)	Common dimension					For female thread							For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	54	39.5	44	29.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	57.5	42.5	47.5	32.5	7	17.5	M10×1.25	15

● Head Side Flange Type (FB)





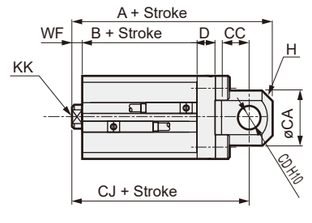
● For rod end male thread

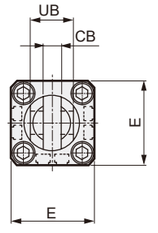


Code / Bore Size (mm)	Common dimension					For female thread						For male thread				
	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	6.6	39	48	60	8	M5 depth 7	4.5	52	39.5	42	29.5	14	M8	4.5	62	52
ø25	6.6	42	52	64	8	M6 Depth 12	5	55.5	42.5	45.5	32.5	17.5	M10×1.25	5	67.5	57.5

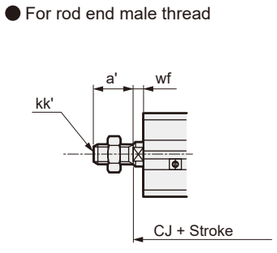
Outline Dimension Drawing (Bore size: ø20, ø25)

● Double Knuckle Clevis Type (CB)



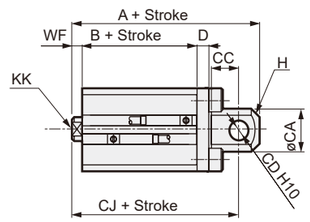


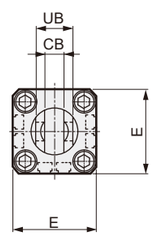
● For rod end male thread



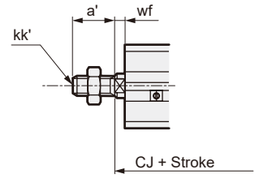
Code / Bore Size (mm)	CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	24	8 +0.4 +0.1	12	10	8	36	C4	19 -0.1 -0.4	M5 depth 7	4.5	77	39.5	67	67	29.5	57	14	M8	4.5	67	57
ø25	27.5	10 +0.4 +0.1	16	12	8	40	C5	21 -0.1 -0.4	M6 Depth 12	5	86.5	42.5	74.5	76.5	32.5	64.5	17.5	M10×1.25	5	74.5	64.5

● Double clevis type (Compact type) (CB2)





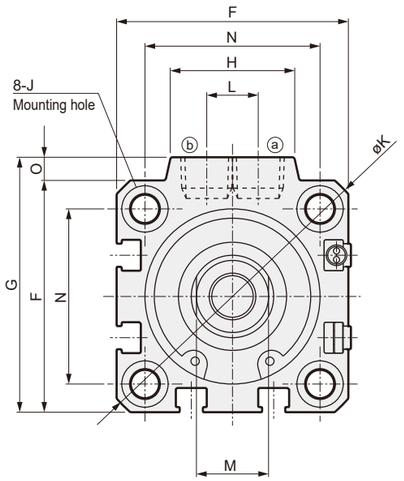
● For rod end male thread

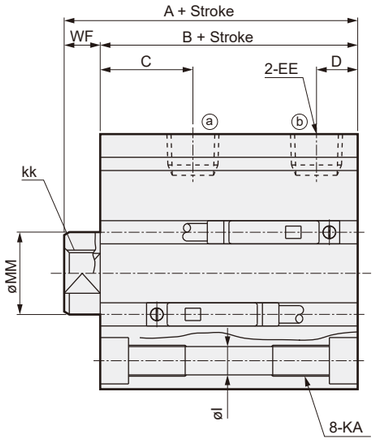


Code / Bore Size (mm)	CA	CB	CC	CD	D	E	H	UB	For female thread KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	20	8 +0.4 +0.1	12	8	5	36	C4	16 -0.1 -0.3	M5 depth 7	4.5	71	39.5	62	61	29.5	52	14	M8	4.5	62	52
ø25	24	10 +0.4 +0.1	14	10	5	40	C5	20 -0.1 -0.3	M6 Depth 12	5	77.5	42.5	67.5	67.5	32.5	57.5	17.5	M10×1.25	5	67.5	57.5

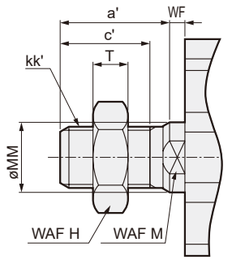
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-G5 (L)-32 to 100

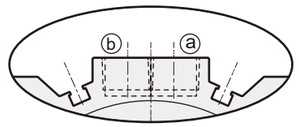




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	G	H
ø32	50	43	40	33	18	8	Rc1/8	45	49.5	24
ø40	56.5	49.5	46.5	39.5	22	8.5	Rc1/8	52	57	24
ø50	58.5	50.5	48.5	40.5	20.5	10.5	Rc1/4	64	71	33
ø63	64	56	54	46	23	11	Rc1/4	77	84	33
ø80	73.5	63.5	63.5	53.5	26	13	Rc3/8	98	104	38
ø100	85	73	75	63	33	15	Rc3/8	117	123.5	38

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	10.5	17.5 Counterbore depth 11	156	M12 Depth 29	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

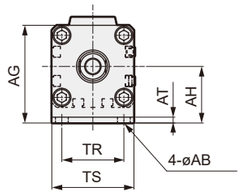
● Rod end male thread part dimension table

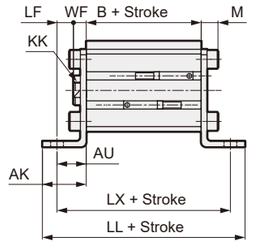
Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14×1.5	14	16	8	5
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing (Bore size: ø32 to ø100)

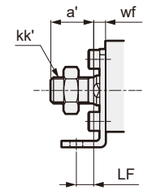
● Axial Foot Type (LB)

· ø32

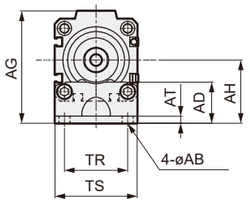


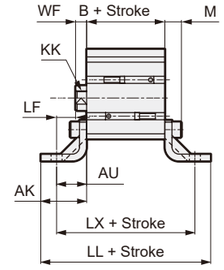


● For rod end male thread

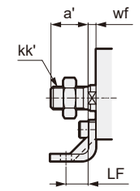


· ø40 to ø100





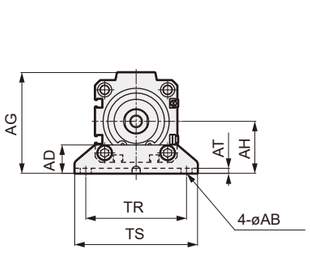
● For rod end male thread

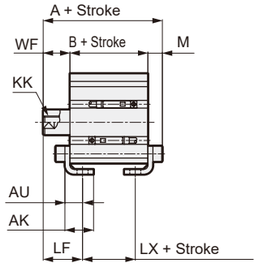


Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	43	91	75	33	81	65	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49.5	107.5	87.5	39.5	97.5	77.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	50.5	118.5	94.5	40.5	108.5	84.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	56	136	106	46	126	96	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	63.5	163.5	133.5	53.5	153.5	123.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	73	173	143	63	163	133	35.5	M26×1.5	8	27

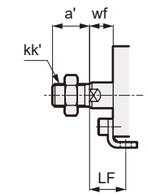
*1: If B + stroke is less than or equal to the value below, LB cannot be selected.
ø80, ø100: 69 or less

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread

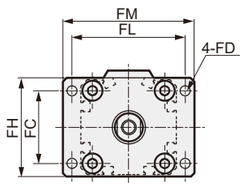


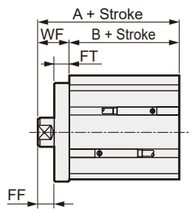
Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	69.2	43	27	59.2	33	17	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	75.7	49.5	33.5	65.7	39.5	23.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	79.7	50.5	27.5	69.7	40.5	17.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	87.2	56	30	77.2	46	20	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	100	63.5	33.5	90	53.5	23.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	113	73	39	103	63	29	35.5	M26×1.5	18	35

*1: If B + stroke is less than or equal to the value below, LB2 cannot be selected.
ø80: 72 or less ø100: 69 or less

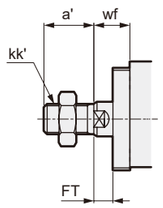
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)



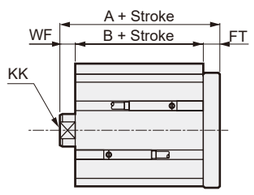


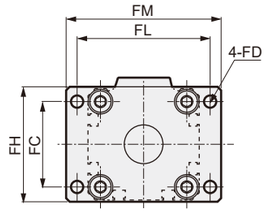
● For rod end male thread



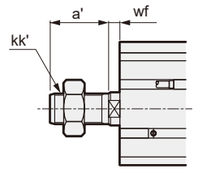
Code / Bore Size (mm)	Common dimension						For female thread							For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	60	43	50	33	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	66.5	49.5	56.5	39.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	68.5	50.5	58.5	40.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	74	56	64	46	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	83.5	63.5	73.5	53.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	95	73	85	63	7	35.5	M26×1.5	18

● Head Side Flange Type (FB)





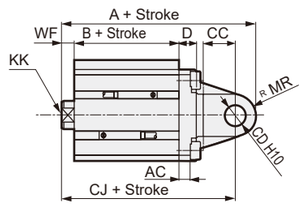
● For rod end male thread

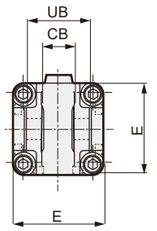


Code / Bore Size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	With Switch CJ / Without Switch CJ
ø32	34	5.5	48	56	65	8	M8 depth 13	7	58	43	48	33	23.5	M14×1.5	5	78 / 68
ø40	40	5.5	54	62	72	8	M8 depth 13	7	64.5	49.5	54.5	39.5	23.5	M14×1.5	5	76.5 / 66.5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	67.5	50.5	57.5	40.5	28.5	M18×1.5	5	83.5 / 73.5
ø63	60	9	80	92	108	9	M10 depth 15	8	73	56	63	46	28.5	M18×1.5	5	91 / 81
ø80	77	11	99	116	134	11	M16 depth 21	10	84.5	63.5	74.5	53.5	35.5	M22×1.5	8	109.5 / 99.5
ø100	94	11	117	136	154	11	M20 depth 27	12	96	73	86	63	35.5	M26×1.5	8	126 / 116

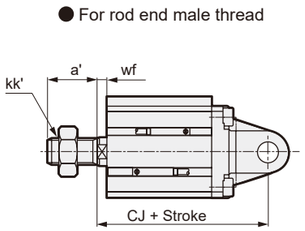
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)



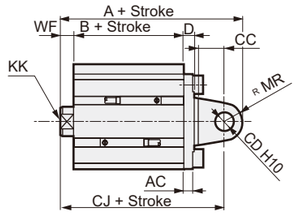


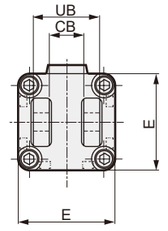
● For rod end male thread



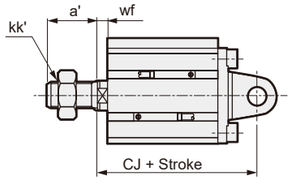
Code / Bore Size (mm)	Common dimension								For female thread		With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF							a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	9.5	10 +0.4 +0.1	16	12	10	45	12	21 -0.1 -0.4	M8 depth 13	7	92	43	80	82	33	70	23.5	M14×1.5	5	78	68
ø40	6.5	18 +0.4 +0.1	18	12	10	52	12	36 -0.1 -0.4	M8 depth 13	7	100.5	49.5	88.5	90.5	39.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6.5	18 +0.4 +0.1	18	12	10	64	12	36 -0.1 -0.4	M10 depth 15	8	102.5	50.5	90.5	92.5	40.5	80.5	28.5	M18×1.5	5	87.5	77.5
ø63	7.5	20 +0.4 +0.1	24	14	10	77	16	40 -0.1 -0.4	M10 depth 15	8	117	56	101	107	46	91	28.5	M18×1.5	5	98	88
ø80	10.5	28 +0.4 +0.1	30	20	14	98	20	56 -0.1 -0.4	M16 depth 21	10	145.5	63.5	125.5	135.5	53.5	115.5	35.5	M22×1.5	8	123.5	113.5
ø100	10.5	28 +0.4 +0.1	30	20	16	117	20	56 -0.1 -0.4	M20 depth 27	12	157	73	137	147	63	127	35.5	M26×1.5	8	133	123

● Double clevis type (Compact type) (CB2)





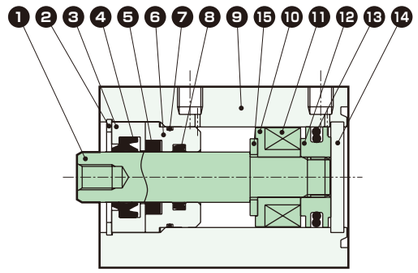
● For rod end male thread



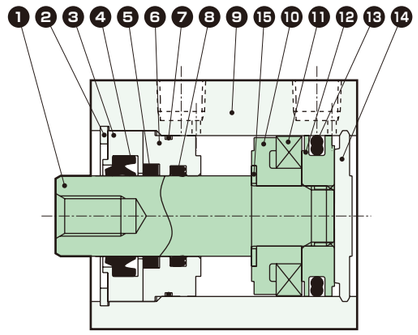
Code / Bore Size (mm)	Common dimension								For female thread		With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF							a'	kk'	wf	With Switch CJ	Without Switch CJ
ø32	4.5	18 +0.4 +0.1	14	10	5	45	10	36 -0.1 -0.3	M8 depth 13	7	80	43	70	70	33	60	23.5	M14×1.5	5	68	58
ø40	5	18 +0.4 +0.1	14	10	6	52	10	36 -0.1 -0.3	M8 depth 13	7	88.5	49.5	78.5	78.5	39.5	68.5	23.5	M14×1.5	5	76.5	66.5
ø50	6	22 +0.4 +0.1	20	14	7	64	14	44 -0.1 -0.3	M10 depth 15	8	100.5	50.5	86.5	90.5	40.5	76.5	28.5	M18×1.5	5	83.5	73.5
ø63	7	22 +0.4 +0.1	20	14	8	77	14	44 -0.1 -0.3	M10 depth 15	8	108	56	94	98	46	84	28.5	M18×1.5	5	91	81
ø80	9	28 +0.4 +0.1	27	18	10	98	18	56 -0.1 -0.3	M16 depth 21	10	129.5	63.5	111.5	119.5	53.5	101.5	35.5	M22×1.5	8	109.5	99.5
ø100	12	32 +0.4 +0.1	31	22	13	117	22	64 -0.1 -0.3	M20 depth 27	12	152	73	130	142	63	120	35.5	M26×1.5	8	126	116

Internal structure diagram/materials (bore size: ø20/ø25)

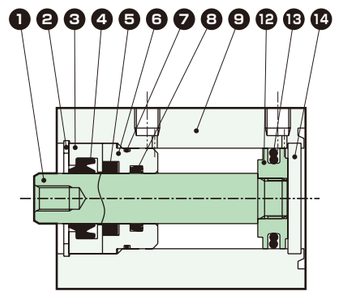
●SSD-G5L-20, 25
(Double Acting, Environmentally Resistant Scraper Type with Switch)



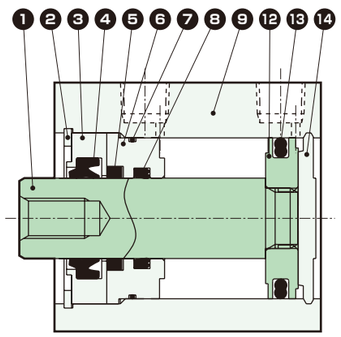
●SSD-G5L-32 to 50
(Double Acting, Environmentally Resistant Scraper Type with Switch)



●SSD-G5-20□25
(Double Acting, Environmentally Resistant Scraper Type)



●SSD-G5-32 to 50
(Double Acting, Environmentally Resistant Scraper Type)

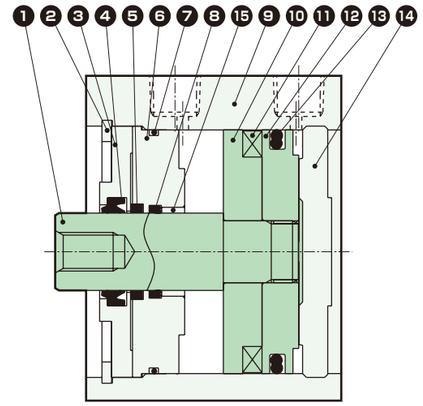


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20, ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	9	Cylinder Body	Aluminum Alloy	Hard Anodized
2	C-type retaining ring	Steel	Zinc phosphate	10	Spacer	Special Resin	
3	Rod metal 1	Aluminum Alloy	Chromate	11	Magnet	Plastic	
4	Scraper	Nitrile Rubber		12	Piston	Aluminum Alloy	Chromate
5	Lube keeper	Special rubber		13	Piston Packing	Nitrile Rubber	
6	Rod metal 2	Aluminum Alloy	Alumite	14	Cover	ø20, ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
7	Rod metal gasket	Nitrile Rubber		15	Spacer washer	Stainless Steel	
8	Rod Packing	Nitrile Rubber					

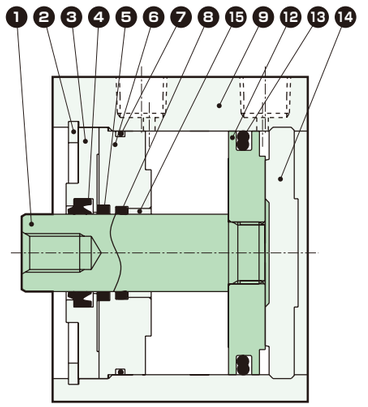
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

●SSD-G5L-63 to 100 (Double acting, Environmental resistant scraper type with switch)



●SSD-G5-63 to 100 (Double acting, Environmental resistant scraper type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	9	Cylinder Body	Aluminum Alloy	Hard Anodized
2	C-type retaining ring	Steel	Zinc phosphate	10	Spacer	Aluminum Alloy	Chromate
3	Rod metal 1	Aluminum Alloy	Chromate	11	Magnet	Plastic	
4	Scraper	Nitrile Rubber		12	Piston	Aluminum Alloy	Chromate
5	Lube keeper	Special rubber		13	Piston Packing	Nitrile Rubber	
6	Rod metal 2	Aluminum Alloy	Chromate	14	Cover	Aluminum Alloy	Alumite
7	Rod metal gasket	Nitrile Rubber		15	Bushing	Bearing Alloy	
8	Rod Packing	Nitrile Rubber					

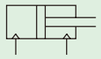
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.



Compact Cylinder
Double Acting, Single Rod, High Load, Environmental Resistant Scraper Type

SSD-KG5 Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

Custom Products

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SSD-KG5 - 20 - [ ] - 5 ——— N - LB - I
1 2 3 4 7 8 9

With Switch
(Built-in magnet for switch)

SSD-KG5L - 20 - [ ] - 5 - T0H - R - N - LB - I
1 2 3 4 5 6 7 8 9

1 Model No. | 2 Bore size | 3 Piping thread type | 4 Stroke | 5 Switch Model No. | 6 Number of Switches | 7 Option | 8 Mounting bracket | 9 Accessories

1 Model No.

Code	Content
SSD-KG5	Double Acting, Single Rod, High Load, Environmentally Resistant Scraper Type
SSD-KG5L	Double acting, Single rod, High load, Environmental resistant scraper type with switch

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Port Thread Type

Code	Content
Blank	M5 thread (ø20 to ø25)
	Rc thread (ø32 to ø100)
NN	NPT thread (Custom product) (ø32 to ø100)
GN	G thread (Custom product) (ø32 to ø100)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20	1 to 200	Every 1 mm
ø25 to ø50	1 to 300	
ø63 to ø100	1 to 300	

Note: For details on stroke, please refer to P. 620.

5 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
		3-wire (PNP)	—		—		T3PH□	T3PV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		—		—		T2YD□	–	
			—		—		T2YDT□	–	
	1-Color Off-Delay Type		—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		—		—		T2HR3□	T2VR3□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No LED Indicator		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*4

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: T8□ switches cannot be mounted on ø20 to ø32.
*5: Switches other than the model No.s listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*6 W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

8 Mounting type

Mounting brackets are shipped included to the product.

Code	Content	
LB	Axial Foot Type	
*1 LB2	Axial foot type (Compact type)	
*1 FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CB	Double Clevis Type (pin and retaining ring included)	
CB2	Double knuckle clevis type (Compact type) (Pin and retaining ring included)	

*1: The WF and wf dimensions of cylinders for "LB2" and "FA" are set 10 mm longer than standard products. Please contact us for the cylinder model No. when ordering the cylinder, LB2 bracket, and FA bracket separately.

9 Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-KG5 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - T0H
5
Switch Model No.

Specifications

Item		SSD-KG5 SSD-KG5L (with switch)							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Maximum Operating Pressure	MPa	1.0							
Min. operating pressure	MPa	0.2					0.15		
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (However, no freezing)							
Port Size		M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance	mm	+2.0 0							
Operating piston speed	mm/s	50 to 500					50 to 300		
Cushion		Rubber Cushion							
Lubrication		Not required (When lubricating, use turbine oil class 1 ISO VG32)							
Allowable absorbed energy	J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	5	●							
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	60		●	●	●	●	●	●	●
	70		●	●	●	●	●	●	●
	80		●	●	●	●	●	●	●
	90		●	●	●	●	●	●	●
	100		●	●	●	●	●	●	●
Minimum Stroke (mm) *1		1							
Maximum Stroke (mm)		200	300						
Intermediate Stroke *2		Every 1 mm							

***1: Products less than 5 mm with a 1-color indicator switch, and products less than 10 mm with a 2-color indicator type, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured. For the number of switches that can be mounted and the minimum stroke, refer to the table below.**

*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of switches mountable and minimum stroke (mm)

Switch Model No.	T□		T2WL	
Number of Switches / Bore Size (mm)	1	2	1	2
ø20	5	5	20	20
ø25	5	5	20	20
ø32	5	5	15	15
ø40	5	5	10	15
ø50	5	5	10	15
ø63	5	5	10	15
ø80	5	5	10	15
ø100	5	5	10	15

Note: Products less than 10 mm with 2-color indication type, off-delay type, for AC magnetic field, or with T1□ or T8□ switches cannot be manufactured.

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		40		50		60		70		80		90		100	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	107	182	120	195	133	208	145	220	158	233	170	245	195	270	220	295	245	320	270	345	295	370	320	395	345	420
ø25	-	-	162	253	178	269	194	285	209	300	226	317	258	349	290	381	322	413	354	445	386	477	418	509	450	541
ø32	-	-	251	365	272	386	294	408	316	430	338	452	381	495	424	538	467	581	510	624	553	667	596	710	639	753
ø40	-	-	349	492	376	519	402	545	428	571	455	598	508	651	561	704	614	757	667	810	720	863	773	916	826	969
ø50	-	-	560	754	602	796	645	839	688	882	729	923	813	1007	897	1091	981	1175	1065	1259	1149	1343	1233	1427	1317	1481
ø63	-	-	813	1092	-	-	923	1202	-	-	1034	1313	1144	1423	1254	1533	1364	1643	1474	1753	1584	1863	1694	1973	1804	2083
ø80	-	-	1413	1826	-	-	1586	1999	-	-	1760	2173	1933	2346	2106	2519	2279	2692	2452	2865	2625	3038	2798	3211	2971	3384
ø100	-	-	2106	2673	-	-	2334	2901	-	-	2561	3128	2789	3356	3017	3584	3245	3812	3473	4040	3701	4268	3929	4496	4157	4724

Stroke (mm) / Bore Size (mm)	110		120		130		140		150		160		170		180		190		200	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	370	445	395	470	420	495	445	520	470	545	495	570	520	595	545	620	570	645	595	670
ø25	482	573	514	605	546	637	581	669	610	701	642	733	674	765	706	797	738	829	770	861
ø32	682	796	725	839	768	882	811	925	854	968	896	1010	939	1053	982	1096	1025	1139	1068	1182
ø40	879	1022	932	1075	985	1128	1038	1181	1091	1234	1144	1287	1197	1340	1250	1393	1303	1446	1356	1499
ø50	1401	1595	1485	1679	1569	1763	1653	1847	1737	1931	1835	2029	1920	2114	2005	2199	2090	2284	2175	2369
ø63	1914	2193	2024	2303	2134	2413	2244	2523	2354	2633	2464	2743	2574	2853	2684	2963	2794	3073	2904	3183
ø80	3144	3557	3317	3730	3490	3903	3663	4076	3836	4249	4009	4422	4182	4595	4355	4768	4528	4941	4701	5112
ø100	4385	4952	4613	5180	4841	5408	5069	5636	5297	5864	5525	6092	5753	6320	5981	6548	6209	6776	6437	7004

Stroke (mm) / Bore Size (mm)	210		220		230		240		250		260		270		280		290		300	
	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW	Without SW	With SW
ø20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ø25	813	893	845	925	877	957	909	989	941	1021	973	1053	1005	1085	1037	1117	1069	1149	1101	1181
ø32	1111	1225	1154	1268	1197	1311	1240	1354	1283	1397	1326	1440	1369	1483	1412	1526	1455	1569	1498	1612
ø40	1409	1552	1462	1605	1515	1658	1568	1711	1621	1764	1674	1817	1727	1870	1780	1923	1833	1976	1886	2029
ø50	2260	2454	2345	2539	2430	2624	2515	2709	2600	2794	2685	2879	2770	2964	2855	3049	2940	3134	3025	3219
ø63	3013	3292	3123	3402	3233	3512	3343	3622	3453	3732	3563	3842	3673	3952	3783	4062	3893	4172	4003	4282
ø80	4873	5286	5046	5459	5219	5632	5392	5805	5565	5978	5738	6151	5911	6324	6084	6497	6257	6670	6430	6843
ø100	6666	7233	6894	7461	7122	7689	7350	7917	7578	8145	7806	8373	8034	8601	8262	8829	8490	9057	8718	9285

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Mounting Bracket Model No. Notation Method

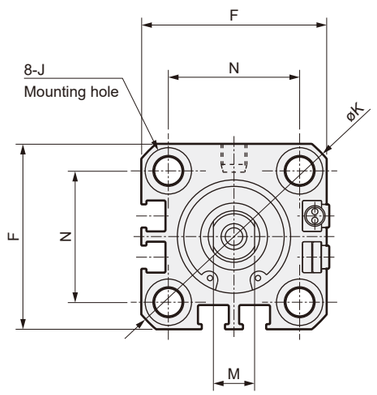
Bore Size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-20	SSD-LB-25	SSD-LB-32	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-20	SSD-LB2-25	SSD-LB2-32	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-20	SSD-FA-25	SSD-FA-32	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-20	SSD-CB-25	SSD-CB-32	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-20	SSD-CB2-25	SSD-CB2-32	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

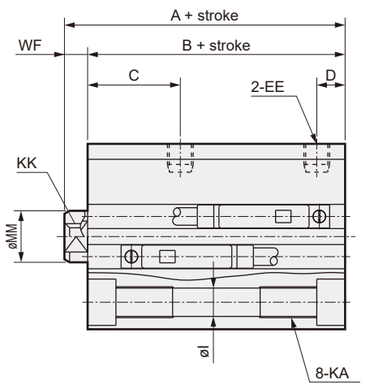
*1: Foot type mounting brackets come in a set of 2.

*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

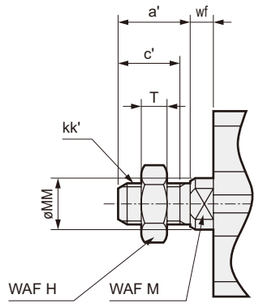
Outline Dimension Drawing (Bore size: ø20, ø25)

● SSD-KG5 (L)-20, 25





● Rod end male thread part



Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F
ø20	49	44.5	39	34.5	18	5.5	M5	36
ø25	52.5	47.5	42.5	37.5	21	6	M5	40

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	M	MM	N	WF
ø20	5.5	9 Counterbore depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	5.5	9 Counterbore depth 5.5	51	M6 depth 11	M6 depth 11	10	12	28	5

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.

***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

*3: For ø20: strokes exceeding 100, ø25: strokes exceeding 150, the A and B dimensions are the values in Table 1, and there is no counterbore J.

***4: For dimensions with each switch, refer to P. 674 to 681.**

Table 1 *3

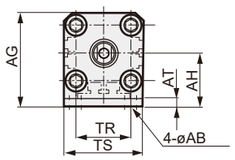
Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1
ø20	60.5	56	50.5	46
ø25	66	61	56	51

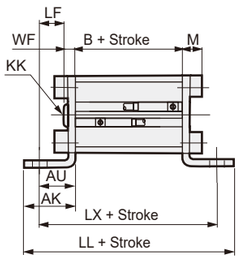
● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10×1.25	10	12	6	5

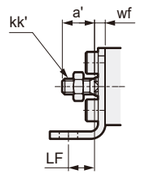
Outline Dimension Drawing (Bore size: ø20, ø25)

● Axial Foot Type (LB)





● For rod end male thread

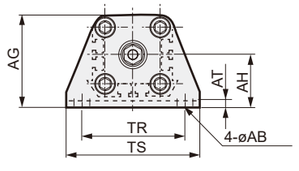


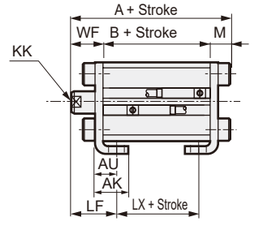
Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø20	7	42	24	24	3.2	16	24	36	9.2	M5 depth 7	4.5	11.5	44.5	92.5	76.5	34.5	82.5	66.5	14	M8	4.5	11.5
ø25	7	46	26	24	3.2	16	28	40	9.2	M6 Depth 12	5	11	47.5	95.5	79.5	37.5	85.5	69.5	17.5	M10×1.25	5	11

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

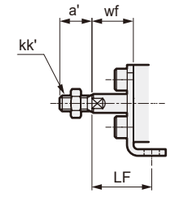
Code / Bore Size (mm)	For female thread With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX
ø20	56	104	88	46	94	78
ø25	61	109	93	51	99	83

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



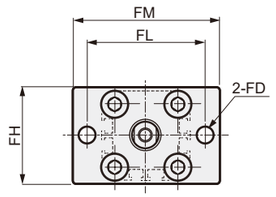
Code / Bore Size (mm)	Common dimension AB	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	For male thread a'	kk'	wf	LF
ø20	7	42	24	15	3.2	9.2	48	62	9.2	M5 depth 7	14.5	20.5	68.2	44.5	32.5	58.2	34.5	22.5	14	M8	14.5	20.5
ø25	7	46	26	16.5	3.2	10.7	52	66	9.2	M6 Depth 12	15	22.5	71.7	47.5	32.5	61.7	37.5	22.5	17.5	M10×1.25	15	22.5

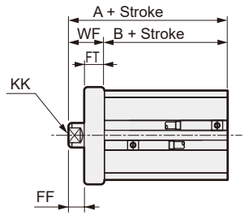
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX
ø20	79.7	56	44	69.7	46	34
ø25	85.2	61	46	75.2	51	36

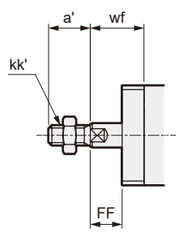
Outline Dimension Drawing (Bore size: ø20, ø25)

● Rod Side Flange Type (FA)





● For rod end male thread

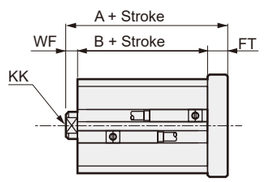


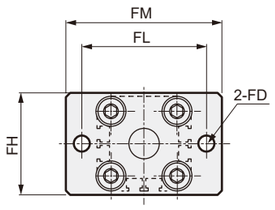
Code / Bore Size (mm)	Common dimension					For female thread							For male thread			
	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø20	6.6	39	48	60	8	6.5	M5 depth 7	14.5	59	44.5	49	34.5	6.5	14	M8	14.5
ø25	6.6	42	52	64	8	7	M6 Depth 12	15	62.5	47.5	52.5	37.5	7	17.5	M10×1.25	15

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

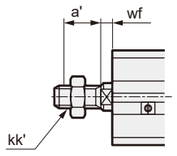
Code / Bore Size (mm)	For female thread			
	With Switch A	With Switch B	Without Switch A	Without Switch B
ø20	70.5	56	60.5	46
ø25	76	61	66	51

● Head Side Flange Type (FB)





● For rod end male thread



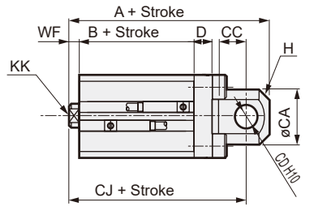
Code / Bore Size (mm)	Common dimension					For female thread						For male thread				
	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	6.6	39	48	60	8	M5 depth 7	4.5	57	44.5	47	34.5	14	M8	4.5	67	57
ø25	6.6	42	52	64	8	M6 Depth 12	5	60.5	47.5	50.5	37.5	17.5	M10×1.25	5	72.5	62.5

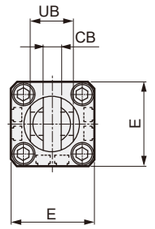
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread				For male thread	
	With Switch A	With Switch B	Without Switch A	Without Switch B	With Switch CJ	Without Switch CJ
ø20	68.5	56	58.5	46	78.5	68.5
ø25	74	61	64	51	86	76

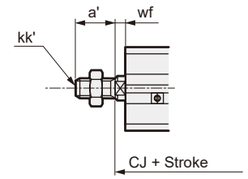
Outline Dimension Drawing (Bore size: ø20, ø25)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

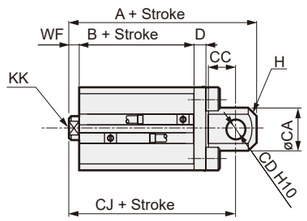


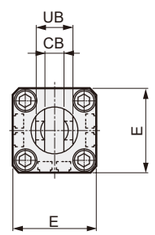
Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	24	$8^{+0.4}_{+0.1}$	12	10	8	36	C4	$19^{0.1}_{0.4}$	M5 depth 7	4.5	82	44.5	72	72	34.5	62	14	M8	4.5	72	62
ø25	27.5	$10^{+0.4}_{+0.1}$	16	12	8	40	C5	$21^{0.1}_{0.4}$	M6 Depth 12	5	91.5	47.5	79.5	81.5	37.5	69.5	17.5	M10×1.25	5	79.5	69.5

*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

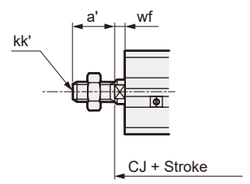
Code / Bore Size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø20	93.5	56	83.5	83.5	46	73.5	83.5	73.5
ø25	105	61	93	95	51	83	93	83

● Double clevis type (Compact type) (CB2)





● For rod end male thread



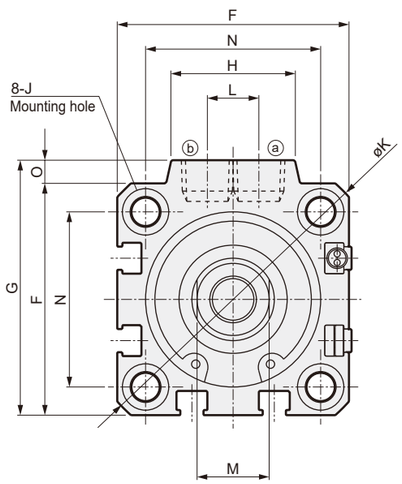
Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	CA	CB	CC	CD	D	E	H	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	a'	kk'	wf	With Switch CJ	Without Switch CJ
ø20	20	$8^{+0.4}_{+0.1}$	12	8	5	36	C4	$16^{0.1}_{0.3}$	M5 depth 7	4.5	76	44.5	67	66	34.5	57	14	M8	4.5	67	57
ø25	24	$10^{+0.4}_{+0.1}$	14	10	5	40	C5	$20^{0.1}_{0.3}$	M6 Depth 12	5	82.5	47.5	72.5	72.5	37.5	62.5	17.5	M10×1.25	5	72.5	62.5

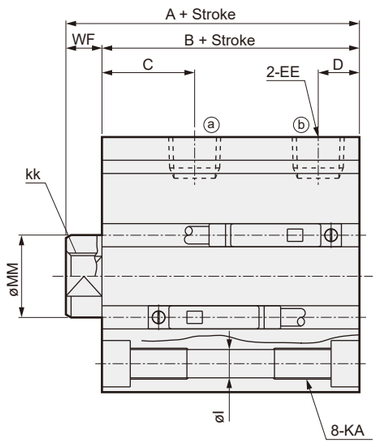
*1: For ø20 exceeding 100 strokes, ø25 exceeding 150 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread						For male thread	
	With Switch A	With Switch B	With Switch CJ	Without Switch A	Without Switch B	Without Switch CJ	With Switch CJ	Without Switch CJ
ø20	87.5	56	78.5	77.5	46	68.5	78.5	68.5
ø25	96	61	86	86	51	76	86	76

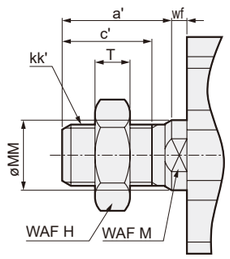
Outline Dimension Drawing (Bore size: ø32 to ø100)

● SSD-KG5 (L)-32 to 100

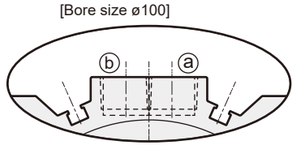




● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1	Common dimension C	D	EE	F	G	H
ø32	60	53	50	43	18	8	Rc1/8	45	49.5	24
ø40	66.5	59.5	56.5	49.5	22	8.5	Rc1/8	52	57	24
ø50	68.5	60.5	58.5	50.5	20.5	10.5	Rc1/4	64	71	33
ø63	74	66	64	56	23	11	Rc1/4	77	84	33
ø80	83.5	73.5	73.5	63.5	26	13	Rc3/8	98	104	38
ø100	95	83	85	73	33	15	Rc3/8	117	123.5	38

Code / Bore Size (mm)	Common dimension I	J	K	KA	KK	L	M	MM	N	O	WF
ø32	5.5	9 Counterbore depth 5.5	60	M6 depth 11	M8 depth 13	10	14	16	34	4.5	7
ø40	5.5	9 Counterbore depth 5.5	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7
ø50	6.9	11 Counterbore Depth 6.5	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8
ø63	8.7	14 Counterbore depth 9	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8
ø80	10.5	17.5 Counterbore depth 11	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10
ø100	10.5	17.5 Counterbore depth 11	156	M12 Depth 29	M20 depth 27	15	27	30	94	6.5	12

*1: When calculating A + Stroke and B + Stroke dimensions for intermediate strokes, do not enter the intermediate stroke value for the stroke; instead, enter the value of the standard stroke above it. (Example) For an intermediate stroke of 7 mm, enter the standard stroke of 10 mm for calculation.
*2: For ø32 to ø50: strokes exceeding 150, ø63 to ø100: strokes exceeding 200, the A and B dimensions are the values in Table 1, and there is no counterbore J.
***3: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

● Rod end male thread part

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø32	23.5	20.5	22	M14 X 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 X 1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22x1.5	22	25	13	8
ø100	35.5	32.5	41	M26x1.5	27	30	16	8

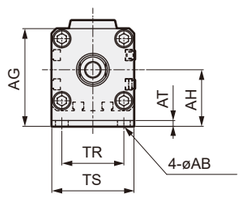
Table 1

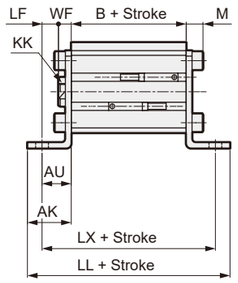
Bore size	Dimension with switch A *1	Dimension with switch B *1	Dimension without switch A *1	Dimension without switch B *1
ø32	67.5	60.5	57.5	50.5
ø40	76	69	66	59
ø50	82	74	72	64
ø63	84	76	74	66
ø80	93.5	83.5	83.5	73.5
ø100	105	93	95	83

Outline Dimension Drawing (Bore size: ø32 to ø100)

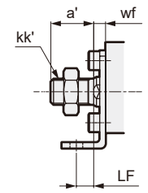
● Axial Foot Type (LB)

· ø32

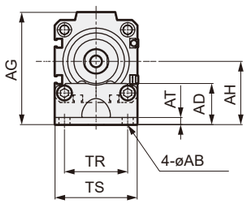


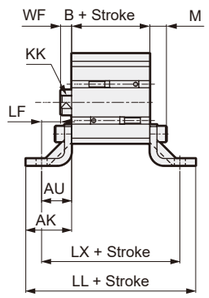


● For rod end male thread

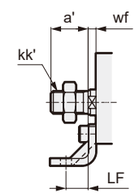


· ø40 to ø100





● For rod end male thread



Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX	For male thread a'	kk'	wf	LF
ø32	7	–	53.5	31	24	3.2	16	34	45	9.2	M8 depth 13	7	9	53	101	85	43	91	75	23.5	M14×1.5	5	11
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	59.5	117.5	97.5	49.5	107.5	87.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	60.5	128.5	104.5	50.5	118.5	94.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	66	146	116	56	136	106	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	73.5	173.5	143.5	63.5	163.5	133.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	83	183	153	73	173	143	35.5	M26×1.5	8	27

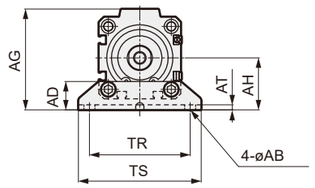
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

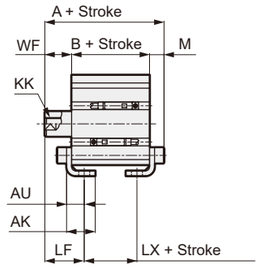
Code / Bore Size (mm)	For female thread With Switch B	With Switch LL	With Switch LX	Without Switch B	Without Switch LL	Without Switch LX
ø32	60.5	108.5	92.5	50.5	98.5	82.5
ø40	69	127	107	59	117	97
ø50	74	142	118	64	132	108
ø63	76	156	126	66	146	116
ø80	83.5	183.5	153.5	73.5	173.5	143.5
ø100	93	193	163	83	183	153

*2: If B + stroke is less than or equal to the value below, LB cannot be selected. ø80: 69 or less

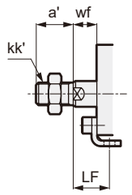
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Axial Foot Type (Compact Type) (LB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension										For female thread									For male thread			
	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch A	With Switch B	With Switch LX	Without Switch A	Without Switch B	Without Switch LX	a'	kk'	wf	LF
ø32	7	18.5	57	30	17	3.2	11.2	57	71	9.2	M8 depth 13	17	25	79.2	53	37	69.2	43	27	23.5	M14×1.5	15	23
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	85.7	59.5	43.5	75.7	49.5	33.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	89.7	60.5	37.5	79.7	50.5	27.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	97.2	66	40	87.2	56	30	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	110	73.5	43.5	100	63.5	33.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	123	83	49	113	73	39	35.5	M26×1.5	18	35

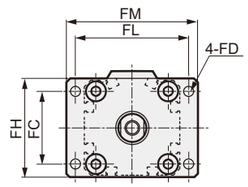
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

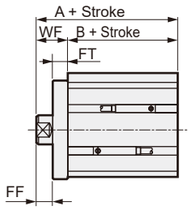
*2: LB2 cannot be selected when B + stroke is at or less than the value below.ø80:72 or less

Code / Bore Size (mm)	For female thread					
	With Switch			Without Switch		
	A	B	LX	A	B	LX
ø32	86.7	60.5	44.5	76.7	50.5	34.5
ø40	95.2	69	53	85.2	59	43
ø50	103.2	74	51	93.2	64	41
ø63	107.2	76	50	97.2	66	40
ø80	120	83.5	53.5	110	73.5	43.5
ø100	133	93	59	123	83	49

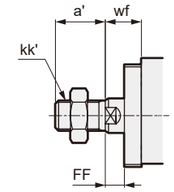
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Rod Side Flange Type (FA)





● For rod end male thread

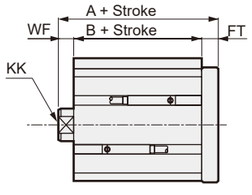


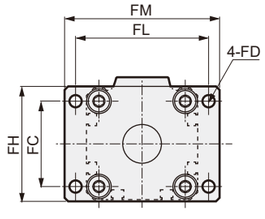
Code / Bore Size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	FF	a'	kk'	wf
ø32	34	5.5	48	56	65	8	9	M8 depth 13	17	70	53	60	43	7	23.5	M14×1.5	15
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	76.5	59.5	66.5	49.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	78.5	60.5	68.5	50.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	84	66	74	56	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	93.5	73.5	83.5	63.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	105	83	95	73	7	35.5	M26×1.5	18

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

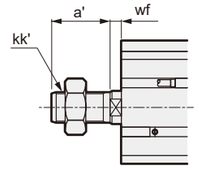
Code / Bore Size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	77.5	60.5	67.5	50.5
ø40	86	69	76	59
ø50	92	74	82	64
ø63	94	76	84	66
ø80	103.5	83.5	93.5	73.5
ø100	115	93	105	83

● Head Side Flange Type (FB)





● For rod end male thread



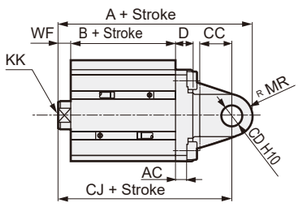
Code / Bore Size (mm)	Common dimension						For female thread						For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B	Without Switch A	Without Switch B	a'	kk'	wf
ø32	34	5.5	48	56	65	8	M8 depth 13	7	68	53	58	43	23.5	M14×1.5	5
ø40	40	5.5	54	62	72	8	M8 depth 13	7	74.5	59.5	64.5	49.5	23.5	M14×1.5	5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	77.5	60.5	67.5	50.5	28.5	M18×1.5	5
ø63	60	9	80	92	108	9	M10 depth 15	8	83	66	73	56	28.5	M18×1.5	5
ø80	77	11	99	116	134	11	M16 depth 21	10	94.5	73.5	84.5	63.5	35.5	M22×1.5	8
ø100	94	11	117	136	154	11	M20 depth 27	12	106	83	96	73	35.5	M26×1.5	8

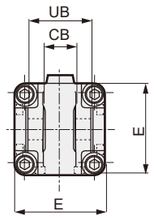
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread			
	With Switch		Without Switch	
	A	B	A	B
ø32	75.5	60.5	65.5	50.5
ø40	84	69	74	59
ø50	91	74	81	64
ø63	93	76	83	66
ø80	104.5	83.5	94.5	73.5
ø100	116	93	106	83

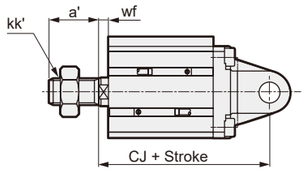
Outline Dimension Drawing (Bore size: ø32 to ø100)

● Double Knuckle Clevis Type (CB)





● For rod end male thread

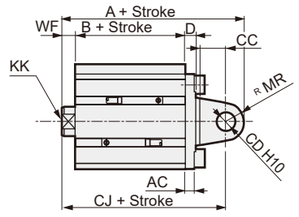


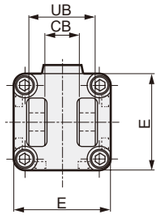
Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	9.5	10$^{+0.4}_{+0.1}$	16	12	10	45	12	21$^{-0.1}_{-0.4}$	M8 depth 13	7	102	53	90	92	43	80	23.5	M14×1.5	5	88	78
ø40	6.5	18$^{+0.4}_{+0.1}$	18	12	10	52	12	36$^{-0.1}_{-0.4}$	M8 depth 13	7	110.5	59.5	98.5	100.5	49.5	88.5	23.5	M14×1.5	5	96.5	86.5
ø50	6.5	18$^{+0.4}_{+0.1}$	18	12	10	64	12	36$^{-0.1}_{-0.4}$	M10 depth 15	8	112.5	60.5	100.5	102.5	50.5	90.5	28.5	M18×1.5	5	97.5	87.5
ø63	7.5	20$^{+0.4}_{+0.1}$	24	14	10	77	16	40$^{-0.1}_{-0.4}$	M10 depth 15	8	127	66	111	117	56	101	28.5	M18×1.5	5	108	98
ø80	10.5	28$^{+0.4}_{+0.1}$	30	20	14	98	20	56$^{-0.1}_{-0.4}$	M16 depth 21	10	155.5	73.5	135.5	145.5	63.5	125.5	35.5	M22×1.5	8	133.5	123.5
ø100	10.5	28$^{+0.4}_{+0.1}$	30	20	16	117	20	56$^{-0.1}_{-0.4}$	M20 depth 27	12	167	83	147	157	73	137	35.5	M26×1.5	8	143	133

*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

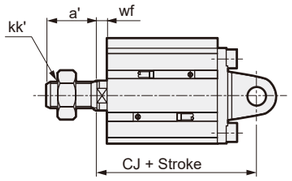
Code / Bore Size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	109.5	60.5	97.5	99.5	50.5	87.5	95.5	85.5
ø40	120	69	108	110	59	98	106	96
ø50	126	74	114	116	64	104	111	101
ø63	137	76	121	127	66	111	118	108
ø80	165.5	83.5	145.5	155.5	73.5	135.5	143.5	133.5
ø100	177	93	157	167	83	147	153	143

● Double clevis type (Compact type) (CB2)





● For rod end male thread



Code / Bore Size (mm)	Common dimension								For female thread								For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch			Without Switch			a'	kk'	wf	With Switch	Without Switch
											A	B	CJ	A	B	CJ				CJ	CJ
ø32	4.5	18$^{+0.4}_{+0.1}$	14	10	5	45	10	36$^{-0.1}_{-0.3}$	M8 depth 13	7	90	53	80	80	43	70	23.5	M14×1.5	5	78	68
ø40	5	18$^{+0.4}_{+0.1}$	14	10	6	52	10	36$^{-0.1}_{-0.3}$	M8 depth 13	7	98.5	59.5	88.5	88.5	49.5	78.5	23.5	M14×1.5	5	86.5	76.5
ø50	6	22$^{+0.4}_{+0.1}$	20	14	7	64	14	44$^{-0.1}_{-0.3}$	M10 depth 15	8	110.5	60.5	96.5	100.5	50.5	86.5	28.5	M18×1.5	5	93.5	83.5
ø63	7	22$^{+0.4}_{+0.1}$	20	14	8	77	14	44$^{-0.1}_{-0.3}$	M10 depth 15	8	118	66	104	108	56	94	28.5	M18×1.5	5	101	91
ø80	9	28$^{+0.4}_{+0.1}$	27	18	10	98	18	56$^{-0.1}_{-0.3}$	M16 depth 21	10	139.5	73.5	121.5	129.5	63.5	111.5	35.5	M22×1.5	8	119.5	109.5
ø100	12	32$^{+0.4}_{+0.1}$	31	22	13	117	22	64$^{-0.1}_{-0.3}$	M20 depth 27	12	162	83	140	152	73	130	35.5	M26×1.5	8	136	126

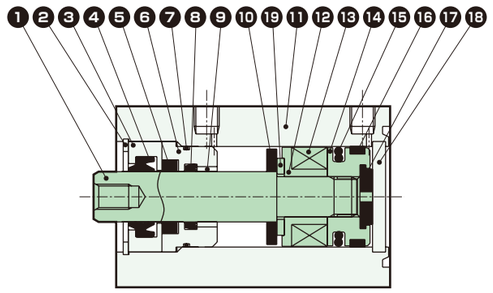
*1: For ø32 to ø50 exceeding 150 strokes, ø63 to ø100 exceeding 200 strokes, the dimensions are as follows.

Code / Bore Size (mm)	For female thread						For male thread	
	With Switch			Without Switch			With Switch	Without Switch
	A	B	CJ	A	B	CJ	CJ	CJ
ø32	97.5	60.5	87.5	87.5	50.5	77.5	85.5	75.5
ø40	108	69	98	98	59	88	96	86
ø50	124	74	110	114	64	100	107	97
ø63	128	76	114	118	66	104	111	101
ø80	149.5	83.5	131.5	139.5	73.5	121.5	129.5	119.5
ø100	172	93	150	162	83	140	146	136

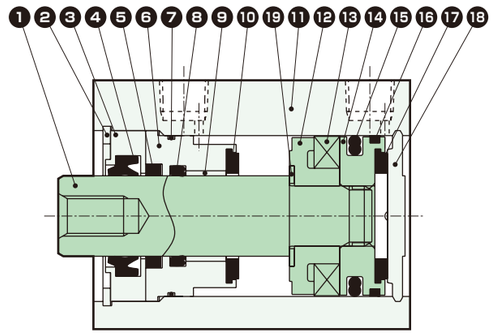
MEMO

Internal Structure Diagram/Material (Bore size: ø20, ø25)

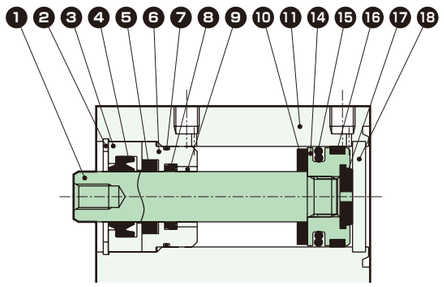
●SSD-KG5L-20, 25
(Double Acting, High Load, Environmentally Resistant Scraper Type with Switch)



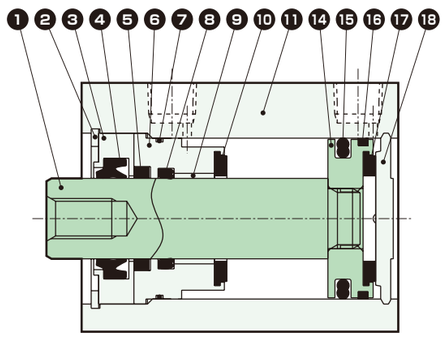
●SSD-KG5L-32 to 50
(Double Acting, High Load, Environmentally Resistant Scraper Type with Switch)



●SSD-KG5-20, 25
(Double Acting, High Load, Environmentally Resistant Scraper Type)



●SSD-KG5-32 to 50
(Double Acting, High Load, Environmentally Resistant Scraper Type)



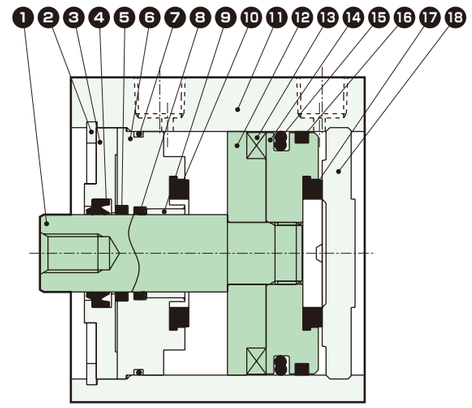
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	ø20, ø25: Stainless steel ø32 to ø50: Steel	Industrial Hard Chrome Plating	11	Cylinder Body	Aluminum Alloy	Hard Anodized
2	C-type retaining ring	Steel	Zinc phosphate	12	Spacer	Special Resin	
3	Rod metal 1	Aluminum Alloy	Chromate	13	Magnet	Plastic	
4	Scraper	Nitrile Rubber		14	Piston	Aluminum Alloy	Chromate
5	Lube keeper	Special rubber		15	Piston Packing	Nitrile Rubber	
6	Rod metal 2	Aluminum Alloy	Alumite	16	Wear Ring	Polyacetal	
7	Rod metal gasket	Nitrile Rubber		17	Cushion rubber H	Urethane Rubber	
8	Rod Packing	Nitrile Rubber		18	Cover	ø20, ø25: Stainless steel ø32 to ø50: Aluminum alloy	(*1) ø32 to ø50: Alumite
9	Bushing	Bearing Alloy		19	Spacer washer	Stainless Steel	
10	Cushion rubber R	Urethane Rubber					

*1: For cover of long stroke type (ø20 with 100 mm stroke and over, ø25, ø32 with 150 mm stroke and over), material: Aluminum alloy, remarks: This will be alumite treatment.

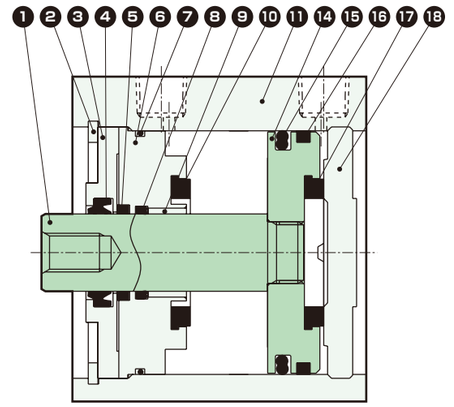
For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Internal Structure Diagram/Material (Bore size: ø63 to ø100)

●SSD-KG5L-63 to 100 (Double acting, High load, Environmental resistant scraper type with switch)



●SSD-KG5-63 to 100 (Double acting, High load, Environmental resistant scraper type)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	10	Cushion rubber R	Urethane Rubber	
2	C-type retaining ring	Steel	Zinc phosphate	11	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod metal 1	Aluminum Alloy	Chromate	12	Spacer	Aluminum Alloy	Chromate
4	Scraper	Nitrile Rubber		13	Magnet	Plastic	
5	Lube keeper	Special rubber		14	Piston	Aluminum Alloy	Chromate
6	Rod metal 2	Aluminum Alloy	Chromate	15	Piston Packing	Nitrile Rubber	
7	Rod metal gasket	Nitrile Rubber		16	Wear Ring	Polyacetal	
8	Rod Packing	Nitrile Rubber		17	Cushion rubber H	Urethane Rubber	
9	Bushing	Bearing Alloy		18	Cover	Aluminum Alloy	Alumite

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

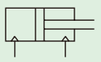


Compact Cylinder
Double Acting, Single Rod Type with Strong Magnetic Field Resistant Switch

SSD-L4 Series

● Bore size: ø40, ø50, ø63, ø83, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD-L4 - 50 - 40 - V0 - D - N - LB - I

SSD-L4	50	40	V0	D	N	LB	I
Model No.	❶ Bore size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting bracket	❼ Accessories

❶Bore Size (mm)

Code	Content
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 50	Every 1 mm

Note: For details on stroke, please refer to P. 636.

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

	LED Indicator Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Contact	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	
Reed									

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

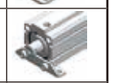
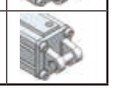
*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❻Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 639 and 640 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❼Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-L4 -..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

❸ Switch Model No.

Specifications

Item	SSD-L4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.1		0.05		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore				
		ø40	ø50	ø63	ø80	ø100
Standard Stroke	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
Minimum Stroke (mm) *1		20				
Maximum Stroke (mm)		50				
Intermediate Stroke *2		1				

*1: For the number of switches that can be mounted and the minimum stroke, refer to the table below.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50	20	20
ø63	20	20
ø80	20	20
ø100	20	20

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	20	30	40	50
ø40	493	546	599	652
ø50	757	841	925	1009
ø63	1089	1200	1311	1422
ø80	1822	1996	2170	2344
φ100	2665	2892	3119	3346

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	1.56×10^{2}	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	1.40×10^{2}	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	2.51×10^{2}	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	2.27×10^{2}	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	3.93×10^{2}	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	3.57×10^{2}	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

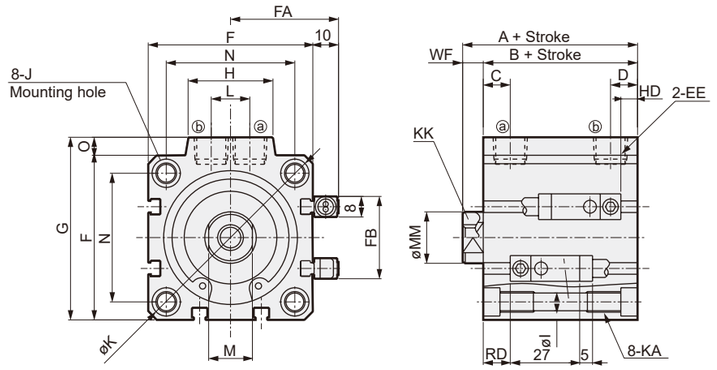
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

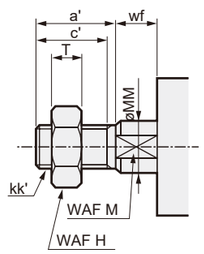
*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

Outline Dimension Drawing

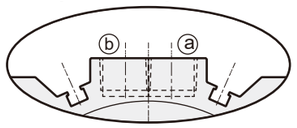
●SSD-L4-40 to 100



● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore size (mm)	A	B	C	D	EE	F	FA	FB	G	H	I	J
ø40	56.5	49.5	12	8.5	Rc1/8	52	36	31	57	24	5.5	Counterbore ø9 depth 5.5 ø5.5 through hole
ø50	58.5	50.5	10.5	10.5	Rc1/4	64	42	32	71	33	6.9	Counterbore ø11 depth 6.5 ø6.9 through hole
ø63	64	56	13	11	Rc1/4	77	48.5	32	84	33	8.7	Counterbore ø14 depth 9 ø8.7 through hole
ø80	73.5	63.5	16	13	Rc3/8	98	59	32	104	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole
ø100	85	73	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole

Code / Bore size (mm)	K	KA	KK	M	MM	N	O	WF	RD	HD
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	7	13	7.5
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	8	13	8.5
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	8	13.5	13.5
ø80	132	M12 depth 28	M16 depth 21	22	25	77	6	10	16	18.5
ø100	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12	20	24

*1: The A and B dimensions for intermediate strokes are the same as the standard stroke above them.

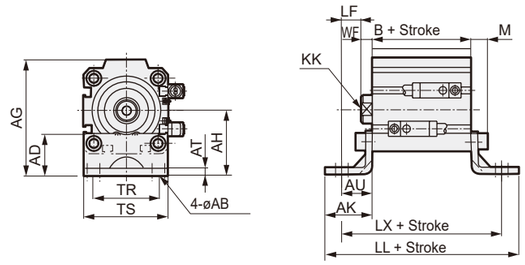
***2: For outline dimension drawings of individual accessories, see P. 379 to 381.**

● Rod end male thread part dimension table

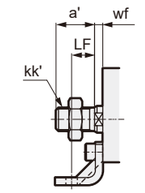
Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
ø50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

Outline Dimension Drawing

● Axial Foot Type (LB)



● For rod end male thread

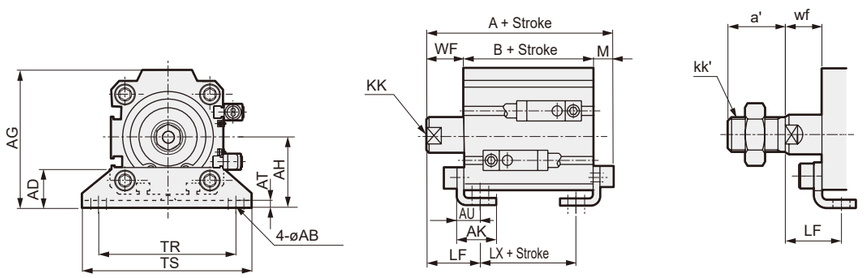


Code / Bore Size (mm)	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	B	LL	LX	a'	kk'	wf	LF
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	49.5	107.5	87.5	23.5	M14×1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	50.5	118.5	94.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	56	136	106	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	63.5	163.5	133.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	73	173	143	35.5	M26×1.5	8	27

*1: If B + stroke is less than or equal to the value below, LB cannot be selected.
ø80: 69 or less

● Axial Foot Type (Compact Type) (LB2)

● For rod end male thread

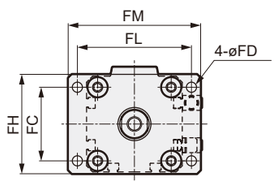


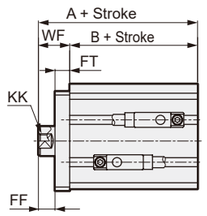
Code / Bore Size (mm)	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	A	B	LX	a'	kk'	wf	LF
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	75.7	49.5	33.5	23.5	M14×1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	79.7	50.5	27.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	87.2	56	30	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	100	63.5	33.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	113	73	39	35.5	M26×1.5	18	35

*1: If B + stroke is less than or equal to the value below, LB2 cannot be selected.
ø80: 72 or less

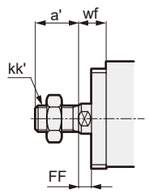
Outline Dimension Drawing

● Rod Side Flange Type (FA)



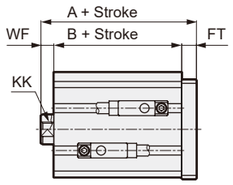


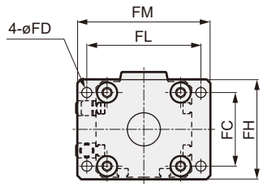
● For rod end male thread



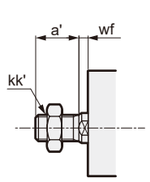
Code	Common dimension						For female thread					For male thread			
Bore Size (mm)	FC	FD	FH	FL	FM	FT	FF	KK	WF	A	B	FF	a'	kk'	wf
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	66.5	49.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	68.5	50.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	74	56	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	83.5	63.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	95	73	7	35.5	M26×1.5	18

● Head Side Flange Type (FB)





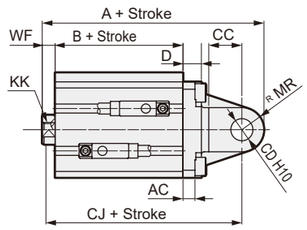
● For rod end male thread

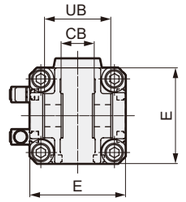


Code	Common dimension						For female thread				For male thread			
Bore Size (mm)	FC	FD	FH	FL	FM	FT	KK	WF	A	B	a'	kk'	wf	With Switch CJ
ø40	40	5.5	54	62	72	8	M8 depth 13	7	64.5	49.5	23.5	M14×1.5	15	76.5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	67.5	50.5	28.5	M18×1.5	15	83.5
ø63	60	9	80	92	108	9	M10 depth 15	8	73	56	28.5	M18×1.5	15	91
ø80	77	11	99	116	134	11	M16 depth 21	10	84.5	63.5	35.5	M22×1.5	18	109.5
ø100	94	11	117	136	154	11	M20 depth 27	12	96	73	35.5	M26×1.5	18	126

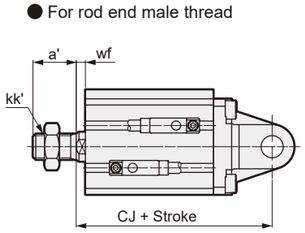
Outline Dimension Drawing

● Double Knuckle Clevis Type (CB)



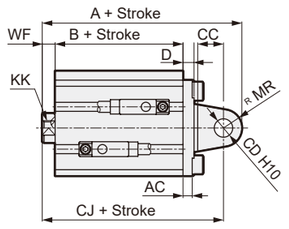


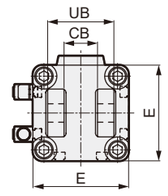
● For rod end male thread



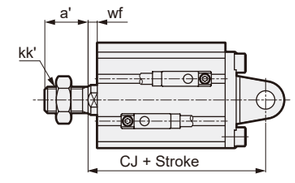
Code	Common dimension								For female thread					For male thread			
Bore Size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ
ø40	6.5	18 +0.4 +0.1	18	12	10	52	12	36 -0.1 -0.4	M8 depth 13	7	100.5	49.5	88.5	23.5	M14×1.5	5	86.5
ø50	6.5	18 +0.4 +0.1	18	12	10	64	12	36 -0.1 -0.4	M10 depth 15	8	102.5	50.5	90.5	28.5	M18×1.5	5	87.5
ø63	7.5	20 +0.4 +0.1	24	14	10	77	16	40 -0.1 -0.4	M10 depth 15	8	117	56	101	28.5	M18×1.5	5	98
ø80	10.5	28 +0.4 +0.1	30	20	14	98	20	56 -0.1 -0.4	M16 depth 21	10	145.5	63.5	125.5	35.5	M22×1.5	8	123.5
ø100	10.5	28 +0.4 +0.1	30	20	16	117	20	56 -0.1 -0.4	M20 depth 27	12	157	73	137	35.5	M26×1.5	8	133

● Double clevis type (Compact type) (CB2)





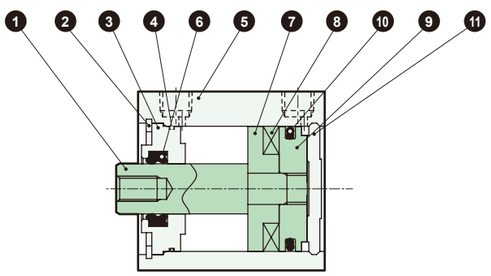
● For rod end male thread



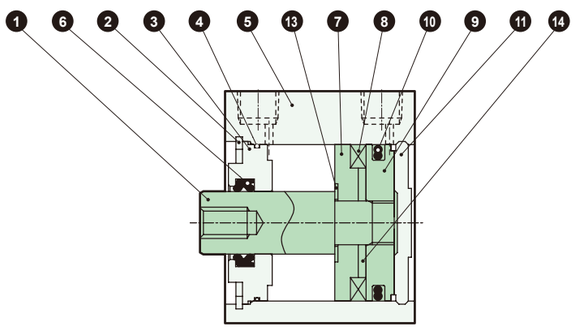
Code	Common dimension								For female thread					For male thread			
Bore Size (mm)	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ
ø40	5	18 +0.4 +0.1	14	10	6	52	10	36 -0.1 -0.3	M8 depth 13	7	88.5	49.5	78.5	23.5	M14×1.5	5	76.5
ø50	6	22 +0.4 +0.1	20	14	7	64	14	44 -0.1 -0.3	M10 depth 15	8	100.5	50.5	86.5	28.5	M18×1.5	5	83.5
ø63	7	22 +0.4 +0.1	20	14	8	77	14	44 -0.1 -0.3	M10 depth 15	8	108	56	94	28.5	M18×1.5	5	91
ø80	9	28 +0.4 +0.1	27	18	10	98	18	56 -0.1 -0.3	M16 depth 21	10	129.5	63.5	111.5	35.5	M22×1.5	8	109.5
ø100	12	32 +0.4 +0.1	31	22	13	117	22	64 -0.1 -0.3	M20 depth 27	12	152	73	130	35.5	M26×1.5	8	126

Internal Structure Diagram/Material

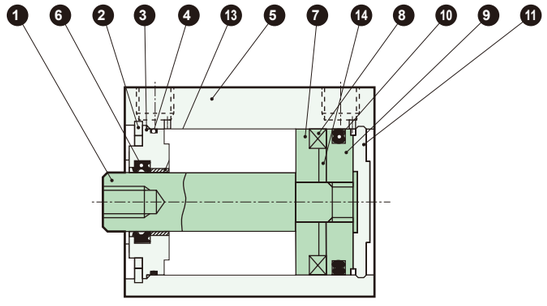
●SSD-L4-40 (Double acting with switch for strong magnetic field)



●SSD-L4-50 (Double acting with switch for strong magnetic field)



●SSD-L4-63 to 100 (Double acting with switch for strong magnetic field)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring	Steel	Zinc phosphate
3	Rod Metal	ø40, ø50: Special aluminum ø63 to ø100: Aluminum alloy	Alumite
4	Rod metal gasket	Nitrile Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized
6	Rod Packing	Nitrile Rubber	
7	Spacer	ø40, ø63 to ø100: Aluminum alloy ø50: Resin	ø40, ø63 to ø100: Chromate

Part No.	Part Name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum Alloy	Chromate
10	Piston Packing	Nitrile Rubber	
11	Cover	Aluminum Alloy	Alumite
12	Bushing	Bearing Alloy	
13	Spacer washer	Stainless Steel	
14	Collar	Aluminum Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

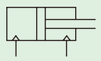
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, High Load Type with Switch for Strong Magnetic Field

SSD-KL4 Series

● Bore size: ø40, ø50, ø63, ø83, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

SSD-KL4 - 50 - 40 - V0 - D - N - LB - I

SSD-KL4	50	40	V0	D	N	LB	I
Model No.	❶ Bore size	❷ Stroke	❸ Switch Model No.	❹ Number of Switches	❺ Option	❻ Mounting bracket	❼ Accessories

❶Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø40, ø50	20 to 150	Every 1 mm
ø63 to ø100	20 to 200	

Note: For details on stroke, please refer to P. 646.

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	LED Indicator Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❻Mounting type

Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 649 and 650 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❼Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-KL4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

❸ Switch Model No.

Specifications

Item	SSD-KL4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. Operating Pressure MPa	1.0				
Min. Operating Pressure MPa	0.1		0.05		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.63	0.98	1.56	2.51	3.92

Stroke

	Stroke (mm)	Applicable Bore				
		ø40	ø50	ø63	ø80	ø100
Standard Stroke	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
	60	●	●	●	●	●
	70	●	●	●	●	●
	80	●	●	●	●	●
	90	●	●	●	●	●
	100	●	●	●	●	●
Minimum Stroke (mm) *1		20				
Maximum Stroke (mm)		150		200		
Intermediate Stroke *2		Every 1 mm				

***1: For the number of switches attachable and minimum stroke, refer to the table below.**
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50	20	20
ø63	20	20
ø80	20	20
ø100	20	20

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	20	30	40	50	60	70	80	90	100
ø40	546	599	652	705	758	811	864	917	970
ø50	841	925	1009	1093	1177	1261	1345	1429	1513
ø63	1199	1309	1419	1529	1639	1749	1859	1969	2079
ø80	1995	2169	2343	2517	2691	2865	3039	3213	3387
ø100	2893	3120	3347	3574	3801	4028	4255	4482	4709

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.06×10^{2}	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	1.65×10^{2}	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	1.56×10^{2}	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	1.40×10^{2}	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	2.51×10^{2}	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	2.27×10^{2}	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	3.93×10^{2}	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	3.57×10^{2}	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

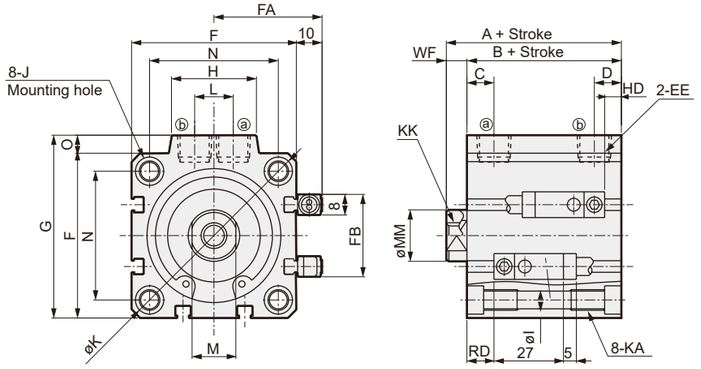
Mounting Bracket Model No. Notation Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

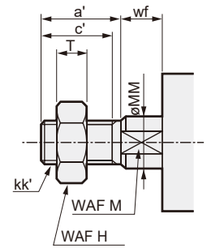
*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model No. notation method (P. 682).

Outline Dimension Drawing

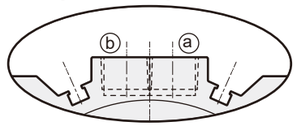
●SSD-KL4-40 to 100



● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore size (mm)	A	B	C	D	EE	F	FA	FB	G	H	I	J
ø40	66.5	59.5	12	8.5	Rc1/8	52	36	31	57	24	5.5	Counterbore ø9 depth 5.5 ø5.5 through hole
ø50	68.5	60.5	10.5	10.5	Rc1/4	64	42	32	71	33	6.9	Counterbore ø11 depth 6.5 ø6.9 through hole
ø63	74	66	13	11	Rc1/4	77	48.5	32	84	33	8.7	Counterbore ø14 depth 9 ø8.7 through hole
ø80	83.5	73.5	16	13	Rc3/8	98	59	32	104	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole
ø100	95	83	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole

Code / Bore size (mm)	K	KA	KK	L	M	MM	N	O	WF	RD	HD
ø40	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7	20.5	10
φ50	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8	20.5	11
ø63	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8	18.5	18.5
ø80	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10	21	23.5
ø100	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12	25	29

*1: The A and B dimensions for intermediate strokes are the same as the standard stroke above them.

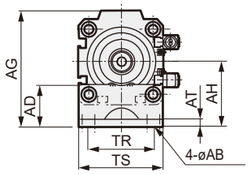
***2: For outline dimension drawings of individual accessories, refer to P. 379 to 381.**

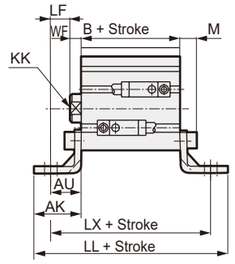
● Rod end male thread part dimension table

Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø40	23.5	20.5	22	M14×1.5	14	16	8	5
φ50	28.5	26	27	M18×1.5	17	20	11	5
ø63	28.5	26	27	M18×1.5	17	20	11	5
ø80	35.5	32.5	32	M22×1.5	22	25	13	8
ø100	35.5	32.5	41	M26×1.5	27	30	16	8

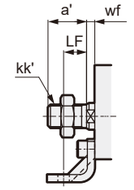
Outline Dimension Drawing

● Axial Foot Type (LB)



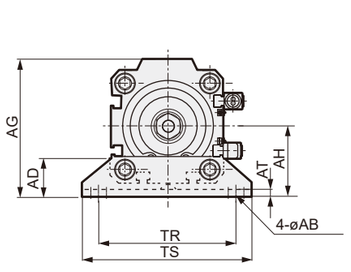


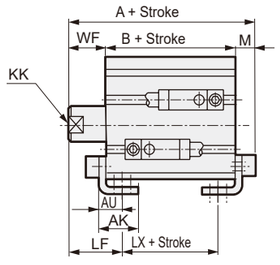
● For rod end male thread



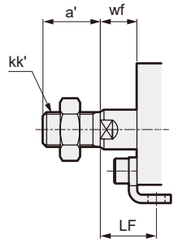
Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	B	LL	LX	For male thread a'	kk'	wf	LF
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	59.5	117.5	97.5	23.5	M14×1.5	5	14
φ50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	60.5	128.5	104.5	28.5	M18×1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	66	146	116	28.5	M18×1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	73.5	173.5	143.5	35.5	M22×1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	83	183	153	35.5	M26×1.5	8	27

● Axial Foot Type (Compact Type) (LB2)





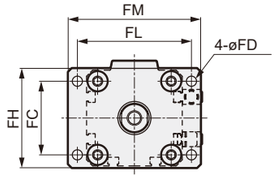
● For rod end male thread

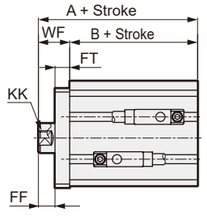


Code / Bore Size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	A	B	LX	For male thread a'	kk'	wf	LF
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	85.7	59.5	43.5	23.5	M14×1.5	15	23
φ50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	89.7	60.5	37.5	28.5	M18×1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	97.2	66	40	28.5	M18×1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	110	73.5	43.5	35.5	M22×1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	123	83	49	35.5	M26×1.5	18	35

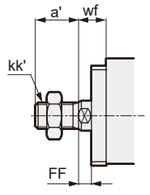
Outline Dimension Drawing

● Rod Side Flange Type (FA)



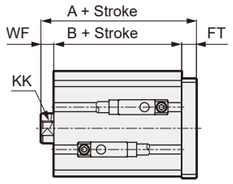


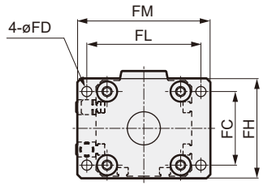
● For rod end male thread



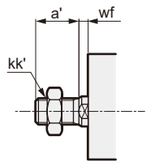
Code / Bore Size (mm)	Common dimension						For female thread					For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	A	B	FF	a'	kk'	wf
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	76.5	59.5	7	23.5	M14×1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	78.5	60.5	6	28.5	M18×1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	84	66	6	28.5	M18×1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	93.5	73.5	7	35.5	M22×1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	105	83	7	35.5	M26×1.5	18

● Head Side Flange Type (FB)





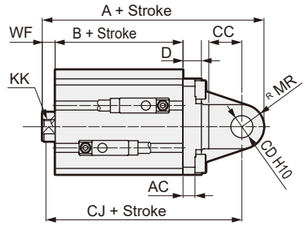
● For rod end male thread

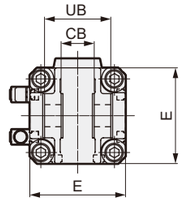


Code / Bore Size (mm)	Common dimension						For female thread				For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	A	B	a'	kk'	wf	
ø40	40	5.5	54	62	72	8	M8 depth 13	7	74.5	59.5	23.5	M14×1.5	5	
ø50	50	6.6	67	76	89	9	M10 depth 15	8	77.5	60.5	28.5	M18×1.5	5	
ø63	60	9	80	92	108	9	M10 depth 15	8	83	66	28.5	M18×1.5	5	
ø80	77	11	99	116	134	11	M16 depth 21	10	94.5	73.5	35.5	M22×1.5	8	
ø100	94	11	117	136	154	11	M20 depth 27	12	105	83	35.5	M26×1.5	8	

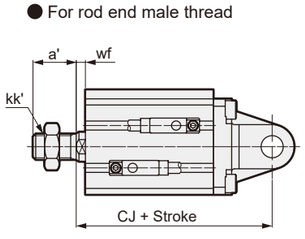
Outline Dimension Drawing

● Double Knuckle Clevis Type (CB)



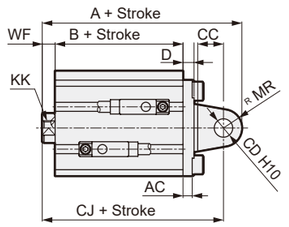


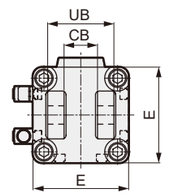
● For rod end male thread



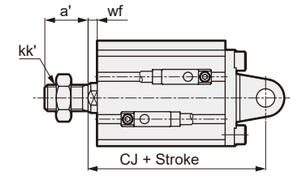
Code / Bore Size (mm)	Common dimension								For female thread					For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ	
ø40	6.5	18 +0.4 +0.1	18	12	10	52	12	36 -0.1 -0.4	M8 depth 13	7	110.5	59.5	98.5	23.5	M14×1.5	5	96.5	
ø50	6.5	18 +0.4 +0.1	18	12	10	64	12	36 -0.1 -0.4	M10 depth 15	8	112.5	60.5	100.5	28.5	M18×1.5	5	97.5	
ø63	7.5	20 +0.4 +0.1	24	14	10	77	16	40 -0.1 -0.4	M10 depth 15	8	127	66	111	28.5	M18×1.5	5	108	
ø80	10.5	28 +0.4 +0.1	30	20	14	98	20	56 -0.1 -0.4	M16 depth 21	10	155.5	73.5	135.5	35.5	M22×1.5	8	133.5	
ø100	10.5	28 +0.4 +0.1	30	20	16	117	20	56 -0.1 -0.4	M20 depth 27	12	167	83	147	35.5	M26×1.5	8	143	

● Double clevis type (Compact type) (CB2)





● For rod end male thread

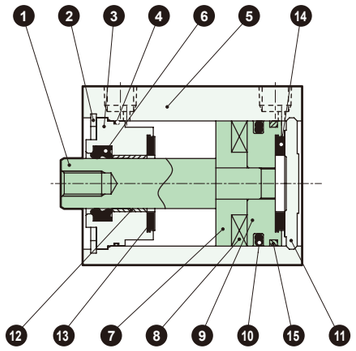


Code / Bore Size (mm)	Common dimension								For female thread					For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ	
ø40	5	18 +0.4 +0.1	14	10	6	52	10	36 -0.1 -0.3	M8 depth 13	7	98.5	59.5	88.5	23.5	M14×1.5	5	86.5	
ø50	6	22 +0.4 +0.1	20	14	7	64	14	44 -0.1 -0.3	M10 depth 15	8	110.5	60.5	96.5	28.5	M18×1.5	5	93.5	
ø63	7	22 +0.4 +0.1	20	14	8	77	14	44 -0.1 -0.3	M10 depth 15	8	118	66	104	28.5	M18×1.5	5	101	
ø80	9	28 +0.4 +0.1	27	18	10	98	18	56 -0.1 -0.3	M16 depth 21	10	139.5	73.5	121.5	35.5	M22×1.5	8	119.5	
ø100	12	32 +0.4 +0.1	31	22	13	117	22	64 -0.1 -0.3	M20 depth 27	12	162	83	140	35.5	M26×1.5	8	136	

Internal Structure Diagram/Material

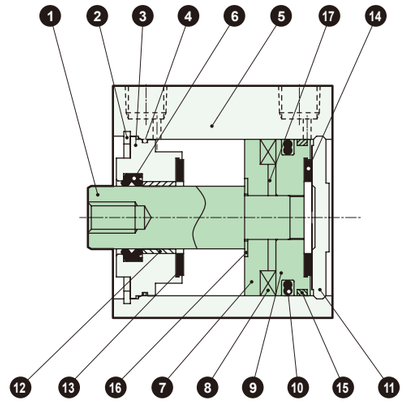
●SSD-KL4-40

(Double acting, High load with switch for strong magnetic field)



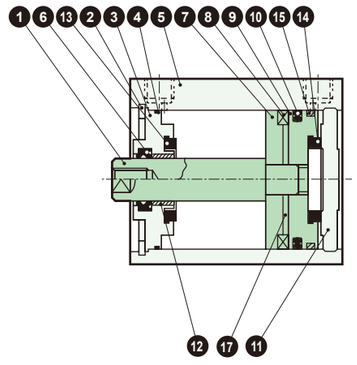
●SSD-KL4-50

(Double acting, High load with switch for strong magnetic field)



●SSD-KL4-63 to 100

(Double acting, High load with switch for strong magnetic field)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	9	Piston	Aluminum Alloy	
2	C-type retaining ring	Steel	Zinc phosphate	10	Piston Packing	Nitrile Rubber	
3	Rod Metal	Aluminum Alloy	Alumite	11	Cover	Aluminum Alloy	Alumite
4	Rod metal gasket	Nitrile Rubber		12	Bushing	Bearing Alloy	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Cushion Rubber (R)	Urethane Rubber	
6	Rod Packing	Nitrile Rubber		14	Cushion rubber (H)	Urethane Rubber	
7	Spacer	ø40, ø63 to ø100: Aluminum alloy ø50: Resin	ø40, ø63 to ø100: Chromate	15	Wear Ring	Polyacetal	
				16	Spacer washer	Stainless Steel	
8	Magnet	Plastic		17	Collar	Aluminum Alloy	

For maintenance parts, please visit the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

MEMO

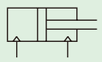
Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Cylinder Double Acting, Single Rod Type with Switch for Strong Magnetic Field with Coil Scraper

SSD-G1L4 Series

● Bore size: ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

SSD-G1L4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶	❷	❸	❹	❺	❻	❼
SSD-G1L4	50	40	V0	D	N	LB	I
Model No.	Bore size	Stroke	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

❶Bore Size (mm)

Code	Content
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø40 to ø100	20 to 50	Every 1 mm

*1: For the number of switches that can be mounted and the minimum stroke, see P. 656.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

	LED Indicator Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Contact		2-wire	110	24	7 to 20	5 to 50	V0□	-	
Reed	1-Color For Compact Strong Magnetic Field								

*1: For "□" in the switch model No., enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model No.s are also available. (Custom products) For details, refer to P. 869.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0[3]
5 m V0[5]

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❻Mounting type Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (pin and retaining ring included)	
	CB2	Clevis bracket (compact) (pin and snap ring included)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 659 and 660 for outline dimension drawings. Also, the model No. specifying the protrusion length will be printed at the end of the model No. on the nameplate included to the main body. For cylinder model No.s when ordering cylinders and LB2/FA brackets separately, please contact us.

❼Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)

SSD-G1L4 - ..... - XP5

Switch Single Unit Model No. Notation Method

SW - V0

	❸
SW	V0
	Switch Model No.

Specifications

Item	SSD-G1L4				
Tube I.D. mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Max. working pressure MPa	1.0				
Min. Operating Pressure MPa	0.15		0.1		
Proof Pressure MPa	1.6				
Ambient Temperature °C	−10 to 60 (no freezing)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable Absorbed Energy J	0.092	0.1	0.12	0.27	0.56

Stroke

Stroke (mm)		Applicable Bore				
		ø40	ø50	ø63	ø80	ø100
Standard Stroke	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
Minimum Stroke (mm) *1		20				
Maximum Stroke (mm)		50				
Intermediate Stroke *2		1				

***1: For the number of switches attachable and minimum stroke, refer to the table below.**
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50	20	20
ø63	20	20
ø80	20	20
ø100	20	20

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	20	30	40	50
ø40	575	628	681	734
ø50	876	960	1044	1128
ø63	1240	1351	1462	1573
ø80	2074	2248	2422	2596
ø100	3000	3227	3454	3681

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

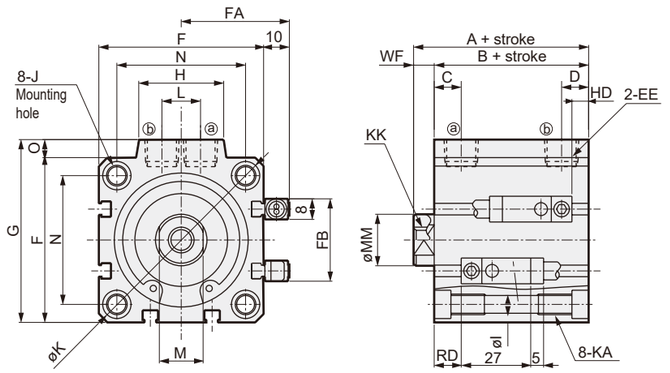
Mounting Bracket Model No. Display Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

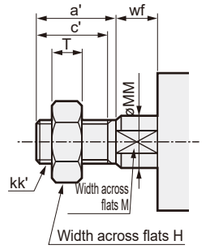
*1: Foot type mounting brackets come in sets of 2 pcs..
*2: When mounting with through-bolts, refer to the mounting bolt model number notation method (P. 682).

Outline Dimension Drawing

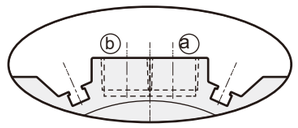
● SSD-G1L4-40 to 100



● Rod end male thread



[Bore size ø100]



* Only the ø100 port surface has switch grooves.

Code / Bore size (mm)	A	B	C	D	EE	F	FA	FB	G	H	I	J
ø40	66.5	59.5	12	8.5	Rc1/8	52	36	31	57	24	5.5	Counterbore ø9 depth 5.5 ø5.5 through hole
ø50	68.5	60.5	10.5	10.5	Rc1/4	64	42	32	71	33	6.9	Counterbore ø11 depth 6.5 ø6.9 through hole
ø63	74	66	13	11	Rc1/4	77	48.5	32	84	33	8.7	Counterbore ø14 depth 9 ø8.7 through hole
ø80	83.5	73.5	16	13	Rc3/8	98	59	32	104	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole
ø100	95	83	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole

Code / Bore size (mm)	K	KA	KK	L	M	MM	N	O	WF	RD	HD	
ø40	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7	23	7.5	
ø50	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8	23	8.5	
ø63	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8	23.5	13.5	
ø80	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10	26	18.5	
ø100	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12	30	24	

*1: The A and B dimensions for intermediate strokes are the same as the standard stroke above them.

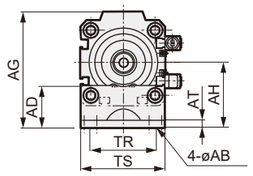
***2: For outline dimension drawings of individual accessories, see P. 379 to 381.**

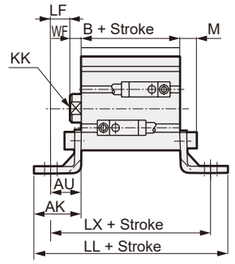
● Rod end male thread dimension table

Code / Bore Size (mm)	a'	c'	H	kk'	M	MM	T	wf'
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

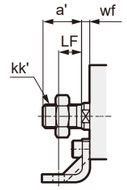
Outline Dimension Drawing

● Axial Foot Type (LB)



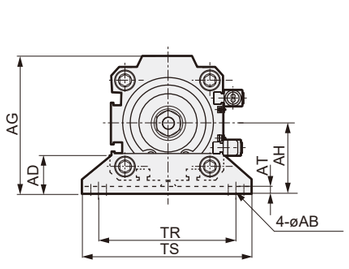


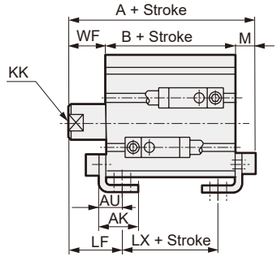
● In case of male thread at rod end



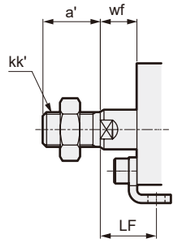
Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	B	LL	LX	For male thread a'	kk'	wf	LF
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	59.5	117.5	97.5	23.5	M14 × 1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	60.5	128.5	104.5	28.5	M18 × 1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	66	146	116	28.5	M18 × 1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	73.5	173.5	143.5	35.5	M22 × 1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	83	183	153	35.5	M26 × 1.5	8	27

● Axial foot (compact) (LB2)





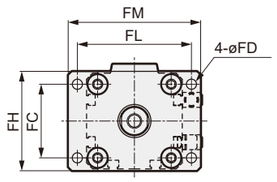
● In case of male thread at rod end

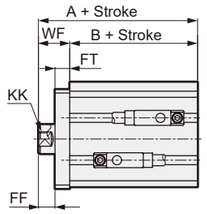


Code / Bore size (mm)	Common dimension AB	AD	AG	AH	AK	AT	AU	TR	TS	M	For female thread KK	WF	LF	A	B	LX	For male thread a'	kk'	wf	LF
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	85.7	59.5	43.5	23.5	M14 × 1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	89.7	60.5	37.5	28.5	M18 × 1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	97.2	66	40	28.5	M18 × 1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	110	73.5	43.5	35.5	M22 × 1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	123	83	49	35.5	M26 × 1.5	18	35

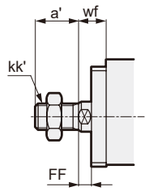
Outline Dimension Drawing

● Rod Side Flange Type (FA)



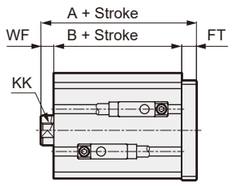


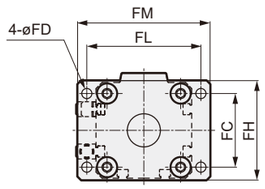
● For rod end male thread



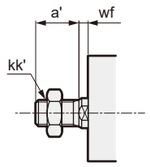
Code / Bore size (mm)	Common dimension						For female thread					For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	A	B	FF	a'	kk'	wf
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	76.5	59.5	7	23.5	M14 × 1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	78.5	60.5	6	28.5	M18 × 1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	84	66	6	28.5	M18 × 1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	93.5	73.5	7	35.5	M22 × 1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	105	83	7	35.5	M26 × 1.5	18

● Head Side Flange Type (FB)





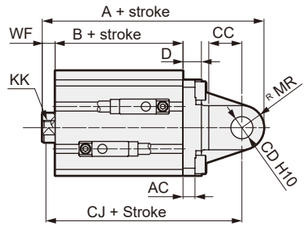
● For rod end male thread

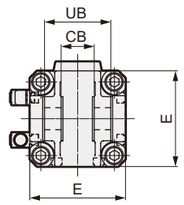


Code / Bore size (mm)	Common dimension						For female thread				For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	A	B	a'	kk'	wf	
ø40	40	5.5	54	62	72	8	M8 depth 13	7	74.5	59.5	23.5	M14 × 1.5	5	
ø50	50	6.6	67	76	89	9	M10 depth 15	8	77.5	60.5	28.5	M18 × 1.5	5	
ø63	60	9	80	92	108	9	M10 depth 15	8	83	66	28.5	M18 × 1.5	5	
ø80	77	11	99	116	134	11	M16 depth 21	10	94.5	73.5	35.5	M22 × 1.5	8	
ø100	94	11	117	136	154	11	M20 depth 27	12	106	83	35.5	M26 × 1.5	8	

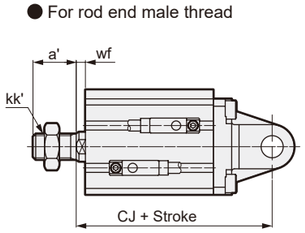
Outline Dimension Drawing

● Double Yoke Clevis Type (CB)



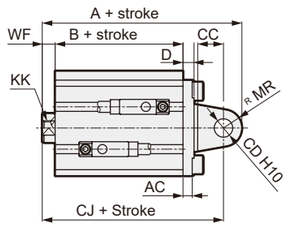


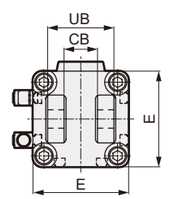
● For rod end male thread



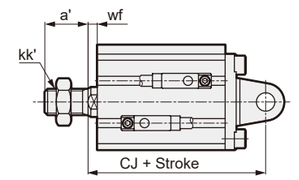
Code / Bore size (mm)	Common dimension								For female thread					For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ	
ø40	6.5	18 +0.4 +0.1	18	12	10	52	12	36 -0.1 -0.4	M8 depth 13	7	110.5	59.5	98.5	23.5	M14 × 1.5	5	96.5	
ø50	6.5	18 +0.4 +0.1	18	12	10	64	12	36 -0.1 -0.4	M10 depth 15	8	112.5	60.5	100.5	28.5	M18 × 1.5	5	97.5	
ø63	7.5	20 +0.4 +0.1	24	14	10	77	16	40 -0.1 -0.3	M10 depth 15	8	127	66	111	28.5	M18 × 1.5	5	108	
ø80	10.5	28 +0.4 +0.1	30	20	14	98	20	56 -0.1 -0.4	M16 depth 21	10	155.5	73.5	135.5	35.5	M22 × 1.5	8	133.5	
ø100	10.5	28 +0.4 +0.1	30	20	16	117	20	56 -0.1 -0.4	M20 depth 27	12	167	83	147	35.5	M26 × 1.5	8	143	

● Double clevis type (Compact type)(CB2)





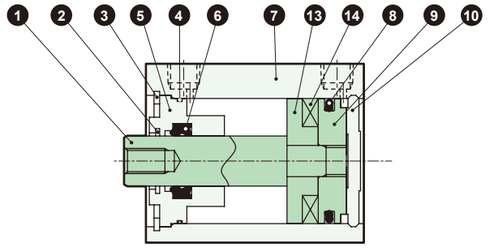
● For rod end male thread



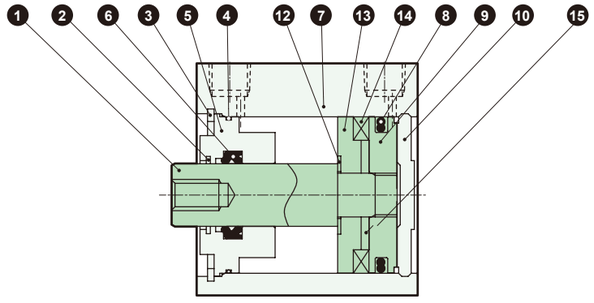
Code / Bore size (mm)	Common dimension								For female thread					For male thread				
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	A	B	CJ	a'	kk'	wf	With Switch CJ	
ø40	5	18 +0.4 +0.1	14	10	6	52	10	36 -0.1 -0.3	M8 depth 13	7	98.5	59.5	88.5	23.5	M14 × 1.5	5	86.5	
ø50	6	22 +0.4 +0.1	20	14	7	64	14	44 -0.1 -0.3	M10 depth 15	8	110.5	60.5	96.5	28.5	M18 × 1.5	5	93.5	
ø63	7	22 +0.4 +0.1	20	14	8	77	14	44 -0.1 -0.3	M10 depth 15	8	118	66	104	28.5	M18 × 1.5	5	101	
ø80	9	28 +0.4 +0.1	27	18	10	98	18	56 -0.1 -0.3	M16 depth 21	10	139.5	73.5	121.5	35.5	M22 × 1.5	8	119.5	
ø100	12	32 +0.4 +0.1	31	22	13	117	22	64 -0.1 -0.3	M20 depth 27	12	162	83	140	35.5	M26 × 1.5	8	136	

Internal Structure Diagram/Material

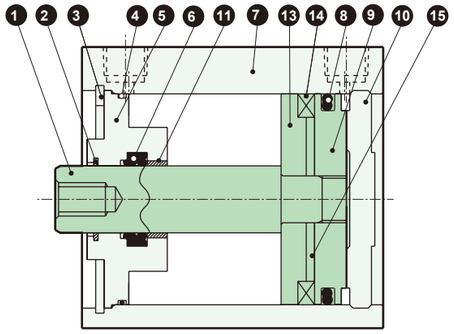
● SSD-G1L4-40
(double acting/with strong magnetic field proof switch/with coil scraper)



● SSD-G1L4-50
(double acting/with strong magnetic field proof switch/with coil scraper)



● SSD-G1L4-63 to 100
(double acting/with strong magnetic field proof switch/with coil scraper)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating	9	Piston	Aluminum Alloy	Chromate
2	Coil scraper	Phosphor bronze		10	Cover	Aluminum Alloy	Chromate
3	C-type retaining ring for bore	Steel	Zinc phosphate	11	Bushing	Bearing Alloy	
4	Rod metal gasket	Nitrile Rubber		12	Spacer washer	Stainless Steel	
5	Rod Metal	Aluminum Alloy		13	Spacer	ø40, ø63 to ø100: Aluminum alloy ø50: Resin	ø40, ø63 to ø100: Chromate
6	Rod Packing	Nitrile Rubber	Chromate				
7	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Magnet	Plastic	
8	Piston Packing	Nitrile Rubber		15	Collar	Aluminum Alloy	

For maintenance parts, refer to the CKD component product site (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> See "Maintenance Parts".

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

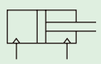


Compact Cylinder Double Acting, High Load Type, With Switch for Strong Magnetic Field, With Coil Scraper

SSD-KG1L4 Series

● Tube bore: ø40, ø50, ø63, ø83, ø100

Circuit Diagram Symbol



RoHS

Model No. Notation Method

SSD-KG1L4 - 50 - 40 - V0 - D - N - LB - I

Model No.	❶	❷	❸	❹	❺	❻	❼
	Bore size	Stroke	Switch Model No.	Number of Switches	Option	Mounting bracket	Accessories

❶Tube Inner Diameter (mm)

Code	Content
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø40, ø50	20 to 150	Every 1 mm
ø63 to ø100	20 to 200	

*1: For the number of switches that can be mounted and the minimum stroke, see P. 666.
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Contact									
Reed	1-Color For Compact Strong Magnetic Field	2-wire	110	24	7 to 20	5 to 50	V0□	-	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: Switches other than the above switch model numbers are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m V0
3 m V0 3
5 m V0 5

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Rod end female thread	
N	Rod end male thread	

❻Mounting type Mounting brackets are shipped included to the product.

	Code	Content	
	LB	Axial Foot Type	
*1	LB2	Axial foot type (Compact type)	
*1	FA	Rod Side Flange Type	
	FB	Head Side Flange Type	
	CB	Double Clevis Type (Pin and Retaining Ring Attached)	
	CB2	Clevis bracket (compact) (pin and snap ring attached)	

*1: When LB2 or FA is selected, the piston rod protrusion dimension WF differs from the standard. See P. 669 and 670 for outline dimension drawings. Also, the model number specifying the protrusion length will be printed at the end of the model number on the nameplate included to the main body. For cylinder model numbers when ordering cylinders and LB2/FA brackets separately, please contact us.

❼Accessories

Code	Content	
I	Single Knuckle	
I2	Single Knuckle (compact)	
Y	Double Knuckle (pin and retaining ring included)	
Y2	Double knuckle (compact) (pin and snap ring included)	

*1: Selectable when rod end male thread "N" is selected.
*2: "I", "I2", "Y", and "Y2" cannot be selected at the same time.

About Custom Product Specifications

For details, refer to P. 690 to P. 694.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
-R1, R2	With spigot joint
Rod End Shape Modification	Refer to Ending 11.

Model No. Example)
SSD-KG1L4 - ..... - XP5

Switch Single Unit Model No. Display Method

SW - V0

❸ Switch Model No.

Specifications

Item	SSD-KG1L4				
Bore size mm	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Maximum operating pressure MPa	1.0				
Min. Operating Pressure MPa	0.15		0.1		
Proof pressure MPa	1.6				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	Rc1/8	Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.0}_{0}$				
Operating Piston Speed mm/s	50 to 500		50 to 300		
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.63	0.98	1.56	2.51	3.92

Stroke

Stroke (mm)		Applicable Bore				
		ø40	ø50	ø63	ø80	ø100
Standard Stroke	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
	60	●	●	●	●	●
	70	●	●	●	●	●
	80	●	●	●	●	●
	90	●	●	●	●	●
	100	●	●	●	●	●
Minimum Stroke (mm) *1		20				
Maximum Stroke (mm)		150		200		
Intermediate Stroke *2		Every 1 mm				

***1: For the number of switches attachable and minimum stroke, refer to the table below.**
*2: The overall length dimension for intermediate stroke is the same as the standard stroke above it.

Number of Switches Mounted and Min. Stroke (mm)

Switch Model No.	V0	
Number of Switches / Bore Size (mm)	1	2
ø40	20	20
ø50	20	20
ø63	20	20
ø80	20	20
ø100	20	20

Cylinder Weight Table (Weight with switch is when 2 cylinder switches are included)

(Unit: g)

Stroke (mm) / Bore Size (mm)	20	30	40	50	60	70	80	90	100
ø40	628	681	734	787	840	893	946	999	1052
ø50	960	1044	1128	1212	1296	1380	1464	1548	1632
ø63	1350	1461	1572	1683	1794	1905	2016	2127	2238
ø80	2247	2421	2595	2769	2943	3117	3291	3465	3639
φ100	3228	3455	3682	3909	4136	4363	4590	4817	5044

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	-	1.88×10^{2}	2.51×10^{2}	3.77×10^{2}	5.03×10^{2}	6.28×10^{2}	7.54×10^{2}	8.80×10^{2}	1.01×10^{3}	1.13×10^{3}	1.26×10^{3}
	Pull	-	1.58×10^{2}	2.11×10^{2}	3.17×10^{2}	4.22×10^{2}	5.28×10^{2}	6.33×10^{2}	7.39×10^{2}	8.44×10^{2}	9.50×10^{2}	1.06×10^{3}
ø50	Push	-	2.95×10^{2}	3.93×10^{2}	5.89×10^{2}	7.85×10^{2}	9.82×10^{2}	1.18×10^{3}	1.37×10^{3}	1.57×10^{3}	1.77×10^{3}	1.96×10^{3}
	Pull	-	2.47×10^{2}	3.30×10^{2}	4.95×10^{2}	6.60×10^{2}	8.25×10^{2}	9.90×10^{2}	1.15×10^{3}	1.32×10^{3}	1.48×10^{3}	1.65×10^{3}
ø63	Push	3.12×10^{2}	4.68×10^{2}	6.23×10^{2}	9.35×10^{2}	1.25×10^{3}	1.56×10^{3}	1.87×10^{3}	2.18×10^{3}	2.49×10^{3}	2.81×10^{3}	3.12×10^{3}
	Pull	2.80×10^{2}	4.20×10^{2}	5.61×10^{2}	8.41×10^{2}	1.12×10^{3}	1.40×10^{3}	1.68×10^{3}	1.96×10^{3}	2.24×10^{3}	2.52×10^{3}	2.80×10^{3}
ø80	Push	5.03×10^{2}	7.54×10^{2}	1.01×10^{3}	1.51×10^{3}	2.01×10^{3}	2.51×10^{3}	3.02×10^{3}	3.52×10^{3}	4.02×10^{3}	4.52×10^{3}	5.03×10^{3}
	Pull	4.54×10^{2}	6.80×10^{2}	9.07×10^{2}	1.36×10^{3}	1.81×10^{3}	2.27×10^{3}	2.72×10^{3}	3.17×10^{3}	3.63×10^{3}	4.08×10^{3}	4.54×10^{3}
ø100	Push	7.85×10^{2}	1.18×10^{3}	1.57×10^{3}	2.36×10^{3}	3.14×10^{3}	3.93×10^{3}	4.71×10^{3}	5.50×10^{3}	6.28×10^{3}	7.07×10^{3}	7.85×10^{3}
	Pull	7.15×10^{2}	1.07×10^{3}	1.43×10^{3}	2.14×10^{3}	2.86×10^{3}	3.57×10^{3}	4.29×10^{3}	5.00×10^{3}	5.72×10^{3}	6.43×10^{3}	7.15×10^{3}

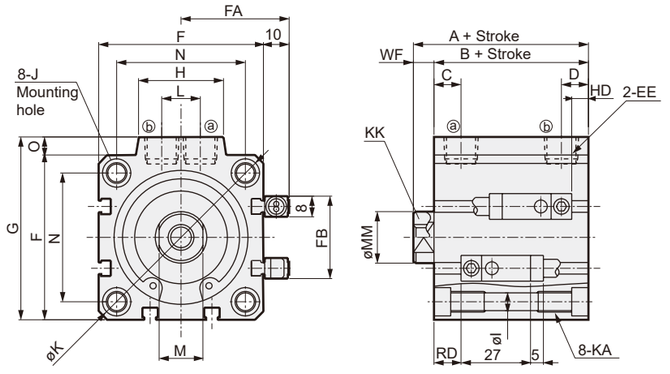
Mounting Bracket Model No. Display Method

Bore Size (mm) / Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD-LB-40	SSD-LB-50	SSD-LB-63	SSD-LB-80	SSD-LB-100
Foot (LB2)	SSD-LB2-40	SSD-LB2-50	SSD-LB2-63	SSD-LB2-80	SSD-LB2-100
Flange (FA/FB)	SSD-FA-40	SSD-FA-50	SSD-FA-63	SSD-FA-80	SSD-FA-100
Double Clevis (CB)	SSD-CB-40	SSD-CB-50	SSD-CB-63	SSD-CB-80	SSD-CB-100
Double knuckle clevis (CB2)	SSD-CB2-40	SSD-CB2-50	SSD-CB2-63	SSD-CB2-80	SSD-CB2-100

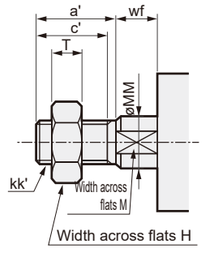
*1: Foot type mounting brackets are 2 pcs/set.
*2: When mounting with through-bolts, refer to the mounting bolt model number notation method (P. 682).

Outline Dimension Drawing

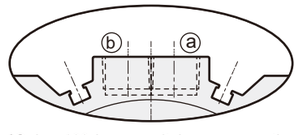
● SSD-KG1L4-40 to 100



● Rod end male thread part



[Bore size ø100]



*Only ø100 has a switch groove on the port surface

Code / Bore Size (mm)	A	B	C	D	EE	F	FA	FB	G	H	I	J
ø40	76.5	69.5	12	8.5	Rc1/8	52	36	31	57	24	5.5	Counterbore ø9 depth 5.5 ø5.5 through hole
ø50	78.5	70.5	10.5	10.5	Rc1/4	64	42	32	71	33	6.9	Counterbore ø11 depth 6.5 ø6.9 through hole
ø63	84	76	13	11	Rc1/4	77	48.5	32	84	33	8.7	Counterbore ø14 depth 9 ø8.7 through hole
ø80	93.5	83.5	16	13	Rc3/8	98	59	32	104	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole
ø100	105	93	23	15	Rc3/8	117	68.5	32	123.5	38	10.5	Counterbore ø17.5 depth 11 ø10.5 through hole

Code / Bore Size (mm)	K	KA	KK	L	M	MM	N	O	WF	RD	HD
ø40	69	M6 depth 11	M8 depth 13	10	14	16	40	5	7	30.5	10
ø50	86	M8 depth 13	M10 depth 15	15	17	20	50	7	8	30.5	11
ø63	103	M10 depth 25	M10 depth 15	15	17	20	60	7	8	28.5	18.5
ø80	132	M12 depth 28	M16 depth 21	15	22	25	77	6	10	31	23.5
ø100	156	M12 depth 28	M20 depth 27	15	27	30	94	6.5	12	35	29

*1: The A and B dimensions for intermediate strokes are the same as the standard stroke above them.

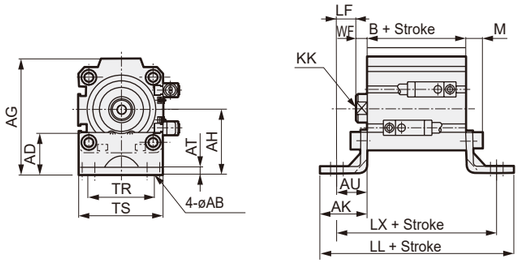
***2: For outline dimension drawings of individual accessories, see P. 379 to 381.**

● Rod end male thread part dimension table

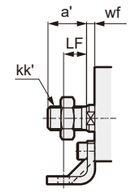
Code / Bore Size (mm)	a'	C'	H	kk'	M	MM	T	wf'
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

Outline Dimension Drawing

● Axial Foot Type (LB)

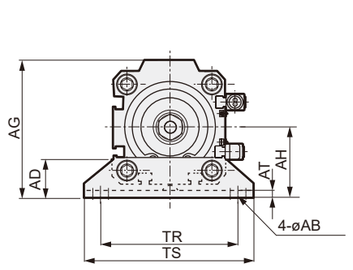


● For rod end male thread

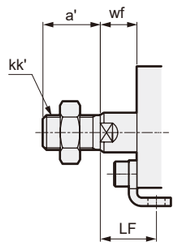


Code / Bore Size (mm)	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch B	With Switch LL	With Switch LX	For male thread a'	kk'	wf	LF
ø40	7	26	71	40	29	4.5	19	40	52	10	M8 depth 13	7	12	69.5	127.5	107.5	23.5	M14 × 1.5	5	14
ø50	9	23	79	40	34	4.5	22	46	64	13	M10 depth 15	8	14	70.5	138.5	114.5	28.5	M18 × 1.5	5	17
ø63	11	33	96.5	51	40	4.5	25	60	77	15	M10 depth 15	8	17	76	156	126	28.5	M18 × 1.5	5	20
ø80	13	42	116.5	61.5	50	6	35	77	98	18	M16 depth 21	10	25	83.5	183.5	153.5	35.5	M22 × 1.5	8	27
ø100	13	48	134	69	50	6	35	94	117	18	M20 depth 27	12	23	93	193	163	35.5	M26 × 1.5	8	27

● Axial Foot Type (Compact Type) (LB2)



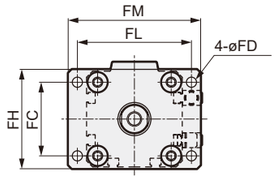
● For rod end male thread

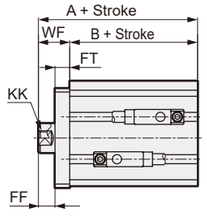


Code / Bore Size (mm)	AB	AD	AG	AH	AK	AT	AU	TR	TS	M	KK	WF	LF	With Switch A	With Switch B	With Switch LX	For male thread a'	kk'	wf	LF
ø40	7	18	64	33	18.2	3.2	11.2	64	78	9.2	M8 depth 13	17	25	95.7	69.5	53.5	23.5	M14 × 1.5	15	23
ø50	9	22	78	39	22.7	3.2	14.7	79	95	11.2	M10 depth 15	18	29.5	99.7	70.5	47.5	28.5	M18 × 1.5	15	26.5
ø63	11	26	91.5	46	25.2	3.2	16.2	95	113	13.2	M10 depth 15	18	31	107.2	76	50	28.5	M18 × 1.5	15	28
ø80	13	39.5	114	59	30.5	4.5	19.5	118	140	16.5	M16 depth 21	20	35	120	83.5	53.5	35.5	M22 × 1.5	18	33
ø100	13	50	136	71	35.5	6	23	137	162	18	M20 depth 27	22	39	133	93	59	35.5	M26 × 1.5	18	35

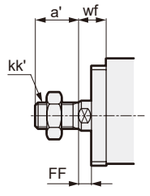
Outline Dimension Drawing

● Rod Side Flange Type (FA)



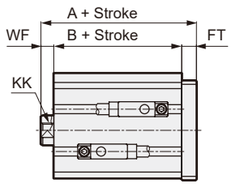


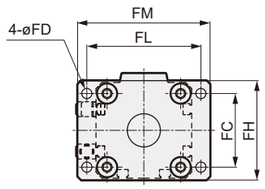
● For rod end male thread



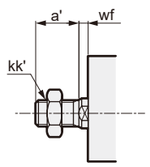
Code / Bore Size (mm)	Common dimension						For female thread					For male thread			
	FC	FD	FH	FL	FM	FT	FF	KK	WF	With Switch A	With Switch B	FF	a'	kk'	wf
ø40	40	5.5	54	62	72	8	9	M8 depth 13	17	86.5	69.5	7	23.5	M14 × 1.5	15
ø50	50	6.6	67	76	89	9	9	M10 depth 15	18	88.5	70.5	6	28.5	M18 × 1.5	15
ø63	60	9	80	92	108	9	9	M10 depth 15	18	94	76	6	28.5	M18 × 1.5	15
ø80	77	11	99	116	134	11	9	M16 depth 21	20	103.5	83.5	7	35.5	M22 × 1.5	18
ø100	94	11	117	136	154	11	11	M20 depth 27	22	115	93	7	35.5	M26 × 1.5	18

● Head Side Flange Type (FB)





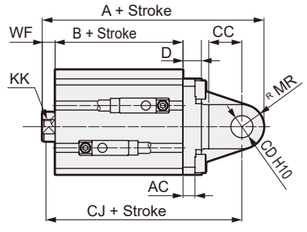
● For rod end male thread

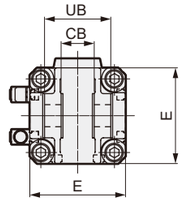


Code / Bore Size (mm)	Common dimension						For female thread					For male thread			
	FC	FD	FH	FL	FM	FT	KK	WF	With Switch A	With Switch B		a'	kk'	wf	With Switch CJ
ø40	40	5.5	54	62	72	8	M8 depth 13	7	84.5	69.5		23.5	M14 × 1.5	5	96.5
ø50	50	6.6	67	76	89	9	M10 depth 15	8	87.5	70.5		28.5	M18 × 1.5	5	103.5
ø63	60	9	80	92	108	9	M10 depth 15	8	93	76		28.5	M18 × 1.5	5	111
ø80	77	11	99	116	134	11	M16 depth 21	10	104.5	83.5		35.5	M22 × 1.5	8	129.5
ø100	94	11	117	136	154	11	M20 depth 27	12	116	93		35.5	M26 × 1.5	8	146

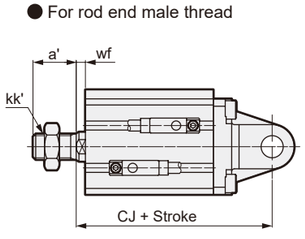
Outline Dimension Drawing

● Double Knuckle Clevis Type (CB)



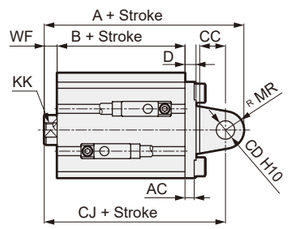


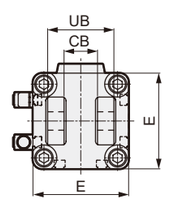
● For rod end male thread



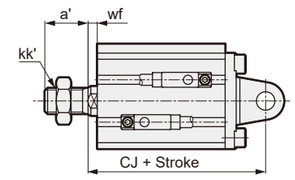
Code / Bore Size (mm)	Common dimension								For female thread					For male thread			
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	a'	kk'	wf	With Switch CJ
ø40	6.5	$18^{+0.4}_{+0.1}$	18	12	10	52	12	$36^{-0.1}_{-0.4}$	M8 depth 13	7	120.5	69.5	108.5	23.5	M14 × 1.5	5	106.5
ø50	6.5	$18^{+0.4}_{+0.1}$	18	12	10	64	12	$36^{-0.1}_{-0.4}$	M10 depth 15	8	122.5	70.5	110.5	28.5	M18 × 1.5	5	107.5
ø63	7.5	$20^{+0.4}_{+0.1}$	24	14	10	77	16	$40^{-0.1}_{-0.4}$	M10 depth 15	8	137	76	121	28.5	M18 × 1.5	5	118
ø80	10.5	$28^{+0.4}_{+0.1}$	30	20	14	98	20	$56^{-0.1}_{-0.4}$	M16 depth 21	10	165.5	83.5	145.5	35.5	M22 × 1.5	8	143.5
ø100	10.5	$28^{+0.4}_{+0.1}$	30	20	16	117	20	$56^{-0.1}_{-0.4}$	M20 depth 27	12	177	93	157	35.5	M26 × 1.5	8	153

● Double clevis type (Compact type) (CB2)





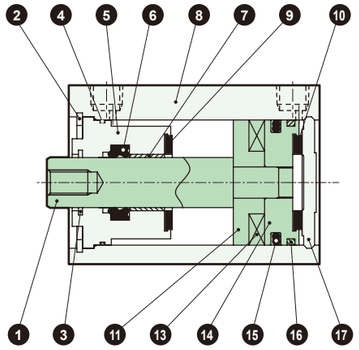
● For rod end male thread



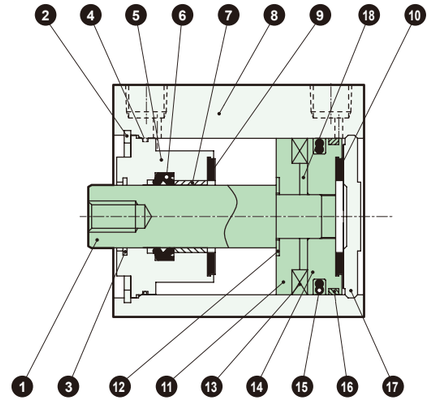
Code / Bore Size (mm)	Common dimension								For female thread					For male thread			
	AC	CB	CC	CD	D	E	MR	UB	KK	WF	With Switch A	With Switch B	With Switch CJ	a'	kk'	wf	With Switch CJ
ø40	5	$18^{+0.4}_{+0.1}$	14	10	6	52	10	$36^{-0.1}_{-0.3}$	M8 depth 13	7	108.5	69.5	98.5	23.5	M14 × 1.5	5	96.5
ø50	6	$22^{+0.4}_{+0.1}$	20	14	7	64	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	120.5	70.5	106.5	28.5	M18 × 1.5	5	103.5
ø63	7	$22^{+0.4}_{+0.1}$	20	14	8	77	14	$44^{-0.1}_{-0.3}$	M10 depth 15	8	128	76	114	28.5	M18 × 1.5	5	111
ø80	9	$28^{+0.4}_{+0.1}$	27	18	10	98	18	$56^{-0.1}_{-0.3}$	M16 depth 21	10	149.5	83.5	131.5	35.5	M22 × 1.5	8	129.5
ø100	12	$32^{+0.4}_{+0.1}$	31	22	13	117	22	$64^{-0.1}_{-0.3}$	M20 depth 27	12	172	93	150	35.5	M26 × 1.5	8	146

Internal Structure Diagram/Material

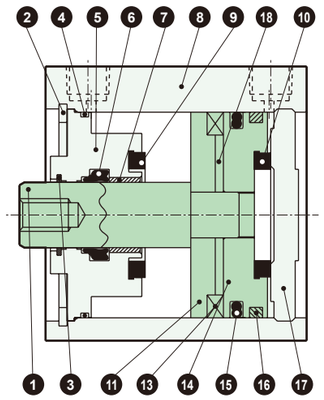
● SSD-KG1L4-40
(Double acting, High load type, With switch for strong magnetic field, With coil scraper)



● SSD-KG1L4-50
(Double acting, High load type, With switch for strong magnetic field, With coil scraper)



● SSD-KG1L4-63 to 100
(Double acting, High load type, With switch for strong magnetic field, With coil scraper)



Part No.	Part Name	Material	Remarks
1	Piston Rod	Steel	Industrial Hard Chrome Plating
2	C-type retaining ring for bore	Steel	Zinc phosphate
3	Coil scraper	Phosphor bronze	
4	Rod metal gasket	Nitrile Rubber	
5	Rod Metal	Aluminum Alloy	Chromate
6	Rod Packing	Nitrile Rubber	
7	Bushing	Bearing Alloy	
8	Cylinder Body	Aluminum Alloy	Hard Anodized
9	Cushion Rubber R	Urethane Rubber	
10	Cushion Rubber H	Urethane Rubber	

Part No.	Part Name	Material	Remarks
11	Spacer	ø40, ø63 to ø100: Aluminum alloy ø50: Resin	ø40, ø63 to ø100: Chromate
12	Spacer washer	Stainless Steel	
13	Magnet	Plastic	
14	Piston	Aluminum Alloy	Chromate
15	Piston Packing	Nitrile Rubber	
16	Wear Ring	Polyacetal	
17	Cover	Aluminum Alloy	Chromate
18	Collar	Aluminum Alloy	

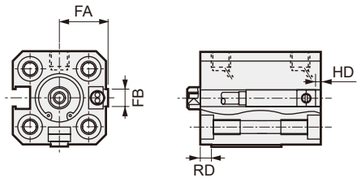
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .

MEMO

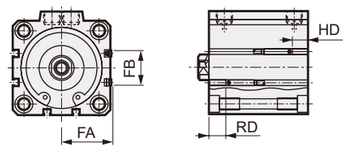
SSD-□L Outline Dimension Drawing with Switch

●SSD-L, SSD-XL, SSD-YL, SSD-OL, SSD-LF, SSD-ML
T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

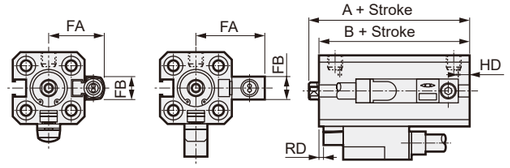
ø12, ø16



ø20 to ø160

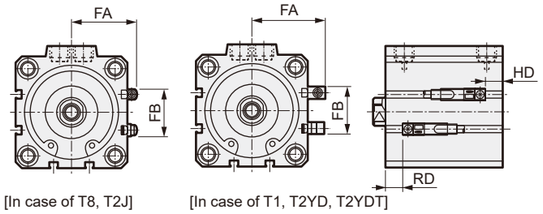


ø12, ø16



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

ø20 to ø160



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

Code	SSD-L, SSD-XL, SSD-YL, SSD-OL, SSD-LF				SSD-L (L1), SSD-XL (L1), SSD-YL (L1), SSD-OL (L1), SSD-(L1)F *5															
Tube I.D. (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *4	FB	RD *3	HD	FA *4	FB	RD *3	HD *3	FA *4	FB	RD	HD	FA *4	FB	RD	HD	FA *4	FB	RD	HD
ø12	13	4.5	2.5	0	13	4.5	4	7.5	-	-	-	-	18.8	8	1	4.5	23.8	8	1	4.5
ø16	15	4.5	2 (3.5)	0	15	4.5	3.5 (5)	7.5 (6)	-	-	-	-	20.8	8	2.5 (2)	4.5 (3)	25.8	8	2.5 (2)	4.5 (3)
ø20	18.5	12.5	6.5	3	18.5	12.5	8	4.5	-	-	-	-	24.3	16	5	1.5	29.3	16	5	1.5
ø25	20.5	13.5	9.5	3	20.5	13.5	11	4.5	-	-	-	-	26.3	17	8	1.5	31.3	17	8	1.5
ø32	23	0.5	9	3.5	23	0.5	10.5	5	-	-	-	-	28.8	24	7.5	2	33.8	24	7.5	2
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	6	1	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6.5	1.5	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	7	6.5	44.8	32	11.5	11	49.8	32	11.5	11
ø80	49.5	28.5	15.5	17.5	49.5	28.5	17	19	55.3	32	9.5	11.5	55.3	32	14	16	60.3	32	14	16
ø100	59	28.5	19.5	23	59	28.5	21	24.5	64.8	32	13.5	17	64.8	32	18	21.5	69.8	32	18	21.5
ø125	71.5	44.5	29.5	24.5	71.5	44.5	31	26	77.5	48	23.5	18.5	77.5	48	28	23	82.5	48	28	23
ø140	79.5	44.5	33	31	79.5	44.5	34.5	32.5	85.5	48	27	25	85.5	48	31.5	29.5	90.5	48	31.5	29.5
ø160	89.5	48.5	39	34	89.5	48.5	40.5	35.5	95.5	52	33	28	95.5	52	37.5	32.5	100.5	52	37.5	32.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: () dimensions are for with rubber cushion.
*4: FA dimension is for straight type lead wire.
*5: Only for ø12 and 16, the model number will be L1.

Code	SSD-L1, SSD-XL1, SSD-OL1		SSD-YL1	
Bore Size (mm)	A	B	A	B
ø12	30.5	27	40.5	37
ø16	30.5	27	40.5	27

Code	SSD-ML				SSD-ML (L1) *4															
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	7.5	0	13	4.5	9	7.5	-	-	-	-	18.8	8	6	4.5	23.8	8	6	4.5
ø16	15	4.5	7	0	15	4.5	8.5	7.5	-	-	-	-	20.8	8	5.5	4.5	25.8	8	5.5	4.5
ø20	18.5	12.5	11.5	3	18.5	12.5	13	4.5	-	-	-	-	24.3	16	10	1.5	29.3	16	10	1.5
ø25	20.5	13.5	14.5	3	20.5	13.5	16	4.5	-	-	-	-	26.3	17	13	1.5	31.3	17	13	1.5
ø32	23	0.5	19	3.5	23	0.5	20.5	5	-	-	-	-	28.8	24	17.5	2	33.8	24	17.5	2
ø40	26.5	27.5	17	7	26.5	27.5	18.5	8.5	32.3	31	11	1	32.3	31	15.5	5.5	37.3	31	15.5	5.5
ø50	32.5	28.5	17.5	7.5	32.5	28.5	19	9	38.3	32	11.5	1.5	38.3	32	16	6	43.3	32	16	6
ø63	39	28.5	17.5	12.5	39	28.5	19	14	44.8	32	11.5	6.5	44.8	32	16	11	49.8	32	16	11

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.
*4: Only for ø12 and 16, the model number will be L1.

Code	SSD-ML1	
Bore Size (mm)	A	B
ø12	35.5	32
ø16	35.5	32

SSD-QL Outline Dimension Drawing with Switch

●SSD-QL-R, SSD-QL-H
T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

Code	SSD-QL-R																			
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø16	15	4.5	33	6.5	15	4.5	34.5	8	-	-	-	-	20.8	8	31.5	5	25.8	8	31.5	5
ø20	18.5	12.5	34.5	10	18.5	12.5	36	11.5	24.3	16	28.5	4	24.3	16	33	8.5	29.3	16	33	8.5
ø25	20.5	13.5	38	9.5	20.5	13.5	39.5	11	26.3	17	32	3.5	26.3	17	36.5	8	31.3	17	36.5	8
ø32	23	0.5	40.5	13	23	0.5	42	14.5	28.8	24	34.5	7	28.8	24	39	11.5	33.8	24	39	11.5
ø40	26.5	27.5	53	14	26.5	27.5	54.5	15.5	32.3	31	47	8	32.3	31	51.5	12.5	37.3	31	51.5	12.5
ø50	32.5	28.5	71	15	32.5	28.5	72.5	16.5	38.3	32	65	9	38.3	32	69.5	13.5	43.3	32	69.5	13.5
ø63	39	28.5	69	22.5	39	28.5	70.5	24	44.8	32	63	16.5	44.8	32	67.5	21	49.8	32	67.5	21
ø80	49.5	28.5	96	24	49.5	28.5	97.5	25.5	55.3	32	90	18	55.3	32	94.5	22.5	60.3	32	94.5	22.5
ø100	59	28.5	91	29.5	59	28.5	92.5	31	64.8	32	85	23.5	64.8	32	89.5	28	69.8	32	89.5	28

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

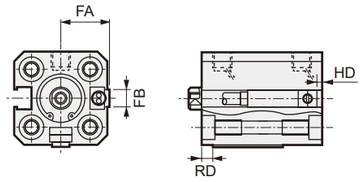
Code	SSD-QL-H																			
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
φ16	15	4.5	5	34.5	15	4.5	6.5	36	-	-	-	-	20.8	8	3.5	33	25.8	8	3.5	33
ø20	18.5	12.5	9.5	35	18.5	12.5	11	36.5	24.3	16	3.5	29	24.3	16	8	33.5	29.3	16	8	33.5
ø25	20.5	13.5	13	34.5	20.5	13.5	14.5	36	26.3	17	7	28.5	26.3	17	11.5	33	31.3	17	11.5	33
ø32	23	0.5	15.5	38	23	0.5	17	39.5	28.8	24	9.5	32	28.8	24	14	36.5	33.8	24	14	36.5
ø40	26.5	27.5	21.5	45.5	26.5	27.5	23	47	32.3	31	15.5	39.5	32.3	31	20	44	37.3	31	20	44
ø50	32.5	28.5	21	65	32.5	28.5	22.5	66.5	38.3	32	15	59	38.3	32	19.5	63.5	43.3	32	19.5	63.5
ø63	39	28.5	19	73	39	28.5	20.5	74.5	44.8	32	13	67	44.8	32	17.5	71.5	49.8	32	17.5	71.5
ø80	49.5	28.5	21.5	99	49.5	28.5	23	100.5	55.3	32	15.5	93	55.3	32	20	97.5	60.3	32	20	97.5
ø100	59	28.5	25.5	95	59	28.5	27	96.5	64.8	32	19.5	89	64.8	32	24	93.5	69.8	32	24	93.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

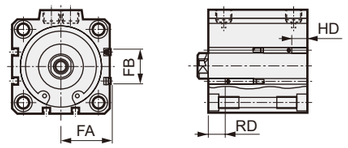
SSD-□L Outline Dimension Drawing with Switch

●SSD-G5L, SSD-KL, SSD-KL□C, SSD-KLF, SSD-KUL
T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V

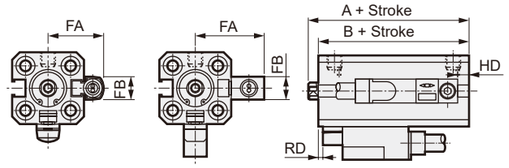
ø12, ø16



ø20 to ø160

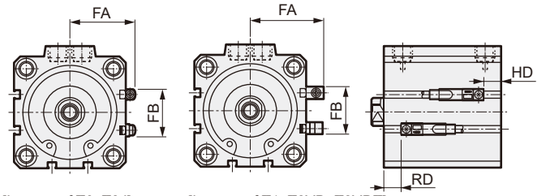


ø12, ø16



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

ø20 to ø160



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

Code	SSD-G5L																			
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø20	18.5	12.5	16.5	3	18.5	12.5	15	1.5	-	-	-	-	24.3	8	18	4.5	29.3	8	18	4.5
ø25	20.5	13.5	19.5	3	20.5	13.5	18	1.5	-	-	-	-	26.3	8	21	4.5	31.3	8	21	4.5
φ32	23	20.5	19	3.5	23	20.5	17.5	2	-	-	-	-	28.8	16	20.5	5	33.8	16	20.5	5
ø40	26.5	27.5	22	7	26.5	27.5	20.5	5.5	32.3	27.5	16	1	32.3	17	23.5	8.5	37.3	17	23.5	8.5
ø50	32.5	28.5	22.5	7.5	32.5	28.5	21	6	38.3	28.5	16.5	1.5	38.3	24	24	9	43.3	24	24	9
ø63	39	28.5	23	12.5	39	28.5	21.5	11	44.8	28.5	17	6.5	44.8	31	24.5	14	49.8	31	24.5	14
ø80	49.5	28.5	25.5	17.5	49.5	28.5	24	16	55.3	28.5	19.5	11.5	55.3	32	27	19	60.3	32	27	19
ø100	59	28.5	30.5	22	59	28.5	28	21.5	64.8	28.5	23.5	7	64.8	32	32	23.5	69.8	32	32	23.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

Code	SSD-KL, SSD-KL-□C, SSD-KLF, SSD-KUL																			
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4
ø12	13	4.5	4.5	2.5	13	4.5	4.5	2.5	-	-	-	-	18.8	8	4.5	1	23.8	8	4.5	1
ø16	15	4.5	4	3	15	4.5	4	3	-	-	-	-	20.8	8	4	1.5	25.8	8	4	1.5
ø20	18.5	12.5	8.5 (13.5)	6 (12.5)	18.5	12.5	8.5 (13.5)	6 (12.5)	24.3	16	2.5 (7.5)	0 (6.5)	24.3	16	8.5 (13.5)	4.5 (11)	29.3	16	8.5 (13.5)	4.5 (11)
ø25	20.5	13.5	12 (17)	5.5 (14)	20.5	13.5	12 (17)	5.5 (14)	26.3	17	6 (11)	0 (8)	26.3	17	12 (17)	4 (12.5)	31.3	17	12 (17)	4 (12.5)
ø32	23	20.5	14 (14)	8.5 (16)	23	20.5	14 (14)	8.5 (16)	28.8	24	8 (8)	3.5 (10)	28.8	24	12.5 (12.5)	7 (14.5)	33.8	24	12.5 (12.5)	7 (14.5)
ø40	26.5	27.5	19.5 (19.5)	9.5 (19)	26.5	27.5	19.5 (19.5)	9.5 (19)	32.3	31	13.5 (13.5)	3.5 (13)	32.3	31	18 (18)	8 (17.5)	37.3	31	18 (18)	8 (17.5)
ø50	32.5	28.5	20 (25)	10 (19)	32.5	28.5	20 (25)	10 (19)	38.3	32	14 (19)	4 (13)	38.3	32	18.5 (23.5)	8.5 (17.5)	43.3	32	18.5 (23.5)	8.5 (17.5)
ø63	39	28.5	18 (23)	17.5 (23)	39	28.5	18 (23)	17.5 (23)	44.8	32	12 (17)	11.5 (17)	44.8	32	16.5 (21.5)	16 (21.5)	49.8	32	16.5 (21.5)	16 (21.5)
ø80	49.5	28.5	20.5 (25.5)	22 (28)	49.5	28.5	20.5 (25.5)	22 (28)	55.3	32	14.5 (19.5)	16 (22)	55.3	32	19 (24)	20.5 (26.5)	60.3	32	19 (24)	20.5 (26.5)
ø100	59	28.5	24.5 (29.5)	28 (33.5)	59	28.5	24.5 (29.5)	28 (33.5)	64.8	32	18.5 (23.5)	22 (27.5)	64.8	32	23 (28)	26.5 (32)	69.8	32	23 (28)	26.5 (32)

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.
*4: Dimensions in ( ) are for strokes exceeding ø20:100, ø25 to ø50:150, ø63 to ø100:200.

SSD2-KG5L Outline Dimension Drawing with Switch

●SSD-KG5L

Code	SSD-KG5L											
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8			
	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4
ø20	18.5	12.5	18.5 (23.5)	6 (12.5)	18.5	12.5	18.5 (23.5)	4.5 (11)	24.3	12.5	12.5 (17.5)	0 (6.5)
ø25	20.5	13.5	22 (27)	5.5 (14)	20.5	13.5	22 (27)	4 (12.5)	26.3	13.5	16 (21)	0 (8)
ø32	23	20.5	24 (24)	8.5 (16)	23	20.5	22.5 (22.5)	7 (14.5)	28.8	20.5	18 (18)	2.5 (10)
ø40	26.5	27.5	29.5 (29.5)	9.5 (19)	26.5	27.5	28 (28)	8 (17.5)	32.3	27.5	23.5 (23.5)	3.5 (13)
ø50	32.5	28.5	30 (35)	10 (19)	32.5	28.5	28.5 (33.5)	8.5 (17.5)	38.3	28.5	24 (29)	4 (13)
ø63	39	28.5	28 (33)	17.5 (23)	39	28.5	26.5 (31.5)	16 (21.5)	44.8	28.5	22 (27)	11.5 (17)
ø80	49.5	28.5	30.5 (35.5)	22 (28)	49.5	28.5	29 (34)	20.5 (26.5)	55.3	28.5	24.5 (29.5)	16 (22)
ø100	59	28.5	34.5 (39.5)	28 (33.5)	59	28.5	33 (38)	26.5 (32)	64.8	28.5	28.5 (33.5)	22 (27.5)

Code	SSD-KG5L							
Bore Size (mm)	T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD *4	HD *4	FA *3	FB	RD *4	HD *4
ø20	24.3	16	20 (25)	7.5 (14)	29.3	16	20 (25)	7.5 (14)
ø25	26.3	17	23.5 (28.5)	7 (15.5)	31.3	17	23.5 (28.5)	7 (15.5)
ø32	28.8	24	25.5 (25.5)	10 (17.5)	33.8	24	25.5 (25.5)	10 (17.5)
ø40	32.3	31	31 (31)	11 (20.5)	37.3	31	31 (31)	11 (20.5)
ø50	38.3	32	31.5 (36.5)	11.5 (20.5)	43.3	32	31.5 (36.5)	11.5 (20.5)
ø63	44.8	32	29.5 (34.5)	18.5 (24.5)	49.8	32	29.5 (34.5)	18.5 (24.5)
ø80	55.3	32	32 (37)	23.5 (29.5)	60.3	32	32 (37)	23.5 (29.5)
ø100	64.8	32	36 (41)	29.5 (35)	69.8	32	36 (41)	29.5 (35)

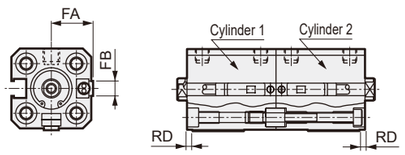
*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.
*4: Dimensions in ( ) are for strokes exceeding ø20:100, ø25 to ø50:150, ø63 to ø100:200.

SSD-BL Outline Dimension Drawing with Switch

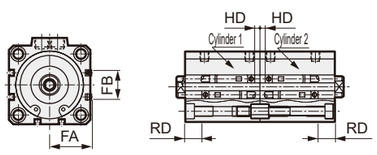
●SSD-BL

T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

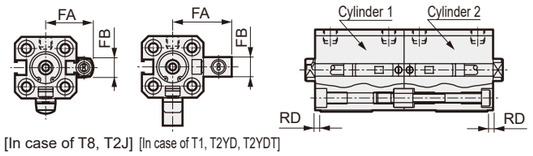
ø12 to ø16



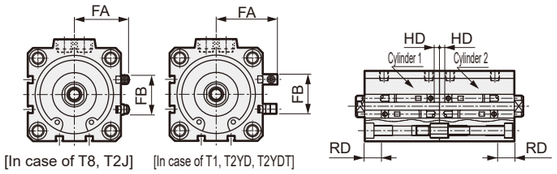
ø20 to ø100



ø12 to ø16



ø20 to ø100



Code	SSD-BL				SSD-BL (L1) *4															
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *4	FB	RD *3	HD	FA *4	FB	RD *3	HD *3	FA *4	FB	RD	HD	FA *4	FB	RD	HD	FA *4	FB	RD	HD
ø12	13	4.5	2.5	0	13	4.5	4	7.5	-	-	-	-	18.8	8	1	4.5	23.8	8	1	4.5
ø16	15	4.5	2 (3.5)	0	15	4.5	3.5 (5)	7.5 (6)	-	-	-	-	20.8	8	2.5 (2)	4.5 (3)	25.8	8	2.5 (2)	4.5 (3)
ø20	18.5	12.5	6.5	3	18.5	12.5	8	4.5	-	-	-	-	24.3	16	5	1.5	29.3	16	5	1.5
ø25	20.5	13.5	9.5	3	20.5	13.5	11	4.5	-	-	-	-	26.3	17	8	1.5	31.3	17	8	1.5
ø32	23	0.5	9	3.5	23	0.5	10.5	5	-	-	-	-	28.8	24	7.5	2	33.8	24	7.5	2
ø40	26.5	27.5	12	7	26.5	27.5	13.5	8.5	32.3	31	6	1	32.3	31	10.5	5.5	37.3	31	10.5	5.5
ø50	32.5	28.5	12.5	7.5	32.5	28.5	14	9	38.3	32	6.5	1.5	38.3	32	11	6	43.3	32	11	6
ø63	39	28.5	13	12.5	39	28.5	14.5	14	44.8	32	7	6.5	44.8	32	11.5	11	49.8	32	11.5	11
ø80	49.5	28.5	15.5	17.5	49.5	28.5	17	19	55.3	32	9.5	11.5	55.3	32	14	16	60.3	32	14	16
ø100	59	28.5	19.5	23	59	28.5	21	24.5	64.8	32	13.5	17	64.8	32	18	21.5	69.8	32	18	21.5

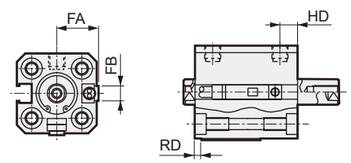
*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.
*4: Only for ø12 and 16, the model number will be L1.

SSD-DL Outline Dimension Drawing with Switch

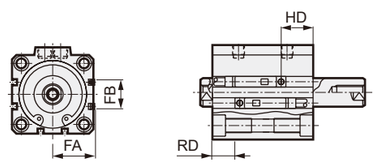
●SSD-DL

T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

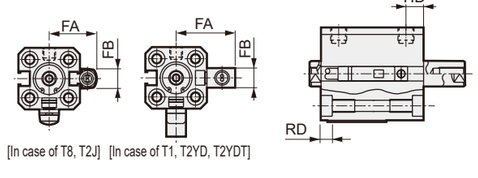
ø12 to ø16



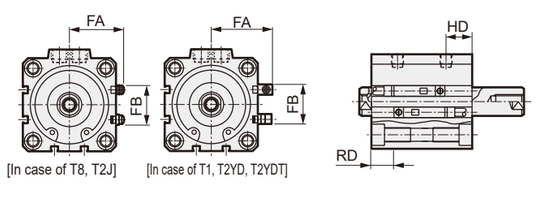
ø20 to ø160



ø12 to ø16



ø20 to ø160



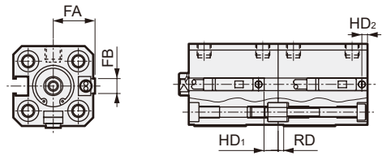
Code	SSD-DL																			
Bore Size (mm)	T0, T5, T2, T3, T3P, T2□R3				T2W, T3W, T2WL				T8				T2J				T1, T2YD, T2YDT			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø12	13	4.5	2.5	5	13	4.5	4	6.5	-	-	-	-	18.8	8	1	3.5	23.8	8	1	3.5
ø16	15	4.5	2	5	15	4.5	3.5	6.5	-	-	-	-	20.8	8	0.5	3.5	25.8	8	0.5	3.5
ø20	18.5	12.5	6.5	9.5	18.5	12.5	8	11	24.3	16	0.5	3.5	24.3	16	5	8	29.3	16	5	8
ø25	20.5	13.5	9.5	11.5	20.5	13.5	11	13	26.3	17	1.5	5.5	26.3	17	8	10	31.3	17	8	10
φ32	23	20.5	9	11	23	20.5	10.5	12.5	28.8	24	3	5	28.8	24	7.5	9.5	33.8	24	7.5	9.5
ø40	26.5	27.5	12	16.5	26.5	27.5	13.5	18	32.3	31	6	10.5	32.3	31	10.5	15	37.3	31	10.5	15
ø50	32.5	28.5	12.5	16.5	32.5	28.5	14	18	38.3	32	6.5	10.5	38.3	32	11	15	43.3	32	11	15
ø63	39	28.5	13	18	39	28.5	14.5	19.5	44.8	32	7	12	44.8	32	11.5	16.5	49.8	32	11.5	16.5
ø80	49.5	28.5	15.5	23	49.5	28.5	17	24.5	55.3	32	9.5	17	55.3	32	14	1.5	60.3	32	14	1.5
ø100	59	28.5	19.5	28.5	59	28.5	21	30	64.8	32	13.5	22.5	64.8	32	18	27	69.8	32	18	27
ø125	71.5	44.5	29.5	24.5	71.5	44.5	31	26	77.5	48	23.5	18.5	77.5	48	28	23	82.5	48	28	23
ø140	79.5	44.5	33	31	79.5	44.5	34.5	32.5	85.5	48	27	25	85.5	48	31.5	29.5	90.5	48	31.5	29.5
ø160	89.5	48.5	39	34	89.5	48.5	40.5	35.5	95.5	52	33	28	95.5	52	37.5	32.5	100.5	52	37.5	32.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

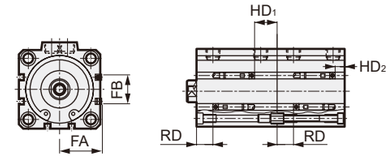
SSD-WL Outline Dimension Drawing with Switch

●SSD-WL
T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V, T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

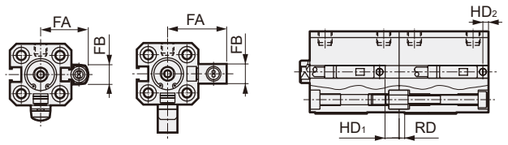
ø12 to ø16



ø20 to ø100

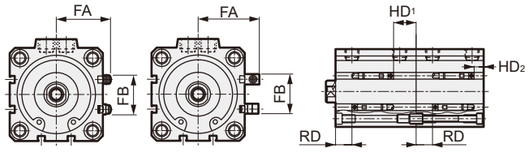


ø12 to ø16



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

ø20 to ø100



[In case of T8, T2J] [In case of T1, T2YD, T2YDT]

Code	SSD-WL				
Tube bore (mm)	T0, T5, T2, T3, T3P, T2□R3				
	FA *3	FB	RD	HD_1	HD_2
ø12	13	4.5	2.5	5	0
ø16	15	4.5	2	5	0
ø20	18.5	12.5	6.5	9.5	3
ø25	20.5	13.5	9.5	11.5	3
ø32	23	20.5	9	11	3.5
ø40	26.5	27.5	12	16.5	7
ø50	32.5	28.5	12.5	16.5	7.5
ø63	39	28.5	13	18	12.5
ø80	49.5	28.5	15.5	23	17.5
ø100	59	28.5	19.5	28.5	23

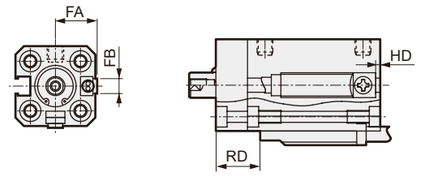
Code	SSD-WL(L1)																			
Bore Size (mm)	T2W, T3W, T2WL					T8					T2J					T1, T2YD, T2YDT				
	FA *3	FB	RD	HD_1	HD_2	FA *3	FB	RD	HD_1	HD_2	FA *3	FB	RD	HD_1	HD_2	FA *3	FB	RD	HD_1	HD_2
ø12	13	4.5	4	6.5	7.5	-	-	-	-	-	18.8	8	1	3.5	4.5	23.8	8	1	3.5	4.5
ø16	15	4.5	3.5	6.5	7.5	-	-	-	-	-	20.8	8	0.5	3.5	4.5	25.8	8	0.5	3.5	4.5
ø20	18.5	12.5	8	11	4.5	-	-	-	-	-	24.3	16	5	8	1.5	29.3	16	5	8	1.5
ø25	20.5	13.5	11	13	4.5	-	-	-	-	-	26.3	17	8	10	1.5	31.3	17	8	10	1.5
ø32	23	20.5	10.5	12.5	5	-	-	-	-	-	28.8	24	7.5	9.5	2	33.8	24	7.5	9.5	2
ø40	26.5	27.5	13.5	18	8.5	32.3	31	6	10.5	1	32.3	31	10.5	15	5.5	37.3	31	10.5	15	5.5
ø50	32.5	28.5	14	18	9	38.3	32	6.5	10.5	1.5	38.3	32	11	15	6	43.3	32	11	15	6
ø63	39	28.5	14.5	19.5	14	44.8	32	7	12	6.5	44.8	32	11.5	16.5	11	49.8	32	11.5	16.5	11
ø80	49.5	28.5	17	24.5	19	55.3	32	9.5	17	11.5	55.3	32	14	21.5	16	60.3	32	14	21.5	16
ø100	59	28.5	21	30	24.5	64.8	32	13.5	22.5	17	64.8	32	18	27	21.5	69.8	32	18	27	21.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

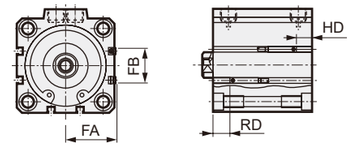
SSD-□L Outline Dimension Drawing with Switch

●SSD-G2L,G3L,KG2L,KG3L
T2WLH/V, T2YH/V

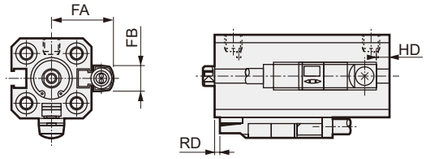
ø16



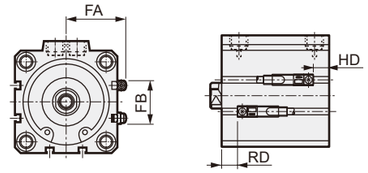
ø20 to ø100



ø16



ø20 to ø100

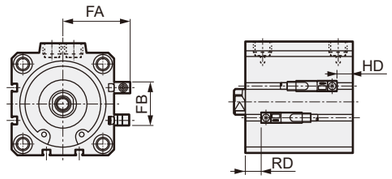


Code	SSD-G2L, G3L								SSD-KG2L, KG3L							
Bore Size (mm)	T2WL				T2YLH				T2WL				T2YLH			
	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD	FA *3	FB	RD	HD
ø16	15	8	9.5	1.5	20.8	8	12.5	4.5	15	8	11.5	0	20.8	8	14.5	2.5
ø20	18.5	16	15	0	24.3	16	18	1.5	18.5	16	17	1.5	24.3	16	20	4.5
ø25	20.5	17	17	0	26.3	17	20	2	20.5	17	19.5	1.5	26.3	17	22.5	4.5
ø32	23	24	17.5	1.5	28.8	24	20.5	4.5	23	24	22.5	6.5	28.8	24	25.5	9.5
ø40	26.5	31	20.5	5	32.3	31	23.5	8	26.5	31	28	7.5	32.3	31	31	10.5
ø50	32.5	32	20.5	6	38.3	32	23.5	9	32.5	32	28	8.5	38.3	32	31	11.5
ø63	39	32	21	10	44.8	32	24	13	39	32	26	15	44.8	32	29	18
ø80	49.5	32	23.5	16	55.3	32	26.5	19	49.5	32	28.5	21	55.3	32	31.5	24
ø100	59	32	27.5	21.5	64.8	32	30.5	24.5	59	32	32.5	26.5	64.8	32	35.5	29.5

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: FA dimension is for straight type lead wire.

●SSD-G1L, G4L, DG1L, DG4L, KG1L, KG4L
T2YD, T2YDT

ø25 to ø100



Code	SSD-G1L, G4L				SSD-DG1L, DG4L				SSD-KG1L, KG4L			
Bore Size (mm)	T2YD, T2YDT											
	FA	FB	RD	HD	FA	FB	RD	HD	FA	FB	RD *3	HD *3
ø25	31.3	17	20	2	31.3	17	20	21.5	31.3	17	22.5 (27.5)	4.5 (13)
ø32	33.8	24	17.5	2	33.8	20.5	20.5	22	33.8	24	25.5 (25.5)	9.5 (17)
ø40	37.3	31	20.5	5.5	37.3	27.5	23.5	27.5	37.3	31	31 (31)	10.5 (20)
ø50	43.3	32	21	6	43.3	28.5	23.5	27.5	43.3	32	31 (36)	11.5 (20.5)
ø63	49.8	32	21.5	11	49.8	28.5	24	28.5	49.8	32	29 (34)	18 (23.5)
ø80	60.3	32	24	16	60.3	28.5	26.5	35	60.3	32	31.5 (36.5)	24 (29.5)
ø100	69.8	32	28	21.5	69.8	28.5	30.5	40.5	69.8	32	35.5 (40.5)	29.5 (35)

*1: For switch mountability, refer to the model number notation method for each variation.
*2: RD/HD dimensions for 5 strokes differ from these dimensions due to individual settings.
*3: Dimensions in ( ) are for strokes exceeding ø25 to ø50:150, ø63 to ø100:200.

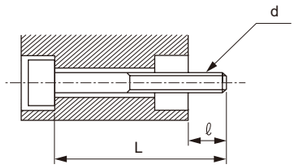
Mounting Bolt Model Number Notation Method

Bolts come in a set of 4.

SSD - BOLT - M5×30

1 Mounting Bolt d×L

How to Read the List



Material: Steel
Treatment: Black Oxide

d: Mounting bolt screw diameter
L: Mounting bolt length
ℓ: Mating side screw-in possible length
(Note) Mounting bolts are indicated by d × L.

For SSD-□

Model No.	ℓ	d×L
SSD-12- 5	6.5	M3×25
10		×30
15		×35
20		×40
25		×45
30		×50
SSD-16- 5		M3×25
10		×30
15		×35
20		×40
25		×45
30		×50
SSD-20- 5	6	M5×25
10		×30
15		×35
20		×40
25		×45
30		×50
SSD-25- 5	8	M5×30
10		×35
15		×40
20		×45
25		×50
30		×55
40		×65
50		×75
SSD-32- 5	7.5	M5×30
10		×35
15		×40
20		×45
25		×50
30		×55
40		×65
50		×75

Model No.	ℓ	d×L
SSD-40- 5	6	M5×35
10		×40
15		×45
20		×50
25		×55
30		×60
40		×70
50		×80
SSD-50- 5	11	M6×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-63- 5	13	M8×45
10		×50
20		×60
30		×70
40		×80
50		×90
SSD-80- 5	17.5	M10×55
10		×60
20		×70
30		×80
40		×90
50		×100

Model No.	ℓ	d×L
SSD-100- 5	18	M10×65
10		×70
20		×80
30		×90
40		×100
50		×110
SSD-125- 10	21	M12×90
20		×100
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180
SSD-140- 10	21	M12×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190
SSD-160- 10	24.2	M14×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190

For SSD-L-□

Model No.	ℓ	d×L
SSD-L-12- 5	6.5	M3×35
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-L-16- 5		M3×35
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-L-20- 5	6	M5×35
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-L-25- 5	8	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-L-32- 5	7.5	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85

Model No.	ℓ	d×L
SSD-L-40- 5	6	M5×45
10		×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
SSD-L-50- 5	11	M6×50
10		×55
15		×60
20		×65
25		×70
30		×75
40		×85
50		×95
SSD-L-63- 5	13	M8×55
10		×60
20		×70
30		×80
40		×90
50		×100
SSD-L-80- 5	17.5	M10×65
10		×70
20		×80
30		×90
40		×100
50		×110

Model No.	ℓ	d×L
SSD-L-100- 5	18	M10×75
10		×80
20		×90
30		×100
40		×110
50		×120
SSD-L-125- 10	21	M12×90
20		×100
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180
SSD-L-140- 10	21	M12×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190
SSD-L-160- 10	24.2	M14×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190

For SSD-X-Y-□

Model No.	ℓ	d×L
SSD-X-Y-12- 5	6.5	M3×25
10		×30
-16- 5		M3×25
10		×30
-20- 5	6	M5×25
10		×30

Model No.	ℓ	d×L
SSD-X-Y-25- 5	8	M5×30
10		×35
-32- 5	7.5	M5×30
10		×35
-40-10	6	M5×40
20		×50

Model No.	ℓ	d×L
SSD-X-Y-50-10	11	M6×45
20		×55

For SSD-XL-YL-□

Model No.	ℓ	d×L
SSD-XL-YL-12- 5	6.5	M3×35
10		×35
-16- 5		M3×35
10		×35
-20- 5	6	M5×35
10		×40

Model No.	ℓ	d×L
SSD-XL-YL-25- 5	8	M5×40
10		×45
-32- 5	7.5	M5×40
10		×45
-40-10	6	M5×50
20		×60

Model No.	ℓ	d×L
SSD-XL-YL-50-10	11	M6×55
20		×65

For SSD-D-□

Model No.	ℓ	d×L
SSD-D-12- 5	6.5	M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-D-16- 5		M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-D-20- 5	9.5	M5×35
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-D-25- 5		M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-D-32- 5	10	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85

Model No.	ℓ	d×L
SSD-D-40- 5	6.5	M5×45
10		×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
SSD-D-50- 5	7.5	M6×45
10		×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
SSD-D-63- 5	13	M8×50
10		×55
20		×65
30		×75
40		×85
50		×95
SSD-D-80- 5	12.5	M10×55
10		×60
20		×70
30		×80
40		×90
50		×100
SSD-D-100- 5	13	M10×65
10		×70
20		×80
30		×90
40		×100
50		×110

Model No.	ℓ	d×L
SSD-D-125- 10	21	M12×90
20		×100
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180
SSD-D-140- 10	21	M12×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190
SSD-D-160- 10	24.2	M14×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190

For SSD-DL-□

Model No.	ℓ	d×L
SSD-DL-12- 5	6.5	M3×35
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-DL-16- 5		M3×35
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-DL-20- 5	9.5	M5×45
10		×50
15		×55
20		×60
25		×65
30		×70
SSD-DL-25- 5		M5×50
10		×55
15		×60
20		×65
25		×70
30		×75
40		×85
50	14.5	×100
SSD-DL-32- 5	10	M5×50
10		×55
15		×60
20		×65
25		×70
30		×75
40		×85
50	15	×100

Model No.	ℓ	d×L
SSD-DL-40- 5	6.5	M5×55
10		×60
15		×65
20		×70
25		×75
30		×80
40		×90
50		×100
SSD-DL-50- 5	7.5	M6×55
10		×60
15		×65
20		×70
25		×75
30		×80
40		×90
50		×100
SSD-DL-63- 5	13	M8×60
10		×65
20		×75
30		×85
40		×95
50	18	×110
SSD-DL-80- 5	12.5	M10×65
10		×70
20		×80
30		×90
40		×100
50		×110
SSD-DL-100- 5	13	M10×75
10		×80
20		×90
30		×100
40		×110
50		×120

Model No.	ℓ	d×L
SSD-DL-125- 10	21	M12×90
20		×100
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180
SSD-DL-140- 10	21	M12×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190
SSD-DL-160- 10	24.2	M14×100
20		×110
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190

For SSD-K-□

Model No.	ℓ	d×L
SSD-K-12- 5	6.5	M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
40		×65
50		×75
SSD-K-16- 5	6.5	M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
40		×65
50		×75
SSD-K-20- 5	6	M5×30
10		×35
15		×40
20		×45
25		×50
30		×55
40		×65
50		×75
SSD-K-25- 10	8	M5×40
15		×45
20		×50
25		×55
30		×60
40		×70
50		×80
60		×90
70		×100
80		×110
90		×120
100		×130

Model No.	ℓ	d×L
SSD-K-32- 10	12.5	M5×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
60		×100
70		×110
80		×120
90		×130
100		×140
SSD-K-40- 10	6	M5×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
60		×100
70		×110
80		×120
90		×130
100		×140
SSD-K-50- 10	11	M6×55
15		×60
20		×65
25		×70
30		×75
40		×85
50	16	×95
60		×110
70		×120
80		×130
90		×140
100		×150

Model No.	ℓ	d×L
SSD-K-63- 10	13	M8×60
20		×70
30		×80
40		×90
50		×100
60		×110
70		×120
80		×130
90		×140
100		×150
SSD-K-80- 10	17.5	M10×70
20		×80
30		×90
40		×100
50		×110
60		×120
70		×130
80		×140
90		×150
100		×160
SSD-K-100- 10	18	M10×80
20		×90
30		×100
40		×110
50		×120
60		×130
70		×140
80		×150
90		×160
100		×170

For SSD-KL-□

Model No.	ℓ	d×L
SSD-KL-12- 5	6.5	M3×35
10		×40
15		×45
20		×50
25		×55
30		×60
40		×70
50		×80
SSD-KL-16- 5	6.5	M3×35
10		×40
15		×45
20		×50
25		×55
30		×60
40		×70
50		×80
SSD-KL-20- 5	6	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-KL-25- 10	8	M5×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90
60		×100
70		×110
80		×120
90		×130
100		×140

Model No.	ℓ	d×L
SSD-KL-32- 10	12.5	M5×60
15		×65
20		×70
25		×75
30		×80
40		×90
50		×100
60		×110
70		×120
80		×130
90		×140
100		×150
SSD-KL-40- 10	6	M5×60
15		×65
20		×70
25		×75
30		×80
40		×90
50		×100
60		×110
70		×120
80		×130
90		×140
100		×150
SSD-KL-50- 10	11	M6×65
15		×70
20		×75
25		×80
30		×85
40		×95
50	16	×110
60		×120
70		×130
80		×140
90		×150
100		×160

Model No.	ℓ	d×L
SSD-KL-63- 10	13	M8×70
20		×80
30		×90
40		×100
50		×110
60		×120
70		×130
80		×140
90		×150
100		×160
SSD-KL-80- 10	17.5	M10×80
20		×90
30		×100
40		×110
50		×120
60		×130
70		×140
80		×150
90		×160
100		×170
SSD-KL-100- 10	18	M10×90
20		×100
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180

For SSD-M-□

Model No.	ℓ	d×L
SSD-M-12- 5	6.5	M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-M-16- 5	6.5	M3 × 30
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-M-20- 5	6	M5×30
10		×35
15		×40
20		×45
25		×50
30		×55
SSD-M-25- 5	8	M5×35
10		×40
15		×45
20		×50
25		×55
30		×60
40		×70
50		×80

Model No.	ℓ	d×L
SSD-M-32- 5	7.5	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-M-40- 5	6	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
40		×75
50		×85
SSD-M-50- 5	11	M6×45
10		×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90

Model No.	ℓ	d×L
SSD-M-63- 5	13	M8×50
10		×55
20		×65
30		×75
40		×85
50		×95

For SSD-ML-□

Model No.	ℓ	d×L
SSD-ML-12- 5	6.5	M3×40
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-ML-16- 5	6.5	M3×40
10		×40
15		×45
20		×50
25		×55
30		×60
SSD-ML-20- 5	6	M5×40
10		×45
15		×50
20		×55
25		×60
30		×65
SSD-ML-25- 5	8	M5×45
10		×50
15		×55
20		×60
25		×65
30		×70
40		×80
50		×90

Model No.	ℓ	d×L
SSD-ML-32- 5	7.5	M5×50
10		×55
15		×60
20		×65
25		×70
30		×75
40		×85
50	12.5	×100
SSD-ML-40- 5	6	M5×50
10		×55
15		×60
20		×65
25		×70
30		×75
40		×85
50	11	×100
SSD-ML-50- 5	11	M6×55
10		×60
15		×65
20		×70
25		×75
30		×80
40		×90
50		×100

Model No.	ℓ	d×L
SSD-ML-63- 5	13	M8×60
10		×65
20		×75
30		×85
40		×95
50	18	×110

For SSD-Q□H/R

Model No.	ℓ	d×L
SSD-Q-16- 5	5.5	M3×60
10		×65
15		×70
20		×75
25		×80
30	10.5	×90
40		×100
50	Bolts are unavailable, so please install by screwing into the main body.	
SSD-Q-20- 5	12.5	M5×65
10		×70
15		×75
20		×80
25		×85
30		×90
40		×100
50		×110

Model No.	ℓ	d×L
SSD-Q-25- 10	9.5	M5×70
15		×75
20		×80
25		×85
30		×90
40		×100
50		×110
60		×120
70		×130
80		×140
90		×150
100		×160
SSD-Q-32- 10	13.5	M5×80
15		×85
20		×90
25		×95
30		×100
40		×110
50		×120
60		×130
70		×140
80		×150
90		×160
100		×170

Model No.	ℓ	d×L
SSD-Q-40- 10	10	M5×90
15		×95
20		×100
25		×105
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180
SSD-Q-50- 10	12	M6×110
15		×115
20		×120
25		×125
30		×130
40		×140
50		×150
60		×160
70		×170
80		×180
90		×190
100		×200

Model No.	ℓ	d×L
SSD-Q-63- 10	19	M8×120
20		×130
30		×140
40		×150
50		×160
60		×170
70		×180
80		×190
90		×200
100		×210
SSD-Q-80- 10	12	M10×140
20		×150
30		×160
40		×170
50		×180
60		×190
70		×200
80		×210
90		×220
100		×230
SSD-Q-100- 10	12	M10×140
20		×150
30		×160
40		×170
50		×180
60		×190
70		×200
80		×210
90		×220
100		×230

For SSD-QL□H/R

Model No.	ℓ	d×L
SSD-QL-16- 5	5.5	M3×65
10		×70
15		×75
20		×80
25	10.5	×90
30	5.5	×90
40		×100
50	Bolts are unavailable, so please install by screwing into the main body.	
SSD-QL-20- 5	12.5	M5×75
10		×80
15		×85
20		×90
25		×95
30		×100
40		×110
50		×120

Model No.	ℓ	d×L
SSD-QL-25- 10	9.5	M5×80
15		×85
20		×90
25		×95
30		×100
40		×110
50		×120
60		×130
70		×140
80		×150
90		×160
100		×170
SSD-QL-32- 10	13.5	M5×90
15		×95
20		×100
25		×105
30		×110
40		×120
50		×130
60		×140
70		×150
80		×160
90		×170
100		×180

Model No.	ℓ	d×L
SSD-QL-40- 10	10	M5×100
15		×105
20		×110
25		×115
30		×120
40		×130
50		×140
60		×150
70		×160
80		×170
90		×180
100		×190
SSD-QL-50- 10	12	M6×120
15		×125
20		×130
25		×135
30		×140
40		×150
50		×160
60		×170
70		×180
80		×190
90		×200
100		×210

Model No.	ℓ	d×L
SSD-QL-63- 10	19	M8×130
20		×140
30		×150
40		×160
50		×170
60		×180
70		×190
80		×200
90		×210
100		×220
SSD-QL-80- 10	12	M10×150
20		×160
30		×170
40		×180
50		×190
60		×200
70		×210
80		×220
90		×230
100		×240
SSD-QL-100- 10	12	M10×150
20		×160
30		×170
40		×180
50		×190
60		×200
70		×210
80		×220
90		×230
100		×240

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

Knuckle pin/Clevis pin cotter pin (-XP5)

Content: The retaining rings for knuckle pins and clevis pins will be split pins.

Model No. Notation Method

SSD-40-100-N-Y-XP5

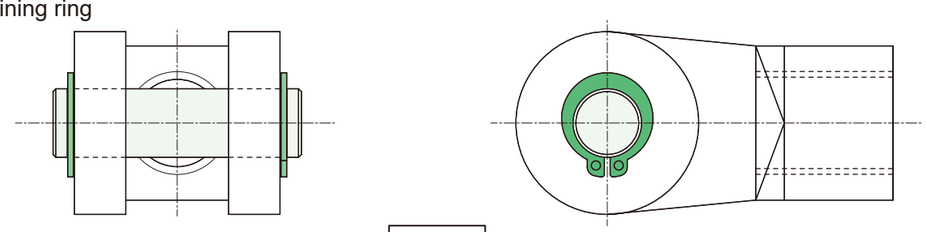
Model No.

Refer to the SSD Series Model Number Notation Method.

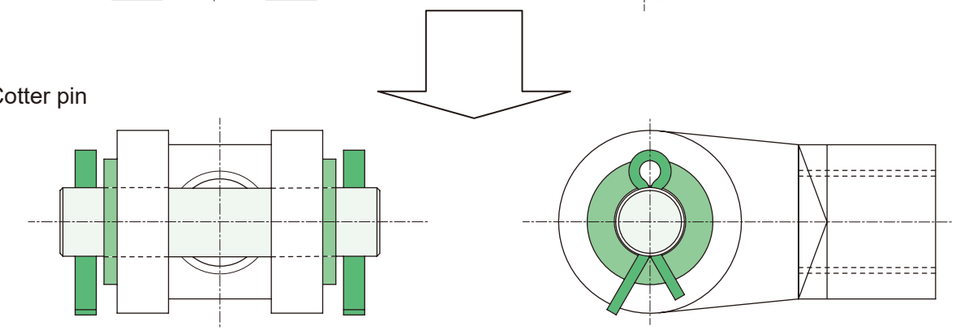
*Since the piston rod end shape is standard female thread, be sure to enter the "N" code.

Outer Dimensions Diagram

● Retaining ring



● Cotter pin



Pin Diameter	Split Pin Size
12	ø4 × 20
14	ø4 × 20
20	ø4 × 25
25	ø4 × 30
28	ø5 × 35
32	ø5 × 40
40	ø5 × 50
50	ø5 × 60

Knuckle fixed by pin driving (-XP7)

Content: Also, drive a spring pin into the knuckle to prevent loosening.

Model No. Notation Method

SSD-40-100-N-Y-XP7

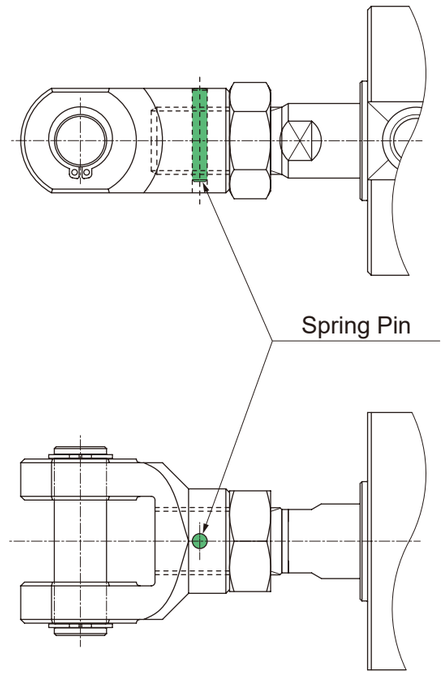
Model No.

Refer to the SSD Series Model Number Notation Method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" code.

Outer Dimensions Diagram

Same as with Knuckle specification.
(Spring pin driving direction varies depending on the model.)



Knuckle pin/Clevis pin cotter pin specification, Knuckle fixed by pin driving (-XP8)

Content: The retaining rings for knuckle pins and clevis pins will be split pins. Also, drive a spring pin into the knuckle to prevent loosening. (XP5 + XP7)

Model No. Notation Method

SSD - 40 - 100 - N - Y - XP8

Model No.

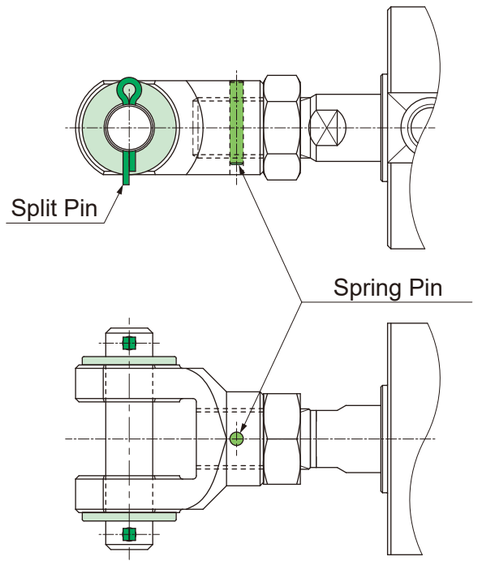
Refer to the SSD Series Model Number Notation Method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" code.

Outer Dimensions Diagram

Mounting dimensions are the same as with Knuckle specification.

This is a combination of XP5 (P. 690) and XP7 (P. 691).



Fluororubber packing type (-T2)

Content: Change the rod packing, piston packing and O-rings to FKM.

Model No. Notation Method

SSD - T2 - 40 - 100

Model No.

SSD - K T2 L - 40 - 100

Model No.

Refer to the SSD Series Model Number Notation Method.

Outer Dimensions Diagram

Same as standard type.

With 2 rod nuts (-A2)

Content: Shipped with 2 rod nuts, same as standard.

Model No. Notation Method

SSD - 50 - 50 - NA2

Model No.

Refer to the SSD Series Model Number Notation Method.

*Since the piston rod end shape is standard female thread, be sure to enter the "N" code.

Outer Dimensions Diagram

Same as standard type except that 2 rod nuts are included.

With spigot joint (-R1, R2)

Content: Provide a spigot at the cylinder shaft center.

Model No. Notation Method

*Indicated without a hyphen immediately after the option code.

SSD-L - 32 - 50 - N R1

Model No. ❶With spigot joint

Refer to the SSD Series Model Number Notation Method.

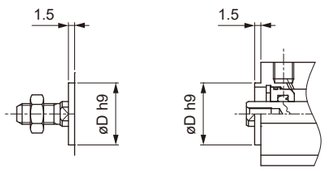
❶With spigot joint

Code	Content
R1	Rod side with spigot joint
R2	Head side with spigot joint

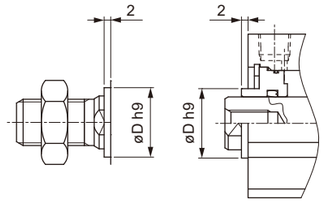
Outer Dimensions Diagram

●Rod side with spigot joint (R1)

• ø12, ø16



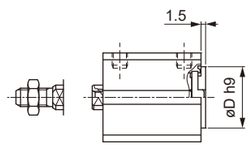
• Fø20 to ø100



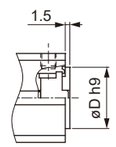
Bore	øD
ø12	15
ø16	20
ø20	13
ø25	15
ø32	21
ø40	28
ø50	35
ø63	35
ø80	43
ø100	59

●Head side with spigot joint (R2)

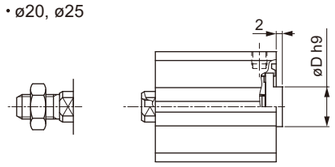
• ø12, ø16



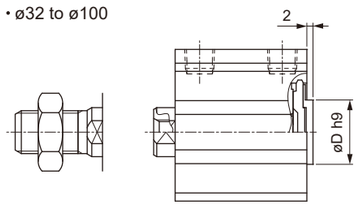
• SSD-L-12/16-5
For SSD-L1-12/16



• ø20, ø25



• ø32 to ø100



Bore	øD
ø12	15
ø16	20
ø20	13
ø25	15
ø32	21
ø40	28
ø50	35
ø63	35
ø80	43
ø100	59

MEMO

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

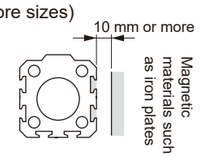
Individual Precautions: Compact Cylinder SSD Series

During Design/Selection

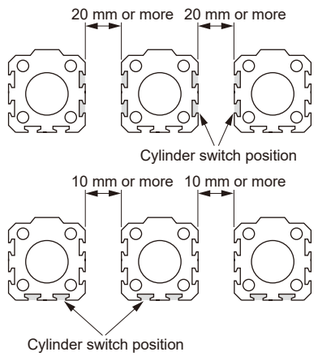
1. Common

Caution

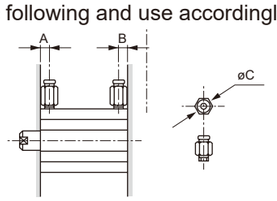
■ If there is a magnetic material such as an iron plate near the cylinder switch, it may cause malfunction. Maintain a distance of 10 mm or more from the cylinder surface.
(Common to all bore sizes)



■ If cylinders are adjacent, it may cause cylinder switch malfunction. Maintain the following distance from the cylinder surface. (Common to all bore sizes)



■ There are restrictions on usable piping fittings. Refer to the following and use accordingly.



Item / Bore size (mm)	Port Size	Port position dimension A	Port position dimension B	Usable Fittings	Fitting outer diameter øC	Unusable Fittings
ø12	M5	5.5	5.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5	ø11 or less	GWS6-M5
ø16						
ø20		8	5.5			
ø25		11	6			
ø32	Rc1/8	8	8	SC3W-6-4, 6, 8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less	GWS10-6 GWL8-6 GWL10-6
ø40		12	8.5			
ø50	Rc1/4	10.5	10.5	SC3W-8-6, 8, 10 GWS4-8 GWS6-8 GWS10-8 GWL4 to 12-8	ø21 or less	GWS12-8
ø63		13	11			
ø80	Rc3/8	16	13	SC3W-10-6, 8, 10 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø21 or less	-
ø100		23	15			

■ Install a speed controller on the cylinder.
● Install a speed controller on the cylinder. Use within the operating piston speed range of each cylinder.

2. High load type SSD-K, SSD-K□C, SSD-KF SSD-KU, SSD-KG1/KG2/KG3/KG4/KG5

■ Super compact cylinder high load type has a built-in rubber cushion. The table on P. 697 shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds this value, consider a separate shock absorber.

Bore size (mm)	Allowable Absorption Energy (J)	
		SSD-KU
ø12	0.04	–
ø16	0.09	–
ø20	0.16	
ø25	0.16	
ø32	0.40	
ø40	0.63	
ø50	0.98	
ø63	1.56	
ø80	2.51	
ø100	3.92	

$$\text{Kinetic energy (J)} = \frac{1}{2} \times \text{Weight (kg)} \times [\text{Speed (m/s)}]^2$$

(Note) Regarding the calculation method of kinetic energy

The average speed of the cylinder is calculated by $Va = \frac{L}{T}$.

Va: Average speed (m/s)
L: Cylinder stroke (m)
T: Operating Time (s)

On the other hand, the cylinder speed just before the stroke end is calculated by the following simple formula.

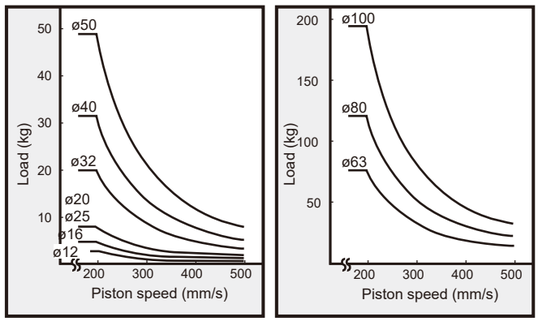
$$Vm = \frac{L}{T} \times (1 + 1.5 \times) \frac{\omega}{100}$$

Vm: Speed immediately prior to stroke end (m/s)
ω: Cylinder load factor (%)

For calculating kinetic energy, use this Vm value as the speed.

The following is a graph showing the relationship between piston speed and load for the allowable energy value of the Compact Cylinder High Load Type.

High Load Type Allowable Energy Value Graph



● Note: The range to the lower left of the curve is usable The upper right range requires an external cushion.

3. Single acting type SSD-X, SSD-Y

Caution

■ Do not leave single-acting cylinders pressurized.
If left pressurized, the piston rod may not return by spring load when the pressure is released. If it is necessary to use the product while pressurized, use a double-acting type.

4. Heat resistant cylinder with switch SSD-T1L

Warning

■ Cylinder
In an environment with an ambient temperature of 150°C, external leakage will gradually occur after about 500,000 cycles. Please be careful.

■ Heat Resistant Cylinder Switch
The indicator light uses an LED. Continuous use at high temperatures will gradually reduce visibility. Even if the LED goes out, the switch output has a separate circuit configuration from the LED, so the switch output will operate normally.

5. With rubber air cushion SSD-K-□C

Caution

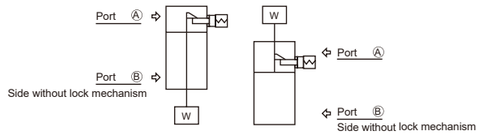
■ Please note that due to its structure, if the air supply is cut off, the stroke end position cannot be maintained. When detecting the stroke end with a switch, it may be outside the detection range, so set the switch position in an air-pressurized state.

■ Do not rapidly exhaust the air in the cylinder after operating at low speed outside the catalog specification range. (Example: Removing piping or coupler, etc.) The rubber-air cushion may become detached. Please be especially careful as this is more likely to occur when the air pressure is high.

6. Drop prevention type SSD-Q

Warning

■ In the locked state, if pressure is supplied to port Ⓐ when both side ports are unpressurized, the lock may not release, or the lock may suddenly release and the piston rod may fly out, which is very dangerous.
When releasing the lock mechanism, be sure to supply pressure to port F and release it from a state where no load is applied to the lock mechanism.



■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

■ Do not use 3-position valves.
Do not use in combination with 3-position valves (especially closed-center metal seal type). If pressure is sealed in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

Caution

■ The cylinder load factor should be 50% or less.
If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

■ If back pressure is applied to the lock mechanism side, the lock may disengage. Use a single valve or an individual exhaust type manifold.

■ Do not use multiple cylinders synchronized.
Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.

■ Since the lock mechanism works at the stroke end, if an external stopper is applied in the middle of the stroke, the lock mechanism will not work and there is a risk of falling. When setting the load, always confirm that the lock mechanism works.

■ Supply pressure equal to or greater than the minimum operating pressure to the port on the side with the lock mechanism.

■ If the piping on the side with the lock mechanism is thin and long, or if the speed controller is far from the cylinder port, the exhaust speed may be slow, and it may take time for the lock to engage. Please be careful. Also, the valve EXH/ Clogging in the silencer mounted on the port may cause the same result.

■ Use the speed controller with meter-out.
Lock may not be released with meter-in control.

■ On the side with the lock, always use at the cylinder's stroke end.
If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

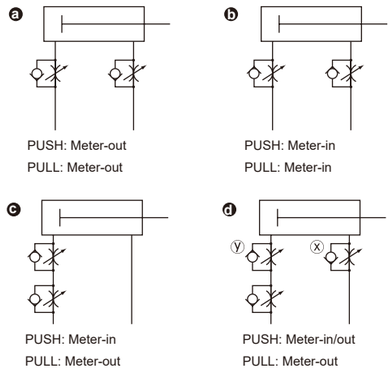
7. Low speed type SSD-F, SSD-KF

Caution

■ Install the speed controller near the cylinder.
If installed far from the cylinder, the speed will become unstable. Use SC-M3/M5, SC3W, SCD-M3/M5, SC3U series speed controllers.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
Use with a load factor of 50% or less.

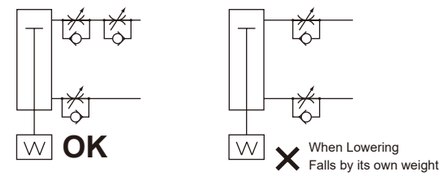
■ Speed control is stable with a meter-out circuit.
When driving a single-rod cylinder at creep speed in the PUSH direction, if the load resistance is small, a flying-out phenomenon may occur at the start of operation. As countermeasures, use circuits ⓑ, ⓒ or ⓓ. In addition, the ⓓ circuit is the most stable.



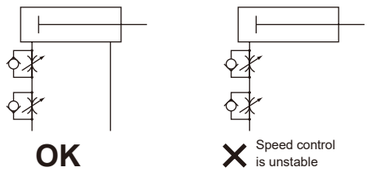
ⓓSpeed adjustment method for PUSH operation of the circuit:
1. Set the speed with the speed controller x.
2. Restrict the speed with the speed controller y until there is no popping out.
3. Reconfirmation of speed

(*1)When comparing ⓑ ⓒ ⓓ , peration is the most stable with the ⓓ circuit.

(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.



(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)
Lurching occurs in the following cases:
• Thrust > Resistance
*Resistance: *Resistance: Thrust due to residual pressure on exhaust side (For creep speed+ type, intake pressure = residual pressure) { For horizontal use: Frictional force due to load / For vertical use: Dead weight of the load

■ Do not apply lateral load to the cylinder.
Operation becomes unstable when lateral load is applied.

■ Avoid use in locations with vibration.
Operation becomes unstable due to the influence of vibration.

8. Low friction type SSD-KU

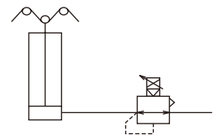
Warning

■ Durability varies depending on operating conditions and model characteristics.
Also, this cylinder is a cylinder with internal leakage. For the amount of leakage, please check the specifications (P. 488).

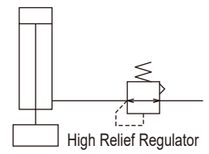
Caution

■ Install a speed controller on the cylinder.
Install a speed controller on the cylinder. Use within the operating piston speed range of each cylinder. When used with a balancer, etc., it may be better not to install a speed controller to improve supply/exhaust efficiency. The following circuits ⓐ to ⓒ are recommended depending on the application.

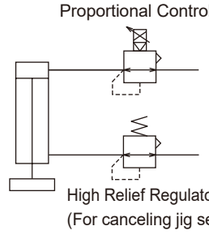
ⓐTension control (winding machines, etc.)



ⓑBalancer (machine tool Z-axis, etc.)



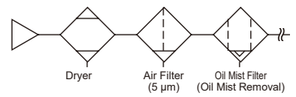
ⓒLoad control (polishing, etc.)



*To improve supply/exhaust characteristics, maximize piping volume as much as possible.

■ Do not lubricate. It will cause characteristics to fluctuate.

■ Poor quality air adversely affects characteristics and durability. Use clean air with the piping below.



■ Install the speed controller near the cylinder.
If installed far from the cylinder, the speed will become unstable.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
Use with a load factor of 50% or less.

■ Do not disassemble this product. If disassembled, performance may no longer be maintained. Furthermore, only consumable parts are not provided for this product.

■ Avoid use in environments with steam, high humidity, or alkaline atmospheres.

9. Non-rotating type SSD-M

Caution

■ Do not use in a way that applies rotational torque to the piston rod.
The non-rotating bushing will deform and the service life will be significantly reduced.

10. Cutting oil resistant type SSD-G2, G3 / SSD-KG2, KG3

Caution

■ Do not apply eccentric load to the piston rod. This may reduce the life of scrapers and bearings.

■ If there is no splashing of cutting oil or water on the piston rod, use the G or G1 series. Please note that if there is no scattering of cutting oil or water with G2 and G3 series, the lubrication of the piston rod will be cut off and the service life will be reduced.

11. Spatter adhesion prevention type SSD-G4 / SSD-KG4 / SSD-DG4

Warning

■ This cylinder series has improved durability in spatter scattering atmospheres compared to general type cylinders. However, please note that durability may be inferior to general type cylinders when used in other atmospheres.

During Use

1. Common

⚠ Warning

■ Install and remove rod metal using appropriate pliers (C-type retaining ring installation tool).

■ Even when using appropriate pliers (C-type retaining ring installation tool), be careful as the retaining ring may come off the tip of the pliers (C-type retaining ring installation tool) and fly off, potentially causing injury to personnel and damage to surrounding equipment.
Also, when installing, confirm that it is securely in the retaining ring groove before supplying air.

2. Drop prevention type SSD-Q

⚠ Warning

■ During equipment maintenance, for safety, please take separate measures to prevent the load from falling due to its own weight.

■ When stopping with external shock absorbing equipment (shock absorber, etc.), adjust so that there is no bounce. If there is bounce, the sleeve and stopper piston will make impact contact, leading to damage of the lock mechanism. Also, please perform periodic inspections once or twice a year to check for damage to the holding part due to this phenomenon.

⚠ Caution

■ After manual operation of the lock mechanism, return the lock mechanism to its original state. Also, do not perform manual operations other than during adjustment, as it is dangerous.

■ Release the lock when mounting or adjusting the cylinder.
If installation work, etc. is performed while the lock is engaged, the lock part may be damaged.

3. Low speed type SSD-F/SSD-KF

⚠ Caution

■ Use without lubrication.
Lubrication may change characteristics.

■ Adjust alignment, etc., so that no lateral load is applied to the cylinder. Also, adjust and install so that there is no twisting with respect to the sliding guide.
- Fluctuations in load or resistance will make operation unstable.
- Guides with a large difference between static and dynamic friction will have unstable operation.

4. Low friction type SSD-ICU

⚠ Caution

■ Adjust alignment, etc., so that no lateral load is applied to the cylinder. Also, adjust and install so that there is no twisting with respect to the sliding guide.
- Fluctuations in load or resistance will make operation unstable.
- For long strokes, the speed becomes unstable due to the self-weight of the piston rod. Please install and use a guide.
- Guides with a large difference between static and dynamic friction will have unstable operation.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

MEMO

CAT

Cartridge Cylinder

ø6, ø10, ø15



Space saving structure

CONTENTS

Product Introduction 704
Series System Table 703
●Single acting/Push type (CAT) 706
⚠Precautions for Use 710

●: Standard, ◎: Option, : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore size (mm)	Stroke (mm)			Mounting type		Piston rod end		Switch	Page
			5	10	15	Panel mount N	Embedded O	Male thread M	No thread F		
Single Acting, Push Type	CAT	ø6/ø10/ø15	●	●	●	●	●	◎	◎		706

Cartridge cylinder **CAT** Series

Thumb-sized ultra-compact single-acting cylinder with fully threaded outer diameter (ø6 to ø15)

Panel mountable due to full thread

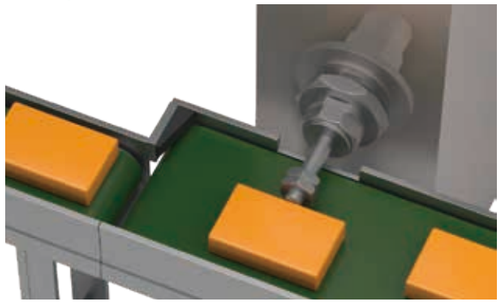


Application Example

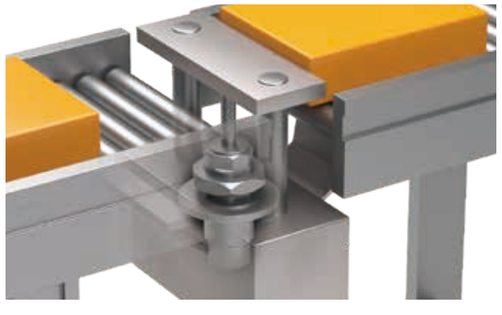
Sorting good and defective products



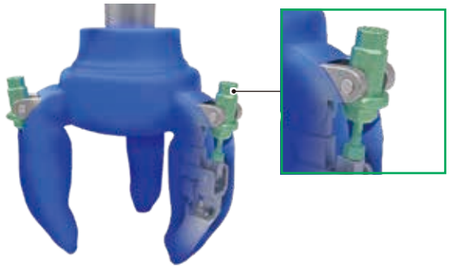
Clamp



Stopper



Robot hand

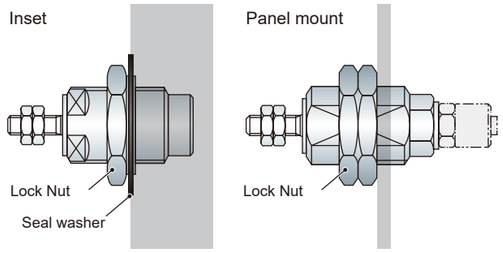


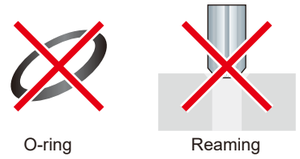
Easy installation

Threads are provided on the outer diameter of the tube, making it easy to attach to jigs, panels, etc.

2 types of mounting formats

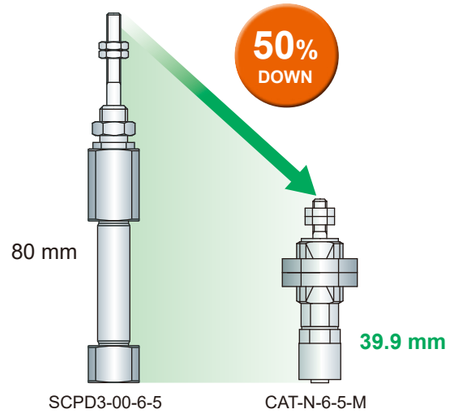
Embedded type and panel mount type are available for mounting. The embedded type uses a sealing washer for sealing, eliminating the need for O-rings, reaming, etc.





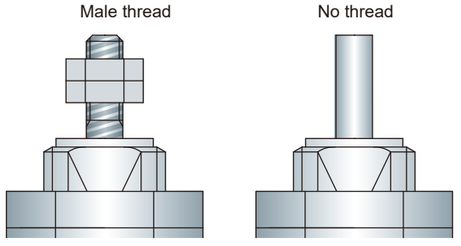
Ultra-compact size

The overall length of the cylinder is significantly shortened, and the inner diameter is also ultra-compact, from ø6 to ø15. Can be installed in a small space, allowing for downsizing of equipment.



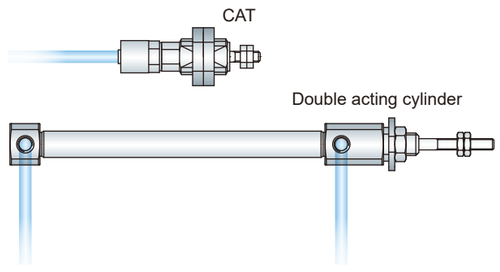
Selectable tip shape

Male thread and no thread options are available for the piston rod tip shape. Selectable according to the purpose.



Single air piping

Operates with just one air pipe due to the single-acting push method.



CAT Series Product Lineup

● : Standard -: Not manufacturable

Model Variations	Model No.	Bore size (mm)	Stroke (mm)			Mounting type		Piston rod end		Switch
						Panel mount	Embedded	Male thread	No thread	
			5	10	15	N	O	M	F	
Single Acting, Push Type	CAT	ø6 ø10 ø15	●	●	●	●	●	●	●	—

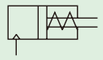


Cartridge Cylinder Single Acting / Push Type

CAT Series

● Tube bore: ø6, ø10, ø15

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch

CAT - N - 6 - 5 - M

- CAT: Model No.
- N: ❶ Mounting type
- 6: ❷ Bore size
- 5: ❸ Stroke
- M: ❹ Piston rod end

❶ Mounting type

Code	Content	
N	Panel mount	
O	Embedded	

❷ Bore size (mm)

Code	Content
6	ø6
10	ø10
15	ø15

❸ Stroke (mm)

Code	Content
5	5
10	10
15	15

❹ Piston rod end

Code	Content	
M	Male thread	
F	No thread	

Specifications

Item	CAT		
Bore size mm	ø6	ø10	ø15
Actuation method	Single Acting, Push Type		
Operating Fluid	Compressed Air		
Maximum operating pressure MPa	0.7		
Min. Operating Pressure MPa	0.2	0.15	
Proof pressure MPa	1.05		
Ambient Temperature °C	-10 to 60 (however, no freezing)		
Port Size	M5		
Stroke tolerance mm	+1.0 0		
Operating Piston Speed mm/s	50 to 500		
Cushion	None		
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)		
Allowable absorbed energy J	This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.		

Note: Do not leave the single acting cylinder pressurized for long periods. If the cylinder is left pressurized for long periods, the piston rod may not return due to spring load when the pressure is released.

Stroke

Bore Size (mm)	Standard Stroke (mm)
ø6	5/10/15
ø10	
ø15	

Note: Strokes other than standard are not available.

Cylinder Weight

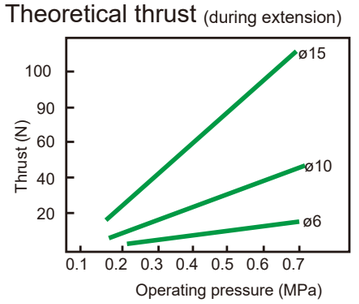
(Unit: g)

Stroke (mm) / Bore Size (mm)	5	10	15
ø6	18.0	21.0	23.0
ø10	43.5	50.0	56.0
ø15	100.0	114.5	128.0

Spring load (load during retraction) (Unit: N)

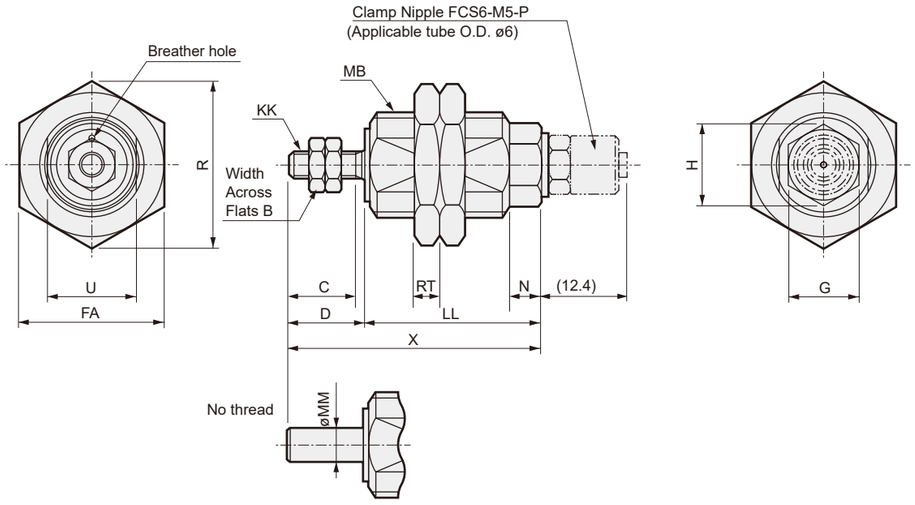
Bore Size (mm)	Stroke (mm)	At 0 Stroke	At Full Stroke Operation
ø6	5	1.92	3.85
	10	1.37	3.33
	15	1.17	3.66
ø10	5	3.92	6.8
	10	3.43	7.4
	15	2.94	9.04
ø15	5	5.88	8.82
	10	4.41	8.82
	15	3.92	9.8

Theoretical thrust (during extension)



Outline Dimension Drawing

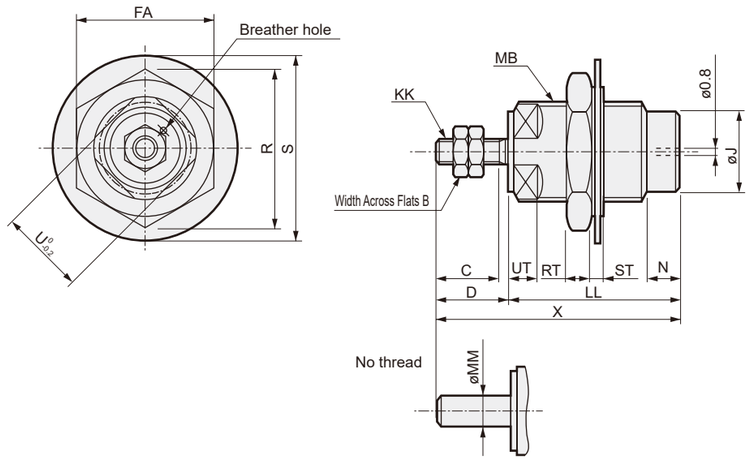
●Panel mount type (N)



Code / Bore Size (mm)	B	C	D	FA	G	H	KK	LL Stroke 5	LL Stroke 10	LL Stroke 15	MB	MM	N	R	RT	U	X Stroke 5	X Stroke 10	X Stroke 15
ø6	5.5	7	8.5	14	$7^{0}_{-0.2}$	8.1	M3	19	26	32	M10×1	3	5	16.2	3	$8^{0}_{-0.2}$	27.5	34.5	40.5
ø10	7	10	11.5	22	$11^{0}_{-0.25}$	12.7	M4	21	27	33.5	M16 × 1.5	5	5	25.4	4	$13.5^{0}_{-0.25}$	32.5	38.5	45
ø15	8	12	13.5	30	$18^{0}_{-0.25}$	20.8	M5	24	30	36	M24 × 1.5	6	6	34.6	5	$22^{0}_{-0.35}$	37.5	43.5	49.5

Note: For air piping, use the attached clamping nipple (orifice size ø0.8).

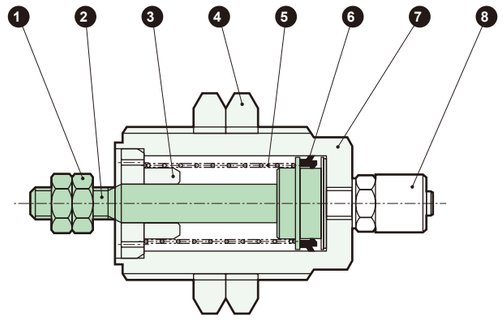
●Embedded type (O)



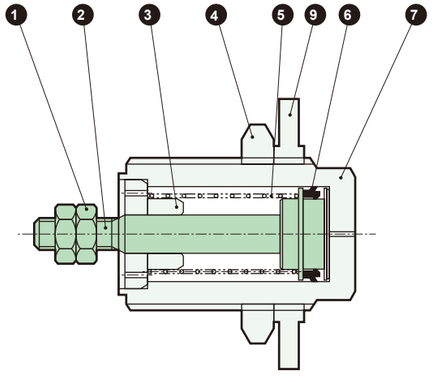
Code / Bore Size (mm)	B	C	D	FA	J	KK	LL Stroke 5	LL Stroke 10	LL Stroke 15	MB	MM	N	R	RT	S	ST	U	UT	X Stroke 5	X Stroke 10	X Stroke 15
ø6	5.5	7	8.5	14	8.5	M3	19	26	32	M10×1	3	5	16.2	3	20.3	1.5	9	3.5	27.5	34.5	40.5
ø10	7	10	11.5	22	13	M4	21	27	33.5	M16 × 1.5	5	5	25.4	4	30.3	2	14	4.5	32.5	38.5	45
ø15	8	12	13.5	30	21	M5	24	30	36	M24 × 1.5	6	6	34.6	5	42.8	3	22	5.5	37.5	43.5	49.5

Internal Structure Diagram/Material

●Panel mount type (N)



●Embedded type (O)



Do not disassemble

Part No.	Part Name	Material	Remarks
1	Hexagon Nut	Stainless Steel	
2	Piston Rod	Stainless Steel	
3	Rod Cover	Copper Alloy	Nickel Plating
4	Nut	Copper Alloy	Nickel Plating
5	Coil Spring	Steel	Electrodeposition Coating

Part No.	Part Name	Material	Remarks
6	Piston Packing	Nitrile Rubber	
7	Body	Copper Alloy	Nickel Plating
8	Clamp nipple		
9	Seal Washer	Nitrile Rubber, Steel	

To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

Individual Precautions: Cartridge cylinder CAT Series

During Use

Caution

■ Do not use in a way that applies a load when the piston rod retracts.
The cylinder's built-in spring only has enough force to return the piston rod, so if a load is applied, the piston rod will not return to the stroke end.

■ Do not leave single-acting cylinders pressurized.
If left pressurized, the piston rod may not return by spring force when the pressure is released.

■ For the single acting cylinder, take care when mounting so as not to block the breathing hole provided on the cover surface, as this may lead to malfunctions.

■ This cylinder is a non-disassembly type, so do not apply excessive force to the rod cover or main body.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

Space saving structure

MDC2

Compact Direct Cylinder

ø4, ø6, ø8, ø10

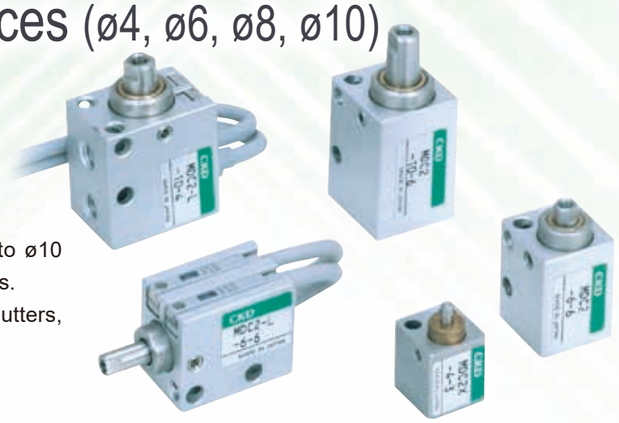


CONTENTS

Product Introduction	714
Series System Table	716
Variation / Option combinability table	717
● Double acting, Single rod type (MDC2)	718
● Single acting, Push type (MDC2-X)	726
● Single acting, Retracting type (MDC2-Y)	726
● Double acting, Low speed type (MDC2-F)	738
External Dimensions Diagram with Switch	742
⚠ Precautions for Use	744

MDC2 Series

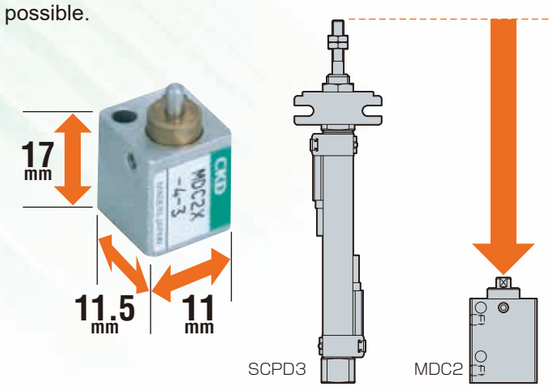
Ultra-compact cylinder capable of direct mounting on 4 surfaces (ø4, ø6, ø8, ø10)



This cylinder has an inner diameter of ø4 to ø10 and can be directly mounted from 4 directions.
Use for workpiece ejection, parts feeder shutters, etc.

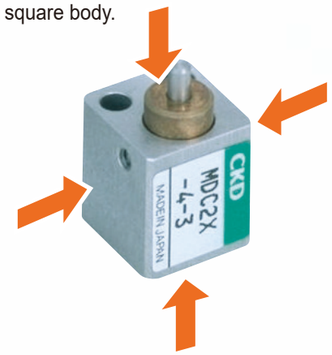
Space-saving design

Overall length and external dimensions shortened as much as possible.



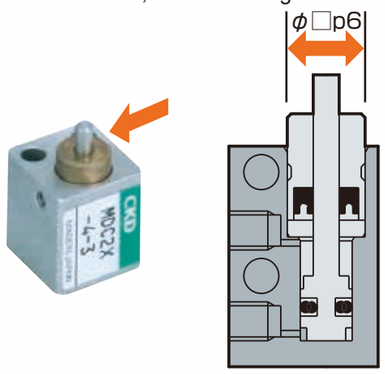
Direct 4-sided mounting

Achieves direct mounting from 4 sides despite its ultra-compact size by adopting a square body.

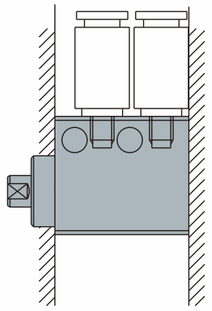


Easy centering

With spigot joint on the rod side, robust bearing structure.



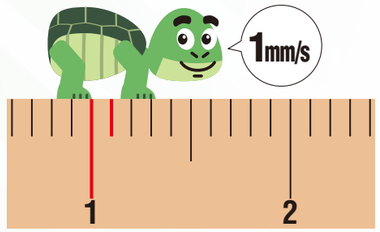
Installation in a narrow, small space and Piping is possible



Ultra-low speed drive from 1 mm/s possible (Low speed type MDC2-F ø6 or more)

Ultra-low speed drive up to 1 mm/s possible

No stick-slip, stable operation even at fine speeds.
Ideal for conveying and positioning delicate products.

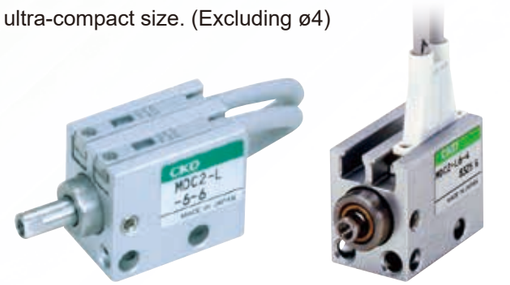


Our company's original sliding mechanism

- Special treatment of the inner surface of the tube.
- Special treatment of the packing surface and optimization of hardness.
- Optimal grease adopted.

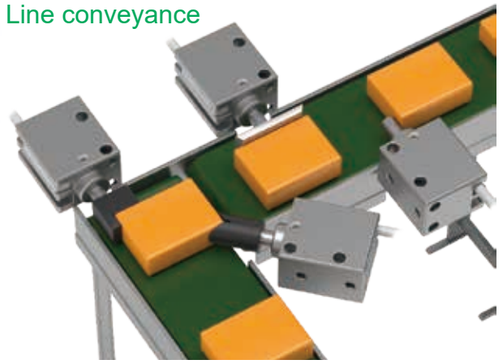
Switch mountable despite ultra-compact size

Cylinder switch can be neatly mounted despite its ultra-compact size. (Excluding ø4)



Application Example

Line conveyance



Abundant variations

Double-acting, single-acting, and ultra low speed types can be selected according to the application.

Model variations		Tube I.D.	Standard stroke (mm) 3	4	6	8	10	Switch
Double acting/ single rod With Switch	MDC2 MDC2-L	ø4	●		●			●
		ø6/ø8		●	●	●		●
		ø10		●	●		●	●
Single Acting, Push Type With Switch	MDC2-X MDC2-XL	ø4	●		●			●
		ø6/ø8		●	●	●		●
		ø10		●	●		●	●
Single acting/pull With Switch	MDC2-Y MDC2-YL	ø4	●		●			●
		ø6/ø8		●	●	●		●
		ø10		●	●		●	●
Double acting/ fine speed With Switch	MDC2-F MDC2-LF	ø6/ø8		●	●	●		●
		ø10		●	●		●	●

Compact Direct Cylinder MDC2 Series

●: Standard, ◎: Option, : Not manufacturable

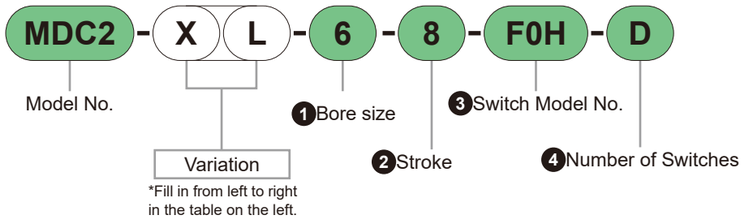
Variation	Model No. / Circuit Diagram / Symbol	Bore size (mm)	Standard Stroke (mm) 3	4	6	8	10	Min. Stroke (mm)	Maximum Stroke (mm)	Switch	Page
Double Acting, Single Rod Type with Switch	MDC2 MDC2-L	ø4	●		●			3	6		718
		ø6		●	●	●		4	8	◎	
		ø8		●	●	●				◎	
		ø10		●	●		●		10	◎	
Single Acting, Push Type with Switch	MDC2-X MDC2-XL	ø4	●		●			3	6		726
		ø6		●	●	●		4	8	◎	
		ø8		●	●	●				◎	
		ø10		●	●		●		10	◎	
Single Acting, Retracting Type with Switch	MDC2-Y MDC2-YL	ø4	●		●			3	6		726
		ø6		●	●	●		4	8	◎	
		ø8		●	●	●				◎	
		ø10		●	●		●		10	◎	
Double Acting, Creep Speed Type with Switch	MDC2-F MDC2-LF	ø6		●	●	●		4	8	◎	738
		ø8		●	●	●				◎	
		ø10		●	●		●		10	◎	

Combination Availability Table for Variations and Option Items

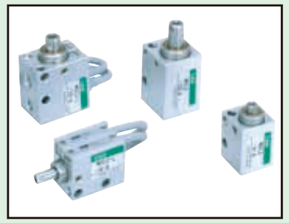
◎Mark: Option
○Mark: Custom Products
△Mark: Manufacturable depending on conditions (Please consult)
×Mark: Not manufacturable

Category		Category	Variation: Double Acting/Single Rod Type	Single Acting, Push Type	Single Acting, Retracting Type	With Cylinder Switch	Low speed type
		Code	None	X	Y	L	F
Variation	Double Acting/Single Rod Type	Blank					
	Single Acting, Push Type	X			×	◎	×
	Single Acting, Retracting Type	Y				◎	×
	With Cylinder Switch	L					◎
	Low speed type	F					
Accessories	Cylinder Switch	Separately Shown	◎	◎	◎	◎	◎

[Model Number Notation Example]



Model No.: Compact Direct Cylinder
● Variation Single Acting/Push Type/With Switch
1 Bore size: ø6 mm
2 Stroke: 8 mm
3 Switch Model No. Reed FO switch, lead wire 1 m
4 Number of Switches: With 2 pcs.

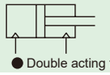


Compact Direct Cylinder Double Acting, Single Rod Type

MDC2 Series

● Tube bore: ø4, ø6, ø8, ø10

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MDC2 - 6 - 4
(1) (2) (3)

With Switch
(Built-in magnet for switch)

MDC2-L - 6 - 4 - F2V - R

(1) Model No. (2) Bore size (3) Stroke (4) Switch Model No. (5) Number of Switches

(1) Model No.

Code	Content
MDC2	Double acting, Single rod
MDC2-L	Double acting, Single rod, With switch (ø6 to ø10)

(2) Bore Size (mm)

Code	Content
4	ø4
6	ø6
8	ø8
10	ø10

(3) Stroke (mm)

Stroke	Applicable Tube I.D.			
	ø4	ø6	ø8	ø10
3	●			
4		●	●	●
6	●	●	●	●
8		●	●	
10				●

Note: Refer to page 720 for the min. stroke with switch.

(4) Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire type	-	24 ± 10%	-	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F0H
3 m F0H 3

(5) Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

MDC2 - ···· - P7□

MDC2 - ···· - P5□

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Structure usable in secondary battery manufacturing processes

MDC2 - ····- P4□

*Please contact us for details.

High Durability Components HP Series (Catalog No. CC-1421AA)

● Long-life actuator that can contribute to productivity improvement with stable operation

MDC2 - ····- HP□

About Custom Product Specifications

Code	Content
Rod End Shape Modification	Refer to Ending 11.

Switch Single Unit Model No. Display Method

SW - F0H
(4) Switch Model No.

Specifications

Item	MDC2 MDC2-L (with switch)			
Bore size mm	ø4 *1	ø6	ø8	ø10
Actuation method	Double Acting Type			
Operating Fluid	Compressed Air			
Maximum operating pressure MPa	0.7			
Min. Operating Pressure MPa	0.2	0.15		0.1
Proof pressure MPa	1.05			
Ambient Temperature °C	-10 to 60 (however, no freezing) *2			
Port Size	M3			M5
Stroke tolerance mm	+0.5 0			
Operating Piston Speed mm/s	50 to 500			
Cushion	None			
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)			
Allowable absorbed energy J	This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.			

*1: MDC2-L does not have ø4.
*2: When using a non-contact switch, use at 40°C or less.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Minimum stroke with 1 switch (mm)		Minimum stroke with 2 switches (mm)	
		Reed switch	Solid state switch	Reed switch	Solid state switch
ø4	3, 6	–	–	–	–
ø6	4, 6, 8	4	4	6	4 (8)
ø8	4, 6, 8	4	4	8	4 (8)
ø10	4, 6, 10	4	4	6	4 (10)

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Cylinder Weight Table

(Unit: g)

Stroke (mm)	3		4		6		8		10		Weight per switch
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	
ø4	6.4	–	–	–	7.3	–	–	–	–	–	–
ø6	–	–	11.4	13.1	12.4	14	13.4	15	–	–	10
ø8	–	–	16.1	18.2	17.4	19.5	18.7	20.8	–	–	10
ø10	–	–	21.4	23.3	22.6	24.5	–	–	25	26.9	10

Theoretical Thrust Table

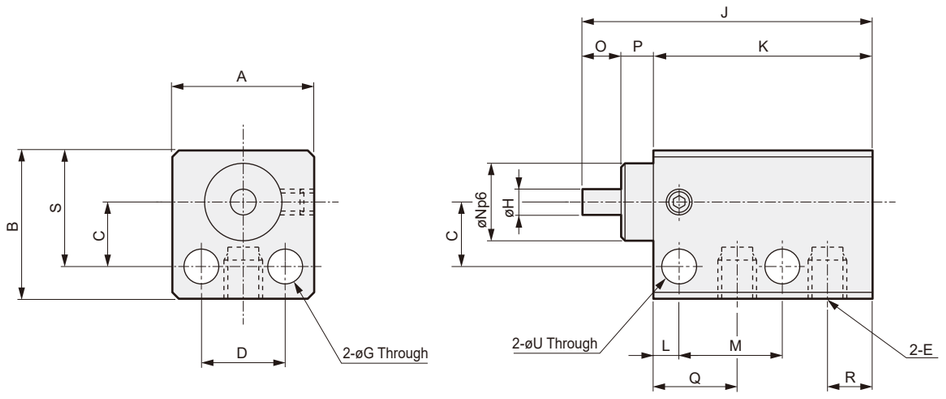
(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø4	Push	-	-	2.51	3.77	5.03	6.28	7.54	8.80
	Pull	-	-	1.88	2.83	3.77	4.71	5.65	6.60
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	-	2.36	3.14	4.71	6.28	7.85	9.42	11.0
ø8	Push	-	7.54	10.1	15.1	20.1	25.1	30.2	35.2
	Pull	-	4.59	6.13	9.19	12.3	15.3	18.4	21.4
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	5.03	7.54	10.1	15.1	20.1	25.1	30.2	35.2

MEMO

Outline Dimension Drawing

●MDC2-4-3,6 (Double acting, Without switch)

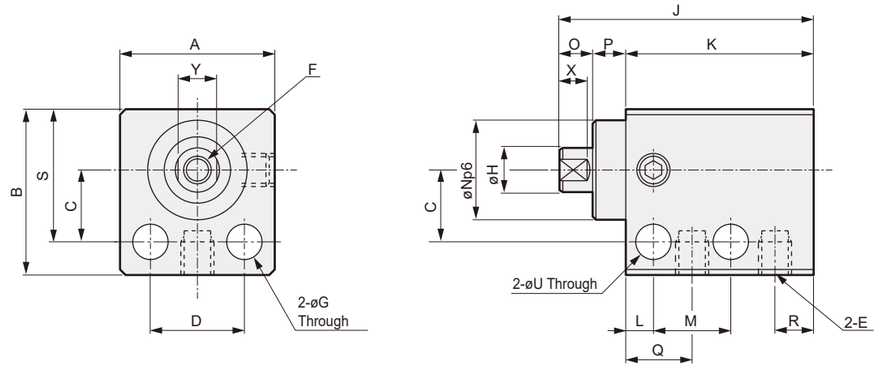


Code / Model No.	A	B	C	D	E	G	H	J	K	L	M	N	O	P	Q	R	S	U
MDC2-4-3	11	11.5	5	6.5	M3	2.7	2	22.5	17	2	8	6	3	2.5	6.5	3.5	9	2.7
MDC2-4-6	11	11.5	5	6.5	M3	2.7	2	25.5	20	2	11	6	3	2.5	6.5	3.5	9	2.7

Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

Outline Dimension Drawing

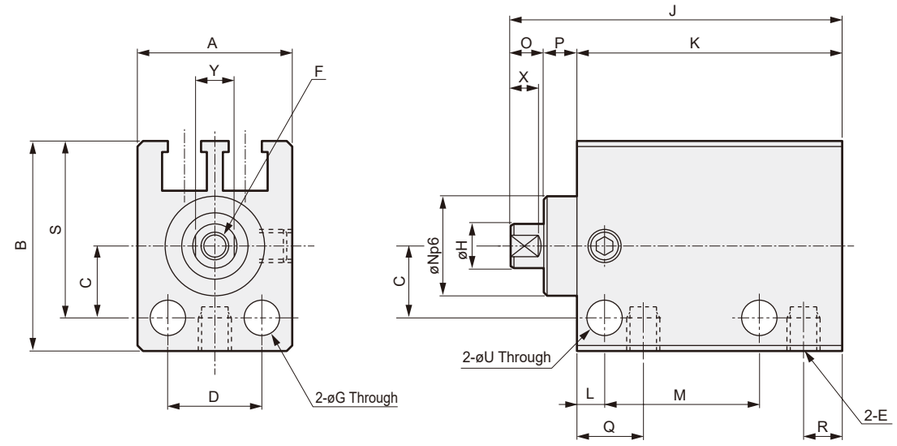
●MDC2-6,8,10 (Double acting, Without switch)



Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-6	4	14	15	6.5	8.5	M3	M2.5×0.45 Depth 4	3.2	4	23	17	2.5	7.5	9	3	3	6	3.5	12	3.2	2.5	3.5
	6									25	19		9									
	8									27	21		11									
MDC2-8	4	16	17	7.5	10	M3	M3×0.5 Depth 5	3.2	5	23	17	2.5	7.5	11	3	3	6	3.5	14	3.2	2.5	4.5
	6									25	19		9									
	8									27	21		11									
MDC2-10	4	16	17.5	8	10	M5	M3×0.5 Depth 5	3.2	6	28	22	2.5	9.5	11	3	3	7	5	14.5	3.2	2.5	5
	6									30	24		11.5									
	10									34	28		15.5									

Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

●MDC2-L-6,8,10 (Double acting, With switch)

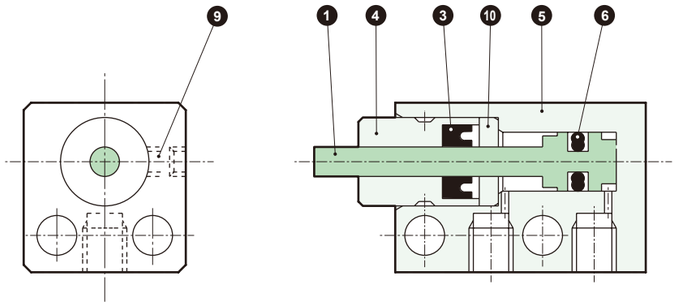


Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-L-6	4	14	19	6.5	8.5	M3	M2.5×0.45 Depth 4	3.2	4	28	22	2.5	12.5	9	3	3	6	3.5	16	3.2	2.5	3.5
	6									30	24		14									
	8									32	26		16									
MDC2-L-8	4	16	22	7.5	10	M3	M3×0.5 Depth 5	3.2	5	28	22	2.5	12.5	11	3	3	6	3.5	18.5	3.2	2.5	4.5
	6									30	24		14									
	8									32	26		16									
MDC2-L-10	4	16	22	8	10	M5	M3×0.5 Depth 5	3.2	6	31	25	2.5	12.5	11	3	3	7	5	19	3.2	2.5	5
	6									33	27		14.5									
	10									37	31		18.5									

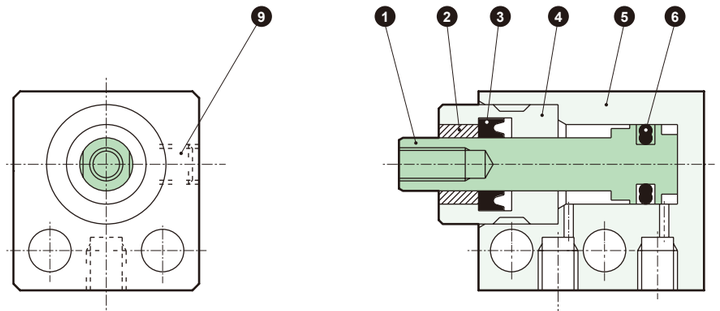
*1: The width and height dimensions of the main body have a plus tolerance. Pay attention to position setting when used in parallel and interference with external parts.
*2: For dimensions of models with switches, see P. 742.

Internal Structure Diagram/Material

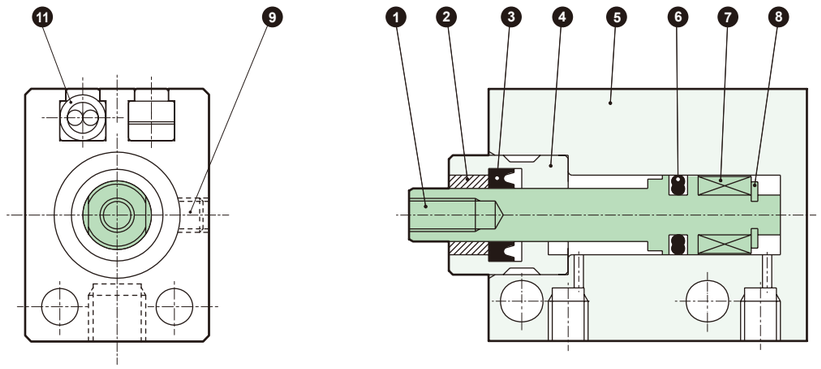
●MDC2-4 (Double acting)



●MDC2-6,8,10 (Double acting)



●MDC2-L-6,8,10 (Double acting, With switch)



Do not disassemble

Part Number	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	Magnet	Plastic	
2	Bushing	Oil-Impregnated Bearing Alloy		8	E-type retaining ring	Stainless Steel	
3	Rod Packing	Nitrile Rubber		9	Hexagon socket head set screw	Stainless Steel	
4	Rod Metal	ø4: Copper alloy ø6 to ø10: Stainless steel		10	Collar	Stainless Steel	
				With Switch			
5	Cylinder Body	Aluminum Alloy	Hard Anodized	11	Switch		
6	Piston Packing	Nitrile Rubber					

MEMO



Compact Direct Cylinder Single Acting, Push Type; Single Acting, Retracting Type

MDC2-$^{X}_{Y}$ Series

● Tube bore: ø4, ø6, ø8, ø10

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MDC2-X - 6 - 4
1 2 3

With Switch
(Built-in magnet for switch)

MDC2-XL - 6 - 4 - F2V - R
1 Model No. 3 Stroke 5 Number of Switches
2 Bore size 4 Switch Model No.

1 Model No.

Code	Content
MDC2-X	Single Acting, Push Type
MDC2-XL	Single acting, Push type, With switch (ø6 to ø10)
MDC2-Y	Single Acting, Retracting Type
MDC2-YL	Single acting, Retracting type, With switch (ø6 to ø10)

2 Bore Size (mm)

Code	Content
4	ø4
6	ø6
8	ø8
10	ø10

3 Stroke (mm)

Stroke	Applicable Tube I.D.			
	ø4	ø6	ø8	ø10
3	●			
4		●	●	●
6	●	●	●	●
8		●	●	
10				●

Note: Refer to P. 728 for the min. stroke with switch.

4 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire type	-	24 ± 10%	-	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F0H
3 m F0H 3

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

About Custom Product Specifications

Code	Content
Rod End Shape Modification	Refer to Ending 11.

Switch Single Unit Model No. Display Method

SW - F0H
4 Switch Model No.

Specifications

Item		MDC2-X, MDC2-Y MDC2-XL (with switch), MDC2-YL (with switch)			
Bore size mm		ø4 *1	ø6	ø8	ø10
Actuation method	MDC2-X (L)	Single acting push type			
	MDC2-Y (L)	Single acting retracting type			
Operating Fluid		Compressed Air			
Maximum operating pressure MPa		0.7			
Min. working pressure MPa	MDC2-X (L)	0.35	0.3		0.25
	MDC2-Y (L)	0.4		0.3	0.25
Proof pressure MPa		1.05			
Ambient Temperature °C		-10 to 60 (however, no freezing) *2			
Port Size		M3			M5
Stroke tolerance mm		+0.5 0			
Operating Piston Speed mm/s		50 to 500			
Cushion		None			
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)			
Allowable absorbed energy J		This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.			

*1: MDC2-XL and MDC2-YL do not have ø4.
*2: When using a non-contact switch, use at 40°C or less.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Minimum stroke with 1 switch (mm)		Minimum stroke with 2 switches (mm)	
		Reed switch	Solid state switch	Reed switch	Solid state switch
ø4	3, 6	–	–	–	–
ø6	4, 6, 8	4	4	6	4 (8)
ø8	4, 6, 8	4	4	8	4 (8)
ø10	4, 6, 10	4	4	6	4 (10)

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Cylinder Weight Table

(Unit: g)

Stroke (mm)		3		4		6		8		10		Weight per switch
Bore Size (mm)	Model No.	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	
ø4	MDC2-X	4.9	–	–	–	6.9	–	–	–	–	–	–
	MDC2-Y	7.4	–	–	–	9.4	–	–	–	–	–	
ø6	MDC2-X	–	–	10.9	12.6	11.2	14.4	15.1	16.8	–	–	10
	MDC2-Y	–	–	13.3	15	15	16.7	17.5	19.2	–	–	
ø8	MDC2-X	–	–	16	18	18.4	20.5	20.7	22.8	–	–	10
	MDC2-Y	–	–	19	21	21.4	23.5	23.7	25.8	–	–	
ø10	MDC2-X	–	–	19.6	22	22	24.4	–	–	26.9	29.3	10
	MDC2-Y	–	–	21.2	23.4	23.6	25.8	–	–	28.5	30.7	

Spring Load

(Unit: N)

Bore Size (mm)	Stroke (mm)	Spring Load	
		At set	During operation
ø4	3, 6	1.8	2.9
ø6	4, 6, 8	2.3	5.0
ø8	4, 6, 8	4.0	7.0
ø10	4, 6, 10	4.1	7.4

Theoretical Thrust Table

● MDC2-X

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa						
		0.25	0.3	0.35	0.4	0.5	0.6	0.7
ø4	Push	-	-	1.50	2.13	3.38	4.64	5.90
	Pull	-	-	Refer to "Spring Load" in the table above.				
ø6	Push	-	3.48	4.90	6.31	9.1	12.0	14.8
	Pull	-	Refer to "Spring Load" in the table above.					
ø8	Push	-	8.08	10.6	13.1	18.1	23.2	28.2
	Pull	-	Refer to "Spring Load" in the table above.					
ø10	Push	12.2	16.2	20.1	24.0	31.9	39.7	47.6
	Pull	Refer to "Spring Load" in the table above.						

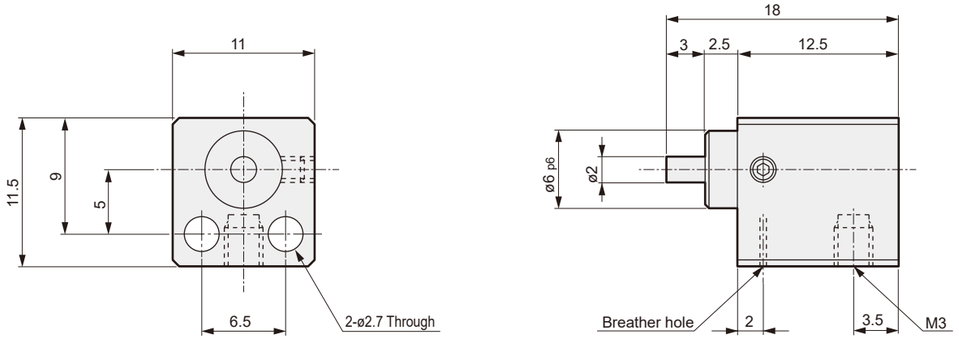
● MDC2-Y

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa						
		0.25	0.3	0.35	0.4	0.5	0.6	0.7
ø4	Push	-	-	-	Refer to "Spring Load" in the table above.			
	Pull	-	-	-	0.87	1.81	2.75	3.70
ø6	Push	-	-	-	Refer to "Spring Load" in the table above.			
	Pull	-	-	-	1.28	2.85	4.42	6.0
ø8	Push	-	Refer to "Spring Load" in the table above.					
	Pull	-	2.19	3.72	5.25	8.3	11.4	14.4
ø10	Push	Refer to "Spring Load" in the table above.						
	Pull	5.17	7.68	10.2	12.7	17.7	22.8	27.8

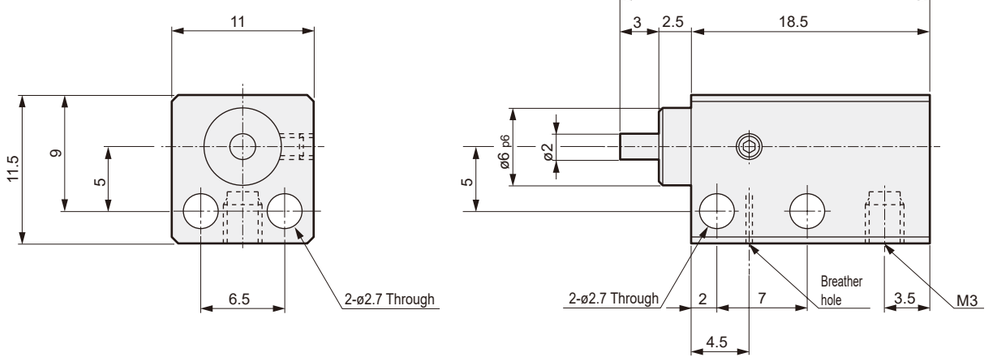
Outline Dimension Drawing

● MDC2-X-4-3 (Single acting, Push type)



Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

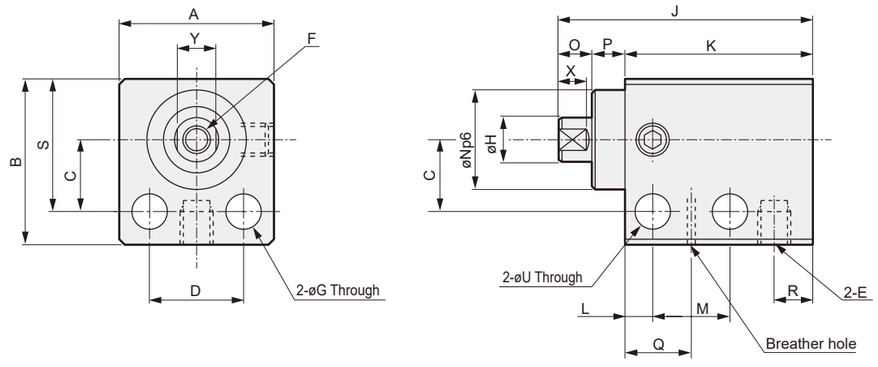
● MDC2-X-4-6 (Single acting, Push type)



Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

Outline Dimension Drawing

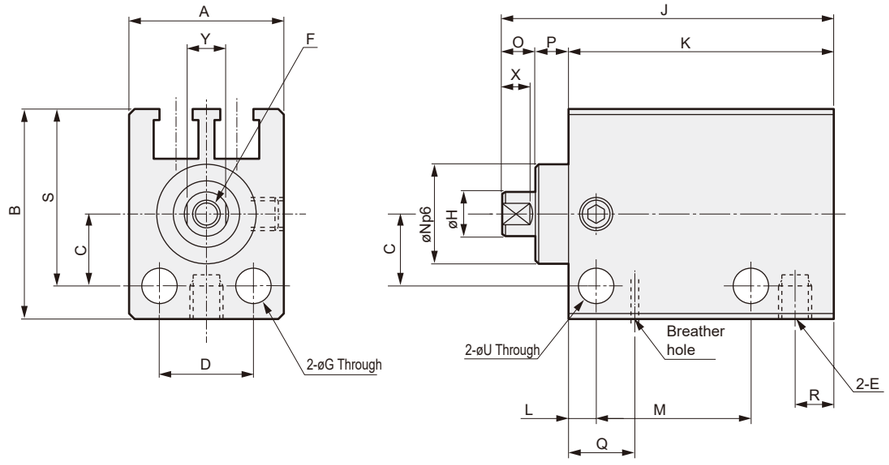
● MDC2-X-6,8,10 (Single acting, Push type, Without switch)



Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-X-6	4	14	15	6.5	8.5	M3	M2.5×0.45 Depth 4	3.2	4	22	16	2.5	6.5	9	3	3	6	3.5	12	3.2	2.5	3.5
	6									25	19		8.5									
	8									29	23		10.5									
MDC2-X-8	4	16	17	7.5	10	M3	M3× 0.5 Depth 5	3.2	5	23	17	2.5	7.5	11	3	3	7	3.5	14	3.2	2.5	4.5
	6									26	20		9									
	8									29	23		11									
MDC2-X-10	4	16	17.5	8	10	M5	M3× 0.5 Depth 5	3.2	6	26	20	2.5	7.5	11	3	3	7.5	5	14.5	3.2	2.5	5
	6									29	23		9.5									
	10									35	29		13.5									

Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

● MDC2-XL-6,8,10 (Single acting, Push type, With switch)

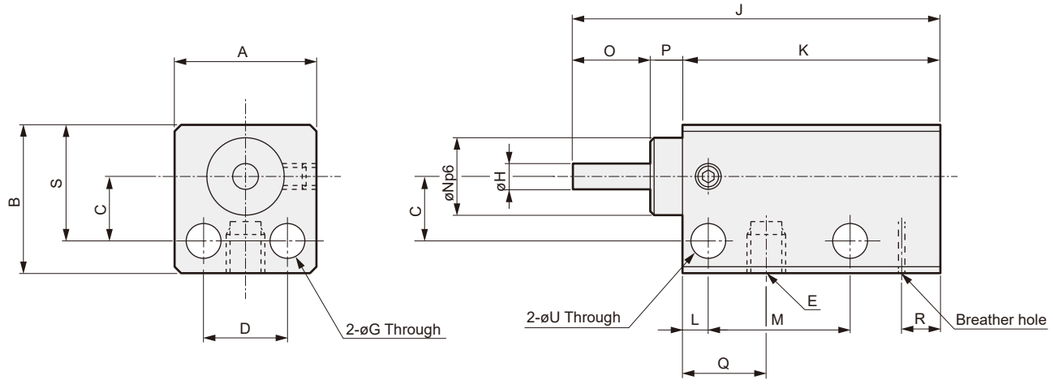


Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-XL-6	4	14	19	6.5	8.5	M3	M2.5×0.45 Depth 4	3.2	4	27	21	2.5	11.5	9	3	3	6	3.5	16	3.2	2.5	3.5
	6									30	24		13.5									
	8									34	28		15.5									
MDC2-XL-8	4	16	22	7.5	10	M3	M3× 0.5 Depth 5	3.2	5	28	22	2.5	12.5	11	3	3	7	3.5	18.5	3.2	2.5	4.5
	6									31	25		14									
	8									34	28		16									
MDC2-XL-10	4	16	22	8	10	M5	M3× 0.5 Depth 5	3.2	6	31	25	2.5	12.5	11	3	3	7.5	5	19	3.2	2.5	5
	6									34	28		14.5									
	10									40	34		18.5									

*1: The width and height dimensions of the main body have a plus tolerance. Pay attention to position setting when used in parallel and interference with external parts.
*2: For dimensions of models with switches, see P. 742 and 743.

Outline Dimension Drawing

●MDC2-Y-4-3,6 (Single acting, Retracting type)

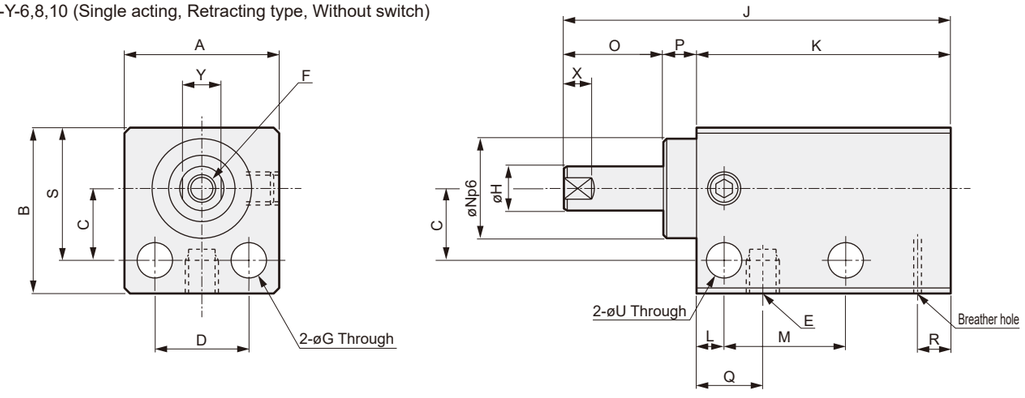


Code / Model No.	A	B	C	D	E	G	H	J	K	L	M	N	O	P	Q	R	S	U
MDC2-Y-4-3	11	11.5	5	6.5	M3	2.7	2	28.5	20	2	11	6	6	2.5	6.5	3.5	9	2.7
MDC2-Y-4-6	11	11.5	5	6.5	M3	2.7	2	37.5	26	2	14	6	9	2.5	6.5	3.5	9	2.7

Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

Outline Dimension Drawing

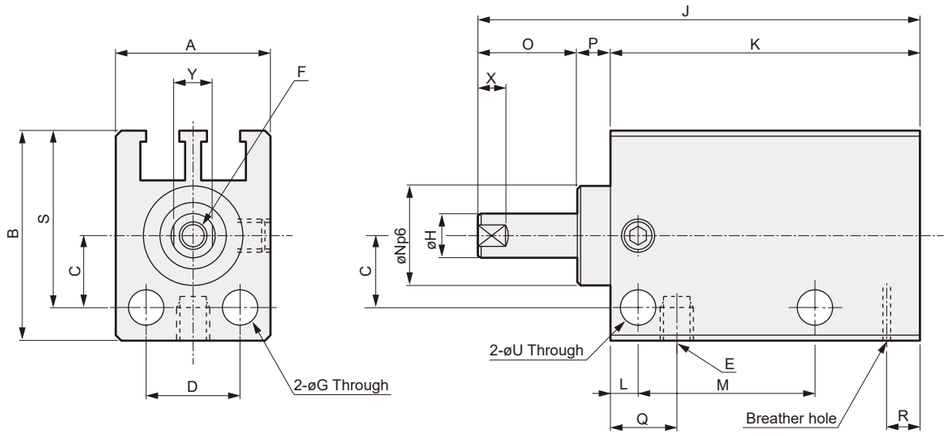
●MDC2-Y-6,8,10 (Single acting, Retracting type, Without switch)



Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-Y-6	4	14	15	6.5	8.5	M3	M2.5× 0.45 Depth 4	3.2	4	30	20	2.5	9	9	7	3	6	3	12	3.2	2.5	3.5
	6									35	23		11		9							
	8									41	27		13		11							
MDC2-Y-8	4	16	17	7.5	10	M3	M3× 0.5 Depth 5	3.2	5	31	21	2.5	9.5	11	7	3	6	3	14	3.2	2.5	4.5
	6									36	24		11.5		9							
	8									41	27		13.5		11							
MDC2-Y-10	4	16	17.5	8	10	M5	M3× 0.5 Depth 5	3.2	6	32	22	2.5	9.5	11	7	3	7	3.5	14.5	3.2	2.5	5
	6									37	25		11.5		9							
	10									47	31		15.5		13							

Note: Width and height dimensions of the body have positive tolerance. Pay attention to position setting when used in parallel and interference with external parts.

●MDC2-YL-6,8,10 (Single acting, Retracting type, With switch)

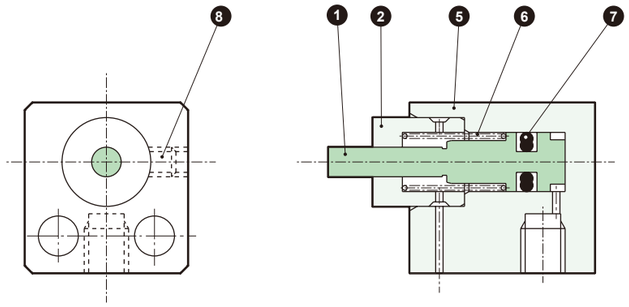


Code / Model No.	Stroke	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	U	X	Y
MDC2-YL-6	4	14	19	6.5	8.5	M3	M2.5× 0.45 Depth 4	3.2	4	35	25	2.5	14	9	7	3	6	3	16	3.2	2.5	3.5
	6									40	28		16		9							
	8									46	32		18		11							
MDC2-YL-8	4	16	22	7.5	10	M3	M3× 0.5 Depth 5	3.2	5	36	26	2.5	14.5	11	7	3	6	3	18.5	3.2	2.5	4.5
	6									41	29		16.5		9							
	8									46	32		18.5		11							
MDC2-YL-10	4	16	22	8	10	M5	M3× 0.5 Depth 5	3.2	6	36	26	2.5	13.5	11	7	3	7	3.5	19	3.2	2.5	5
	6									41	29		15.5		9							
	10									51	35		19.5		13							

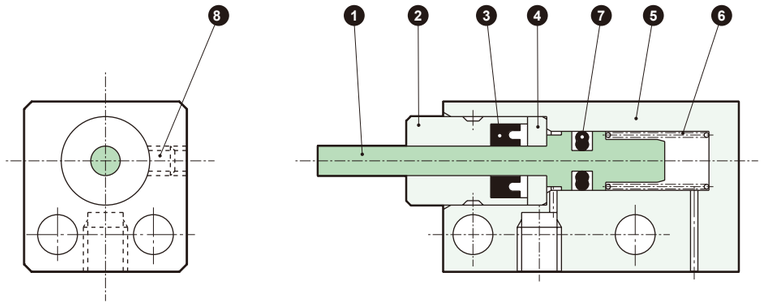
*1: The width and height dimensions of the main body have a plus tolerance. Pay attention to position setting when used in parallel and interference with external parts.
*2: For dimensions of models with switches, see P. 742 and 743.

Internal Structure Diagram/Material

●MDC2-X-4 (Single acting, Push type)



●MDC2-Y-4 (Single acting, Retracting type)

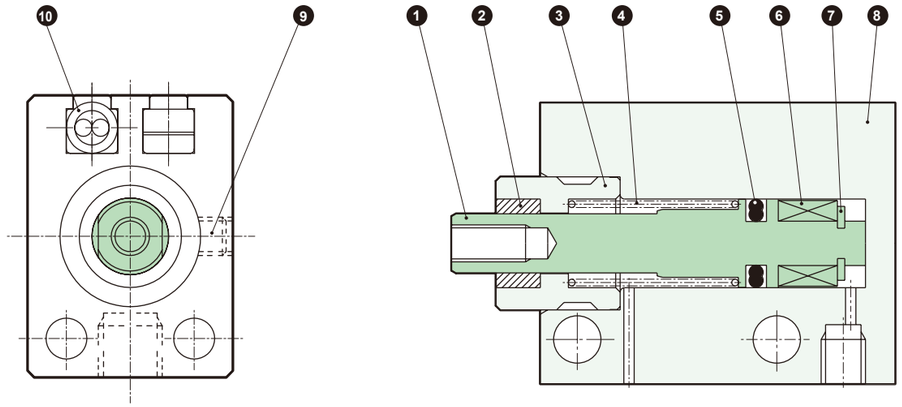


Do not disassemble

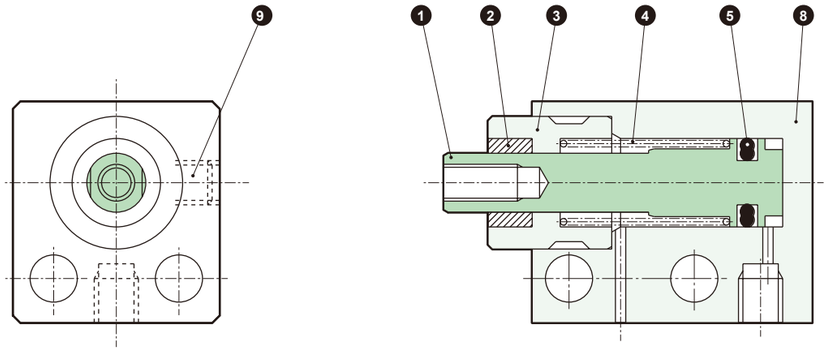
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		5	Cylinder Body	Aluminum Alloy	Hard Anodized
2	Rod Metal	Copper Alloy		6	Coil Spring	Steel	Electrodeposition Coating
3	Rod Packing	Nitrile Rubber		7	Piston Packing	Nitrile Rubber	
4	Collar	Stainless Steel		8	Hexagon socket head set screw	Stainless Steel	

Internal Structure Diagram/Material

●MDC2-XL-6, 8, 10 (Single acting, Push type, With switch)



●MDC2-X-6, 8, 10 (Single acting, Push type)

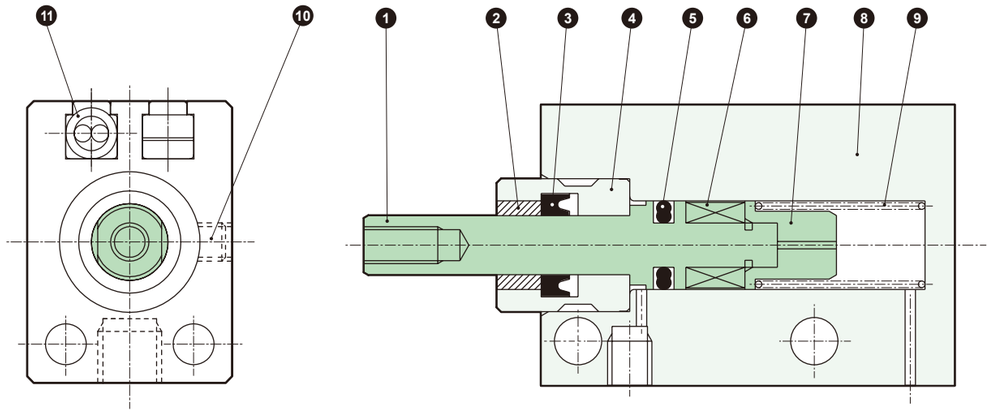


Do not disassemble

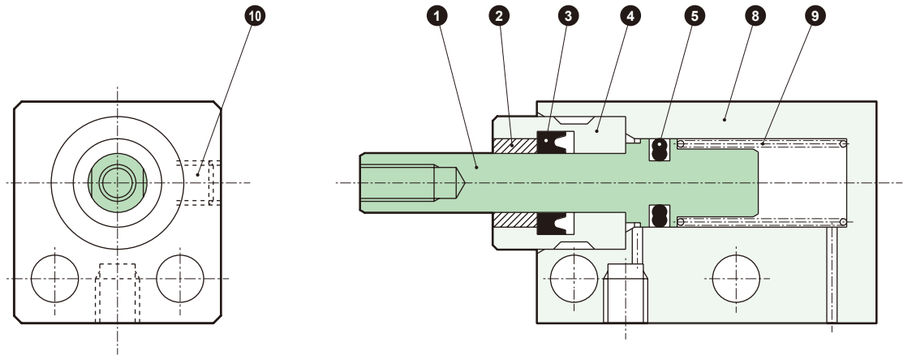
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	E-type retaining ring	Stainless Steel	
2	Bushing	Oil-Impregnated Bearing Alloy		8	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod Metal	Stainless Steel		9	Hexagon socket head set screw	Stainless Steel	
4	Coil Spring	Steel	Electrodeposition Coating	With Switch			
5	Piston Packing	Nitrile Rubber		10	Switch		
6	Magnet	Plastic					

Internal Structure Diagram/Material

●MDC2-YL-6, 8, 10 (Single acting, Retracting type, With switch)



●MDC2-Y-6, 8, 10 (Single acting, Retracting type)



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	Spring Retainer	Stainless Steel	
2	Bushing	Oil-Impregnated Bearing Alloy		8	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod Packing	Nitrile Rubber		9	Coil Spring	Steel	Electrodeposition Coating
4	Rod Metal	Stainless Steel		10	Hexagon socket head set screw	Stainless Steel	
5	Piston Packing	Nitrile Rubber		With Switch			
6	Magnet	Plastic		11	Switch		

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending



Compact Direct Cylinder Double Acting, Ultra Low Speed Type

MDC2-F Series

● Tube bore ø6, ø8, ø10

Circuit Diagram Symbol



● Double acting type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MDC2-F - 6 - 4
- MDC2-F: Model No.
- 6: ❶ Bore size
- 4: ❷ Stroke

With Switch
(Built-in magnet for switch)

MDC2-LF - 6 - 4 - F2V - R
- MDC2-LF: Model No.
- 6: ❶ Bore size
- 4: ❷ Stroke
- F2V: ❸ Switch Model No.
- R: ❹ Number of Switches

❶Bore Size (mm)

Code	Content
6	ø6
8	ø8
10	ø10

❷Stroke (mm)

Stroke	Applicable Tube I.D.		
	ø6	ø8	ø10
4	●	●	●
6	●	●	●
8	●	●	
10			●

Note: Refer to P. 740 for the min. stroke with switch.

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire type	-	24 ± 10%	-	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F0H
3 m F0H 3

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

MDC2-F - · · · · - P7□

Switch Single Unit Model No. Display Method

SW - F0H
- F0H: ❸ Switch Model No.

Specifications

Item	MDC2-F/MDC2-LF (with switch)		
Bore size mm	ø6	ø8	ø10
Actuation method	Double Acting Type		
Operating Fluid	Compressed Air		
Maximum operating pressure MPa	0.7		
Min. Operating Pressure MPa	0.15		0.1
Proof pressure MPa	1.05		
Ambient Temperature °C	5 to 60 *1		
Port Size	M3		M5
Stroke tolerance mm	+0.5 0		
Operating piston speed mm/s	1 to 200		
Cushion	None		
Lubrication	Lubrication Not Possible		
Allowable Absorbed Energy J	This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.		

*1: When using a non-contact switch, use at 40°C or less.

Stroke

Model No.	Bore size (mm)	Standard Stroke (mm)	Minimum stroke with 1 switch (mm)		Minimum stroke with 2 switches (mm)	
			Reed switch	Solid state switch	Reed switch	Solid state switch
MDC2-F MDC2-LF	ø6	4, 6, 8	4	4	6	4 (8)
	ø8	4, 6, 8	4	4	8	4 (8)
	ø10	4, 6, 10	4	4	6	4 (10)

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	-	2.36	3.14	4.71	6.28	7.85	9.42	11.0
ø8	Push	-	7.54	10.1	15.1	20.1	25.1	30.2	35.2
	Pull	-	4.59	6.13	9.19	12.3	15.3	18.4	21.4
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	5.03	7.54	10.1	15.1	20.1	25.1	30.2	35.2

Outline Dimension Drawing

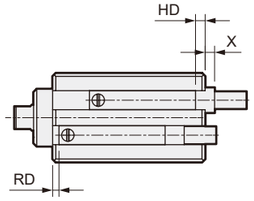
Same as double acting, single rod MDC2 series. See P. 723.

MEMO

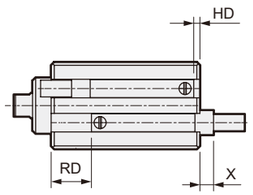
MDC2 Series Outline Dimension Drawing with Switch

●MDC2-L, MDC2-LF, MDC2-X-L, MDC2-Y-L

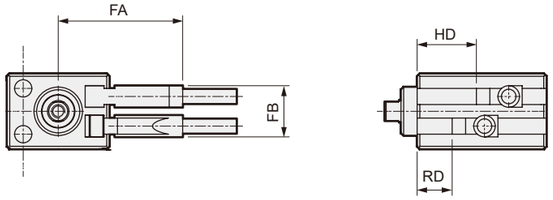
• F0H/V



• F2H/V, F3H/V, F2YH/V, F3YH/V, F3PH/V



• F2S, F3S



Code	MDC2-L, MDC2-LF													
Bore Size (mm)	Stroke	F0			F2, F3			F2Y, F3Y, F3P			F2S, F3S			
		RD	HD	X	RD	HD	X	RD	HD	X	RD	HD	FA	FB
ø6	4	1	-0.5	3.5 / 0.5	6.5	1	4.2 / 1.2	6.5	1	8.7 / 5.7	5.5	9.5	23.1	9.5
	6	1	0	3 / -	6.5	1	2.2 / -	6.5	1	6.7 / 3.7	5.5	11.5		
	8	1	0	3 / -	6.5	1	0.2 / -	6.5	1	4.7 / 1.7	5.5	13.5		
ø8	4	1	-1.5	4.5 / 1.5	6.5	1	4.2 / 1.2	6.5	1	8.7 / 5.7	5.5	9.5	24.6	10
	6	1	0	3 / -	6.5	1	2.2 / -	6.5	1	6.7 / 3.7	5.5	11.5		
	8	1	0	3 / -	6.5	1	0.2 / -	6.5	1	4.7 / 1.7	5.5	13.5		
ø10	4	3.5	0.5	2.5 / -	8	2.5	2.7 / 0.7	8	2.5	7.2 / 4.2	7	11	24.6	10
	6	3.5	0.5	2.5 / -	8	2.5	- / -	8	2.5	5.2 / 2.2	7	13		
	10	3.5	0.5	2.5 / -	8	2.5	- / -	8	2.5	1.2 / -	7	17		

*1: X dimension indicates the protrusion dimension from the end face of the switch body. The upper row shows the X dimension for the straight lead wire type, and the lower row shows the X dimension for the L-shaped lead wire type.
*2: A negative dimension indicates the protrusion dimension from the end face of the main body.
*3: For switch mountability, refer to the model number notation method for each variation.

Code	MDC2-XL													
Bore Size (mm)	Stroke	F0			F2, F3			F2Y, F3Y, F3P			F2S, F3S			
		RD	HD	X	RD	HD	X	RD	HD	X	RD	HD	FA	FB
ø6	4	0	-1	4 / 1	6	0.5	4.7 / 1.7	6	0.5	9.2 / 3.2	5	9	23.1	9.5
	6	1	0	3 / -	7	0.5	2.7 / -	7	0.5	6.2 / 0.2	6	12		
	8	3	0	3 / -	9	0.5	0.7 / -	9	0.5	5.2 / -	8	16		
ø8	4	1	-1.5	4.5 / 1.5	6.5	1	4.2 / 1.2	6.5	1	8.7 / 5.7	5.5	9.5	24.6	10
	6	2	0	3 / -	7.5	1	2.2 / -	7.5	1	6.7 / 3.7	6.5	12.5		
	8	3	0	3 / -	8.5	1	0.2 / -	8.5	1	4.7 / 1.7	7.5	15.5		
ø10	4	4	0	3 / -	8.5	2	3.2 / 0.2	8.5	2	7.7 / 4.7	7.5	11.5	24.6	10
	6	5	0	3 / -	9.5	2	1.2 / -	9.5	2	5.7 / 2.7	8.5	14.5		
	10	7	0	3 / -	11.5	2	- / -	11.5	2	1.7 / -	10.5	20.5		

*1: X dimension indicates the protrusion dimension from the end face of the switch body. The upper row shows the X dimension for the straight lead wire type, and the lower row shows the X dimension for the L-shaped lead wire type.
*2: A negative dimension indicates the protrusion dimension from the end face of the main body.
*3: For switch mountability, refer to the model number notation method for each variation.

MDC2 Series Outline Dimension Drawing with Switch

Code	MDC2-YL													
Bore Size (mm)	Stroke	F0			F2, F3			F2Y, F3Y, F3P			F2S, F3S			
		RD	HD	X	RD	HD	X	RD	HD	X	RD	HD	FA	FB
ø6	4	2.5	1.5	1.5 / -	6.5	4	1.7 / -	6.5	4	5.7 / 3.2	5.5	9.5	23.1	9.5
	6	2.5	2.5	0.5 / -	6.5	5	- / -	6.5	5	2.7 / 0.2	5.5	11.5		
	8	2.5	4.5	- / -	6.5	7	- / -	6.5	7	- / -	5.5	13.5		
ø8	4	2.5	2.5	0.5 / -	6.5	5	0.2 / -	6.5	5	4.7 / 1.7	5.5	9.5	24.6	10
	6	2.5	3.5	- / -	6.5	6	- / -	6.5	6	1.7 / -	5.5	11.5		
	8	2.5	4.5	- / -	6.5	7	- / -	6.5	7	- / -	5.5	13.5		
ø10	4	3.5	1.5	1.5 / -	8	3.5	1.7 / -	8	3.5	6.2 / 3.2	7	11	24.6	10
	6	3.5	2.5	0.5 / -	8	4.5	- / -	8	4.5	3.2 / 0.2	7	13		
	10	3.5	4.5	- / -	8	6.5	- / -	8	6.5	- / -	7	17		

*1: X dimension indicates the protrusion dimension from the end face of the switch body. The upper row shows the X dimension for the straight lead wire type, and the lower row shows the X dimension for the L-shaped lead wire type.
*2: For switch mountability, refer to the model number display method for each variation.

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

Individual Precautions: Small direct mounting cylinder MDC2 Series

During Design/Selection

1. Common

Caution

■ When using MDC2 with a contact switch, the cylinder cannot be mounted on a magnetic material (such as an iron plate).

■ Use MDC2 with a non-contact switch at an ambient temperature of 40°C or less. This will cause switch detection failure.

2. Single acting type MDC2-X, Y

Caution

■ Do not leave single-acting cylinders pressurized. If left pressurized, the piston rod may not return by spring force when the pressure is released.

■ A breather hole is provided on the main body, so be careful not to block it during installation.
● This will cause malfunction.

3. Low speed type MDC2-F

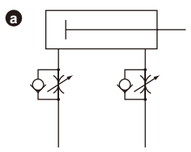
Caution

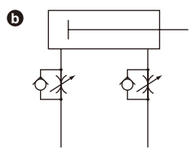
■ Use without lubrication.
● Lubrication may change the characteristics.

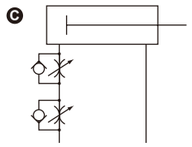
■ Install the speed controller near the cylinder.
● If installed far from the cylinder, the speed will become unstable.
● Use SC-M3/M5-F, SC3W, SCD-M3/M5-F series speed controllers.

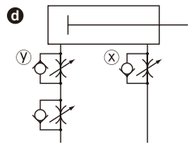
■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
● Use with a load factor of 50% or less.

■ Speed control is stable with a meter-out circuit.
● When driving a single rod cylinder at fine speed in the PUSH direction, if the load resistance is small, a lunging phenomenon may occur at the start of operation. As countermeasures, use circuits ⓑ, ⓒ or ⓓ. In addition, the ⓓ circuit is the most stable.





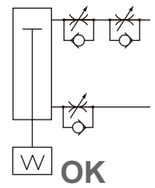


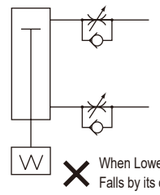


ⓓ Speed adjustment method for PUSH operation of the circuit:
1. Set the speed with the speed controller x.
2. Restrict the speed with the speed controller y until there is no popping out.
3. Reconfirmation of speed

(*1) Comparing ⓑⓒⓓ, the ⓓ circuit offers the most stable operation.

(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.





(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)
Lurching occurs in the following cases:
• Thrust > Resistance
*Resistance: Thrust due to residual pressure on exhaust side (For creep speed type, intake pressure = residual pressure) + { For horizontal use: Frictional force due to load / For vertical use: Dead weight of the load

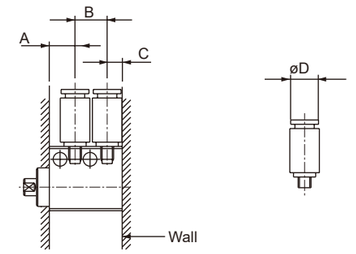
■ Avoid use in locations with vibration.
● Operation becomes unstable due to the influence of vibration.

During Use

1. Common

Caution

■ There are restrictions on the piping fittings that can be used, so please refer to the table below.



Item		Port position dimension (mm)				With wall			Without wall		
I.D. (mm)	Port Size	Stroke	A	B	C	Usable Fittings	Fitting outer diameter øD	Unusable Fittings	Usable Fittings	Fitting outer diameter øD	Unusable Fittings
ø4	M3	3	6.5	7	3.5	GWS3-M3-S FTS4-M3	ø7 or less	GWS4-M3-S SC3W-M3-3 SC3W-M3-4 SC3U-M3-3 SC3U-M3-4	GWS3-M3-S FTS4-M3	ø7 or less	GWS4-M3-S SC3W-M3-3 SC3W-M3-4 SC3U-M3-3 SC3U-M3-4
		6	6.5	10	3.5				GWS3-M3-S GWS4-M3-S FTS4-M3 SC3W-M3-□ SC3U-M3-□	ø10 or less	
ø6	M3	4	6	7.5	3.5	GWS3-M3-S FTS4-M3	ø7 or less	GWS4-M3-S SC3W-M3-3 SC3W-M3-4 SC3U-M3-3 SC3U-M3-4	GWS3-M3-S SC3W-M3-□ SC3U-M3-□	ø7.5 or less	GWS4-M3-S
		6	6	9.5	3.5				GWS3-M3-S GWS4-M3-S FTS4-M3 SC3W-M3-□ SC3U-M3-□	ø9.5 or less	
		8	6	11.5	3.5				↑	ø11.5 or less	
ø8	M3	4	6	7.5	3.5	GWS3-M3-S FTS4-M3	ø7 or less	GWS4-M3-S SC3W-M3-3 SC3W-M3-4 SC3U-M3-3 SC3U-M3-4	GWS3-M3-S SC3W-M3-□ SC3U-M3-□	ø7.5 or less	GWS4-M3-S
		6	6	9.5	3.5				GWS3-M3-S GWS4-M3-S FTS4-M3 SC3W-M3-□ SC3U-M3-□	ø9.5 or less	
		8	6	11.5	3.5				↑	ø11.5 or less	
ø10	M5	4	7	10	5	GWS□-M5-S SC3W-M5-□ SC3U-M5-□ GWS4-M5-S FTS4-M5 FTS6-M5	ø10 or less	GWS□-M5 GWS6-M5-S	GWS□-M5-S SC3W-M5-□ SC3U-M5-□ GWS4-M5-S FTS4-M5 FTS6-M5	ø10 or less	GWS□-M5 GWS6-M5-S
		6	7	12	5				GWS□-M5-S SC3W-M5-□ SC3U-M5-□ GWS4-M5-S GWS6-M5-S GWS4-M5 FTS4-M5 FTS6-M5	ø12 or less	GWS6-M5
		10	7	16	5				GWS□-M5-S SC3W-M5-□ SC3U-M5-□ GWS4-M5-S GWS6-M5-S GWS4-M5 GWS6-M5 FTS4-M5 FTS6-M5	ø14 or less	

*Port position dimensions are for standard models without switches.

■ This cylinder is a non-disassembly type, so do not apply excessive force to the rod metal or cylinder body.

2. Low speed type MDC2-F

⚠ Caution

■ Adjust alignment, etc., so that no lateral load is applied to the cylinder.
Also, adjust and install so that there is no twisting with respect to the sliding guide.

- Fluctuations in load or resistance will make operation unstable.
- Guides with a large difference between static and dynamic friction will have unstable operation.

MEMO

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual .

Space saving structure

SMG

Compact cylinder

ø6, ø10, ø16
ø20, ø25, ø32



CONTENTS

Product Introduction	750
Series System Table	752
Option/Variation Combination Availability Table	753
● Double acting, Single rod type (SMG)	754
● Single acting, Push type (SMG-X)	762
● Single acting, Retracting type (SMG-Y)	762
● Double acting, Low speed type (SMG-F)	770
● Double acting, Non-rotating type (SMG-M)	774
External Dimensions Diagram with Switch	780
⚠ Precautions for Use	782

Direct 5-sided mounting

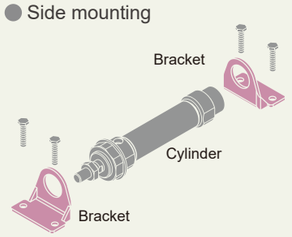
Lightweight, space-saving cylinder with integrated mount block. Direct mounting from 5 sides is possible, greatly increasing equipment design freedom.



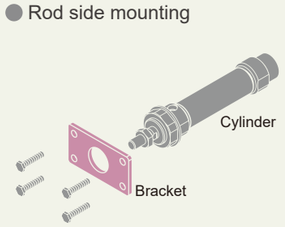
Increased design freedom with direct mounting from 5 sides

General cylinder Bracket required for mounting

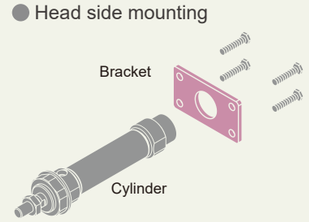
● Side mounting



● Rod side mounting



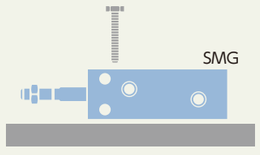
● Head side mounting



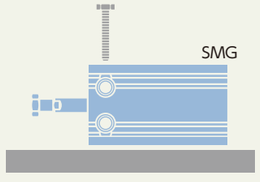
SMG No bracket required, direct mounting

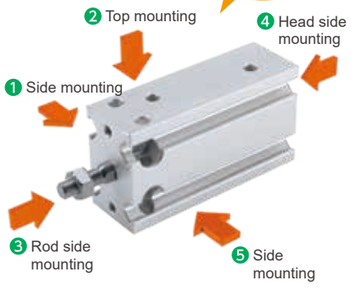
Direct 5-sided mounting

❶ Side mounting

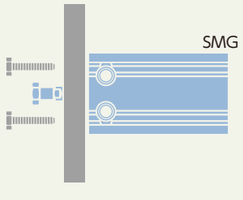


❷ Top mounting

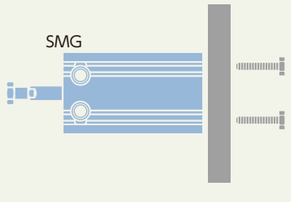




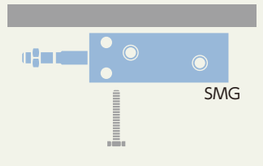
❸ Rod side mounting



❹ Head side mounting



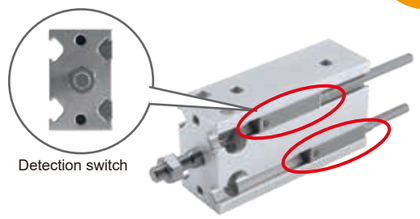
❺ Side mounting



Detection switch is neat

Even with a detection switch included, there is almost no protruding space.

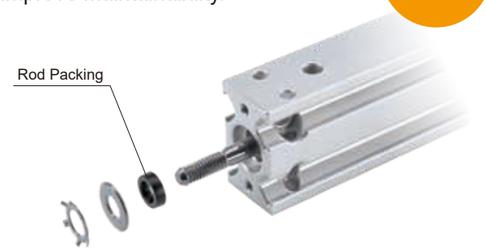
Neat and flat



Improved maintainability

Adopted a new mounting method to improve maintainability.

Easy maintenance



Variation

Double Acting/Single Rod Type

General double-acting operation

Single Acting, Push Type

Type where the piston rod is pushed out by air and returned by a spring

Single Acting, Retracting Type

Type where the piston rod is retracted by air and pushed out by a spring



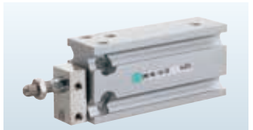
Low speed type

Smooth low-speed operation possible from 1 mm/sec



Non-Rotating Type

Type with rod non-rotation feature



SMG Series Product Lineup

Model variations		Bore size (mm)	Standard stroke (mm)
Double acting/ Single rod With Switch	SMG SMG-L	ø6/ø10/ø16	5 10 15 20 25 30 40 50 60 70 80 90 100
		ø20/ø25/ø32	
Single acting/ Push type With Switch	SMG-X SMG-XL	ø6/ø10/ø16	5 10 15
		ø20/ø25/ø32	
Single acting/ Pull type With Switch	SMG-Y SMG-YL	ø6/ø10/ø16	5 10 15
		ø20/ø25/ø32	
Double acting/ Fine speed With Switch	SMG-F SMG-LF	ø6/ø10/ø16	5 10 15 20 25 30
		ø20/ø25/ø32	5 10 15 20 25 30 40 50
Double acting/ rotation-stop With Switch	SMG-M SMG-ML	ø6/ø10/ø16	5 10 15 20 25 30 40 50 60
		ø20/ø25/ø32	5 10 15 20 25 30 40 50 60 70 80 90 100

System Table

Compact cylinder SMG Series

●: Standard, ◎: Option, : Not manufacturable

Variation	Model No. / Circuit Diagram Symbol	Bore size (mm)	Standard Stroke (mm) 5	10	15	20	25	30	40	50	60	70	80	90	100	Min. Stroke (mm) (*1)	Maximum Stroke (mm)	Intermediate stroke (per mm)	Switch	Page
Double Acting, Single Rod Type with Switch	SMG SMG-L	ø6/ø10/ø16	●	●	●	●	●	●	●	●	●					5	60	5	◎	754
		ø20, ø25, ø32	●	●	●	●	●	●	●	●	●	●	●	●	●		100			
Single Acting, Push Type with Switch	SMG-X SMG-XL	ø6/ø10/ø16	●	●	●											5	15	–	◎	762
		ø20, ø25, ø32	●	●	●												15			
Single Acting, Retracting Type with Switch	SMG-Y SMG-YL	ø6/ø10/ø16	●	●	●											5	15	–	◎	762
		ø20, ø25, ø32	●	●	●												15			
Double Acting, Creep Speed Type with Switch	SMG-F SMG-LF	ø6/ø10/ø16	●	●	●	●	●	●								5	30	5	◎	770
		ø20, ø25, ø32	●	●	●	●	●	●	●	●							50			
Double Acting, Non-rotating Type with Switch	SMG-M SMG-ML	ø6/ø10/ø16	●	●	●	●	●	●	●	●	●					5	60	5	◎	774
		ø20, ø25, ø32	●	●	●	●	●	●	●	●	●	●	●	●	●		100			

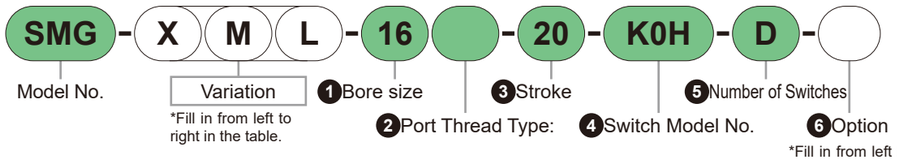
Note: Refer to P. 756, 764, 772 and 776 for the min. stroke length with switch.

Combination Availability Table for Variations and Option Items

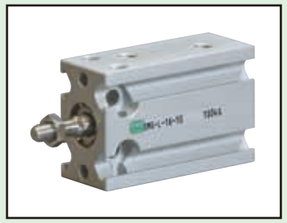
Category		Category	Variation: Double Acting Basic Type	Single Acting, Push Type	Single Acting, Retracting Type	Non-Rotating Type	With Cylinder Switch	Low speed type	Piping thread: NPT	G
		Code	None	X	Y	M	L	F	N	G
Variation	Double Acting Basic Type	Blank				◎	◎	◎	○	○
	Single Acting, Push Type	X			×	○	◎	×	○	○
	Single Acting, Retracting Type	Y				○	◎	×	○	○
	Non-Rotating Type	M					◎	○	○	○
	With Cylinder Switch	L						◎	○	○
	Low speed type	F							○	○
Piping thread	NPT	N								×
	G	G								
Accessories	Cylinder Switch	Separately Shown	◎	◎	◎	◎	◎	◎	◎	◎

◎Mark: Option
○Mark: Custom Products
△Mark: Manufacturable depending on conditions (Please consult)
×Mark: Not manufacturable

[Model Number Notation Example]



Model No.: Compact cylinder
● Variation Single acting/push/rotation-stop/with switch
1 Bore size: ø16 mm
2 Port Thread Type: Rc Thread
3 Stroke: 20mm
4 Switch Model No. Reed K0H switch, lead wire 1 m
5 Number of Switches: With 2 pcs.
6 Option: None

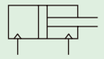


Compact Cylinder Double Acting, Single Rod Type

SMG Series

● Tube bore: ø6, ø10, ø16, ø20, ø25, ø32

Circuit Diagram Symbol



Double Acting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SMG - 32 - 25
1 2 3 4

With Switch
(Built-in magnet for switch)

SMG-L - 32 - 25 - K2H - R

1 Model No.
2 Bore size
3 Piping thread type
4 Stroke
5 Switch Model No.
6 Number of Switches

1 Model No.

Code	Content
SMG	Double Acting Type
SMG-L	Double-acting type, With switch

2 Bore size (mm)

Code	Content
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32

3 Piping thread type

Code	Content
Blank	M5 (ø6 to ø25)
	Rc thread (ø32)
NN	NPT thread (ø32 only) Custom order
GN	G thread (ø32 only) Custom order

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø6 to ø16	5 to 60	Every 5 mm (*2)
ø20 to ø32	5 to 100	

*1: For the minimum stroke of the standard stroke with switch, see P. 756.
*2: The overall length dimension is the same as the standard stroke above it.

5 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 20 *2	K2H□	K2V□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3H□	K3V□	
		3-wire (PNP)	—		—		K3PH□	K3PV□	
	2-Color	2-wire	—	10 to 30	—	5 to 20	K2YH□	K2YV□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3YH□	K3YV□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	K0H□	K0V□	
	No Indicator LED			5/12/24	20 or less	50 or less	K5H□	K5V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m K0H
3 m K0H 3
5 m K0H 5

6 Number of Switches

Code	Content
R	With 1 on Rod Side
H	With 1 on Head Side
D	With 2 pcs

*For combinations of variations and options, see P. 753.

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

SMG - · · · · - P7□

SMG - · · · · - P5□

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Structure usable in secondary battery manufacturing processes

SMG - · · · · - P4□

*Please contact us for details.

High Durability Components HP Series (Catalog No. CC-1421AA)

● Long-life actuator that can contribute to productivity improvement with stable operation

SMG - · · · · - HP□

Switch Single Unit Model No. Display Method

SW - K2H
5

5 Switch Model No.

Specifications

Item		SMG SMG-L (with switch)					
Bore size	mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation method		Double Acting Type					
Operating Fluid		Compressed Air					
Maximum Operating Pressure	MPa	0.7					
Min. operating pressure	MPa	0.12	0.06		0.05		
Proof Pressure	MPa	1.05					
Ambient Temperature	°C	-10 to 60 (however, no freezing)					
Port Size		M5					Rc1/8
Stroke tolerance	mm	+1.5 0					
Operating piston speed	mm/s	50 to 500					
Cushion		With Rubber Cushion					
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable absorbed energy	J	0.012	0.036	0.1	0.1	0.19	0.5

Stroke

Bore Size (mm)	Standard Stroke (mm)	Min. Stroke (mm)
ø6	5, 10, 15, 20, 25, 30, 40, 50, 60	5
ø10		
ø16		
ø20	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100	
ø25		
ø32		

Note: Intermediate strokes can be manufactured in 5 mm increments. However, the overall length dimension will be the same as the dimension of the standard stroke above it.

Minimum Stroke with Switch

Tube Bore size	1-color indication type		2-color indicator type	
	K□H	K□V	K□YH	K□YV
ø6	5		5	
ø10				
ø16				
ø20				
ø25				
ø32				

Cylinder Weight

(Unit: g)

Model No. / Bore size	Product Weight when stroke S = 0 mm		Per S=5 mm Added Weight
	SMG Double Acting Type	SMG-L Double-acting type, With switch	
ø6	18	18	3
ø10	27	27	3
ø16	41	56	6
ø20	87	115	11
ø25	164	208	17
ø32	267	335	26

(Example) Product Weight

SMG-L-16-10-K2H-D

- Product Weight at stroke = 0 mm: 56 g
- Added weight at S = 10 mm: 6 g × 10/5 = 12 g
- Weight of cylinder switch (2 pcs.): 18 g × 2 = 36 g
- Product Weight 56 g + 12 g + 36 g = 104 g

Theoretical Thrust Table

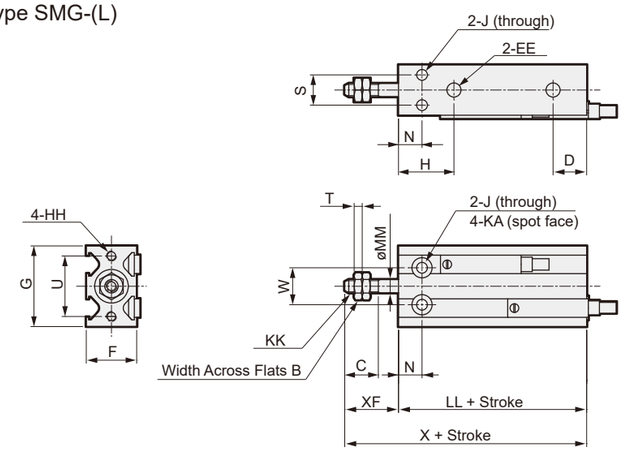
(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2
	Pull	17.3	25.9	34.6	51.8	69.1	86.4	1.04×10^2	1.21×10^2
ø20	Push	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2
	Pull	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2
ø25	Push	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2
	Pull	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2
	Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2

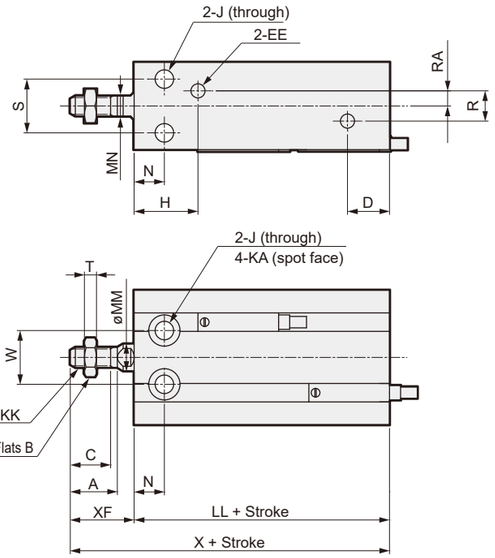
Outline Dimension Drawing

● Double acting type SMG-(L)

ø6, 10



ø16, ø20, ø25, ø32



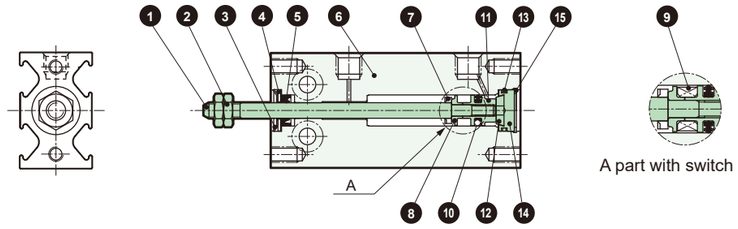
Code / Bore size	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	R	RA	S
ø6	–	5.5	7	10	M5	13	22	15	M3 Depth 5	3.2	6 Depth 4.8	M3	3	–	7	–	–	7
ø10	–	7	10	10	M5	15	24	16.5	M3 Depth 5	3.2	6 Depth 5	M4	4	–	7	–	–	9
ø16	12.5	8	11	11.5	M5	20	32	(*1) 16.5	M4 Depth 6	4.5	7.5 Depth 6.5	M5	6	5	7	4	2	12
ø20	14	10	12	12.5	M5	26	40	19	M5 Depth 8	5.5	9 Depth 8	M6	8	6	9	9	4.5	16
ø25	18	13	15.5	13	M5	32	50	21.5	M5 Depth 8	5.5	9 Depth 9	M8	10	8	10	9	4.5	20
ø32	22	17	19.5	12.5	Rc1/8	40	62	23	M6 Depth 9	6.6	11 Depth 11.5	M10 × 1.25	12	10	11	13.5	4.5	24

Code / Bore size	T	U	W	XF	LL		X	
					Without Switch	With switch	Without Switch	With switch
ø6	1.8	17	10	13	33	33	46	46
ø10	2.4	18	11	16	36	36	52	52
ø16	3.2	25	14	16	30	40	46	56
ø20	3.6	30	16	19	36	46	55	65
ø25	5	38	20	23	40	50	63	73
ø32	6	48	24	27	42	52	69	79

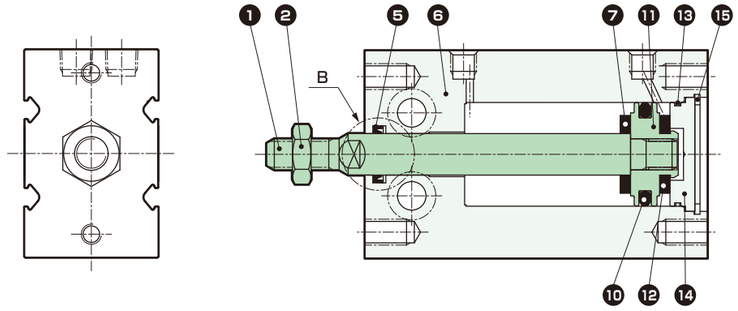
*1: For a 5-stroke model without a switch, the H dimension for bore size ø16 is 14.5.
*2: When calculating LL + stroke and X + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. (Example: If the custom stroke is 35mm, apply the standard stroke 40mm.)
***3: For dimensions of models with switches, see P. 780 and 781.**

Internal Structure Diagram/Material

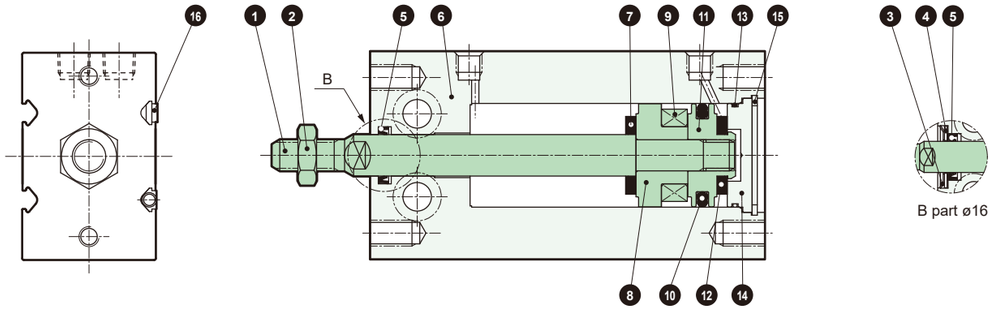
●ø6, ø10 (Double acting type)



●ø16 to 32 (Double acting type)



●ø16 to 32 (Double acting type, With switch)

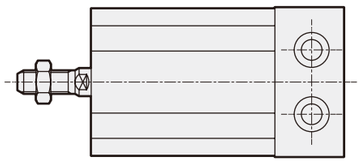
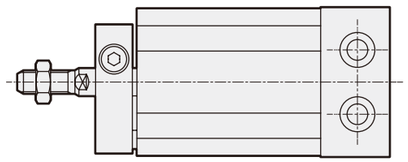
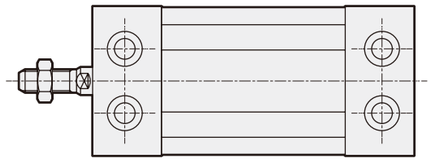


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	ø20,25,32: Industrial hard chrome plating	10	Piston Packing	Nitrile Rubber	
2	Rod Nut	Steel	Nickel Plating	11	Piston	Aluminum Alloy	Chromate
3	CR type retaining ring	Stainless Steel		12	Cushion rubber H	Urethane Rubber	
4	Cap	Stainless Steel		13	Cover gasket	Nitrile Rubber	
5	Rod Packing	Nitrile Rubber		14	Cover	Aluminum Alloy	Chromate
6	Cylinder Body	Aluminum Alloy	Hard Anodized	15	C-type retaining ring	Steel	Zinc phosphate
7	Cushion rubber R	Urethane Rubber		With Switch			
8	Spacer	Aluminum Alloy	Chromate	16	Switch		
9	Magnet	–					

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

Information on Compact Cylinder SMD2 Compatible Models

As of October 2015, the SMD2 series has been remodeled to the SMG series. Since SMG does not have some of the mounting types that were available for SMD2, compatible models have been prepared to support these mounting types. (Custom order)
If you are currently using SMD2 and require these mounting types, please consult us.

Mounting type	SMD2 Dimension Compatible Model	
	Double acting, Single acting, Fine speed	Non-Rotating
DA	Compatible with SMG standard products. Mounting compatible with SMD2. However, the overall length will be shorter.	
DB		
DC		

■ Other Information

① Regarding specifications

Please note that for SMD2 dimension-compatible models, there are changes to the spring load values for single-acting push type and single-acting retracting type. There is no effect on operation.

② Regarding dimensions

The port position will be partially changed.

*Please check with us for details.

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

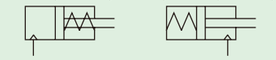


Compact Cylinder Single Acting, Push Type
Single Acting, Retracting Type

SMG$^{X}_{Y}$ Series

● Tube bore: ø6, ø10, ø16, ø20, ø25, ø32

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SMG-X – 32 – [ ] – 15
① ② ③ ④

With Switch
(Built-in magnet for switch)

SMG-XL – 32 – [ ] – 15 – K2H – R

①Model No. ②Bore size ③Piping thread type ④Stroke ⑤Switch Model No. ⑥Number of Switches

①Model No.

Code	Content
SMG-X	Single Acting, Push Type
SMG-XL	Single acting push type, With switch
SMG-Y	Single Acting, Retracting Type
SMG-YL	Single acting retracting type, With switch

②Bore size (mm)

Code	Content
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32

③Piping thread type

Code	Content
Blank	M5 (ø6 to ø25)
	Rc thread (ø32)
NN	NPT thread (ø32 only) Custom order
GN	G thread (ø32 only) Custom order

④Stroke (mm)

Bore size	Standard Stroke
ø6 to ø32	5, 10, 15

Note: Refer to P. 764 for min. stroke with switch.

⑤Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 20 *2	K2H□	K2V□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3H□	K3V□	
		3-wire (PNP)	—		—		K3PH□	K3PV□	
	2-Color	2-wire	—	10 to 30	—	5 to 20	K2YH□	K2YV□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3YH□	K3YV□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	K0H□	K0V□	
	No Indicator LED			5/12/24	20 or less	50 or less	K5H□	K5V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m K0H
3 m K0H 3
5 m K0H 5

⑥Number of Switches

Code	Content
R	With 1 on Rod Side
H	With 1 on Head Side
D	With 2 pcs

Switch Single Unit Model No. Display Method

SW – K2H
⑤Switch Model No.

*For combinations of variations and options, see P. 753.

Specifications

Item		SMG-X, SMG-Y SMG-XL, SMG-YL (with switch)					
Bore size	mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation method	SMG-X (L)	Single Acting, Push Type					
	SMG-Y (L)	Single Acting, Retracting Type					
Operating Fluid		Compressed Air					
Maximum Operating Pressure	MPa	0.7					
Min. operating pressure MPa	SMG-X (L)	0.2	0.15				0.13
	SMG-Y (L)						
Proof Pressure	MPa	1.05					
Ambient Temperature	°C	-10 to 60 (however, no freezing)					
Port Size		M5					Rc1/8
Stroke tolerance	mm	+1.5 0					
Operating piston speed	mm/s	50 to 500					
Cushion		With rubber cushion *2					
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable absorbed energy J		0.012	0.036	0.05	0.1	0.19	0.5

*1: Do not leave single-acting cylinders pressurized. If left pressurized, the piston rod may not return by spring force when the pressure is released.
*2: ø6 comes with a rubber cushion on one side.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)
ø6	5, 10, 15	15	5
ø10			
ø16			
ø20			
ø25			
ø32			

Minimum Stroke with Switch

Model	Bore size	1-color indication type		2-color indicator type	
		K□H	K□V	K□YH	K□YV
SMG-XL SMG-YL	ø6	5		5	
	ø10				
	ø16				
	ø20				
	ø25				
	ø32				

SMG-X/SMG-Y Spring load

(Unit: N)

Bore size (mm)	Stroke (mm)	Stroke 0 o'clock	Full stroke During operation	Bore size (mm)	Stroke (mm)	Stroke 0 o'clock	At Full Stroke Operation
ø6	5	3.1	3.8	ø20	5	14	19
	10	2.3			10	8.8	
	15	1.6			15		
ø10	5	5.5	8.0	ø25	5	19	25
	10	3.0			10	14	
	15				15		
ø16	5	11	16	ø32	5	25	30
	10	5.9			10	21	
	15				15		

SMG-X Cylinder weight

(Unit: g)

Model No. / Bore size	5		10		15	
	Without Switch	With switch	Without Switch	With switch	Without Switch	With switch
ø6	21	21	23	24	26	26
ø10	31	31	34	34	41	41
ø16	47	62	53	68	66	81
ø20	98	125	109	135	131	158
ø25	180	223	196	240	233	277
ø32	293	361	319	386	376	444

SMG-Y Cylinder weight

(Unit: g)

Model No. / Bore size	5		10		15	
	Without Switch	With switch	Without Switch	With switch	Without Switch	With switch
ø6	20	21	23	23	26	26
ø10	30	30	33	33	39	40
ø16	61	62	67	68	79	80
ø20	98	124	108	135	130	157
ø25	180	223	196	240	231	275
ø32	291	359	317	385	372	439

Theoretical Thrust Table

●SMG-X

(Unit: N)

Bore size (mm)	Operating Pressure MPa					
	0.2	0.3	0.4	0.5	0.6	0.7
ø6	-	4.68	7.51	10.3	13.2	16.0
ø10	7.71	15.6	23.4	31.3	39.1	47.0
ø16	24.2	44.3	64.4	84.5	1.05×10^2	1.25×10^2
ø20	43.8	75.2	1.07×10^2	1.38×10^2	1.69×10^2	2.01×10^2
ø25	73.2	1.22×10^2	1.71×10^2	2.20×10^2	2.70×10^2	3.19×10^2
ø32	1.31×10^2	2.11×10^2	2.92×10^2	3.72×10^2	4.53×10^2	5.33×10^2

Note: The load above indicates thrust excluding the spring force at the push end.

●SMG-Y

(Unit: N)

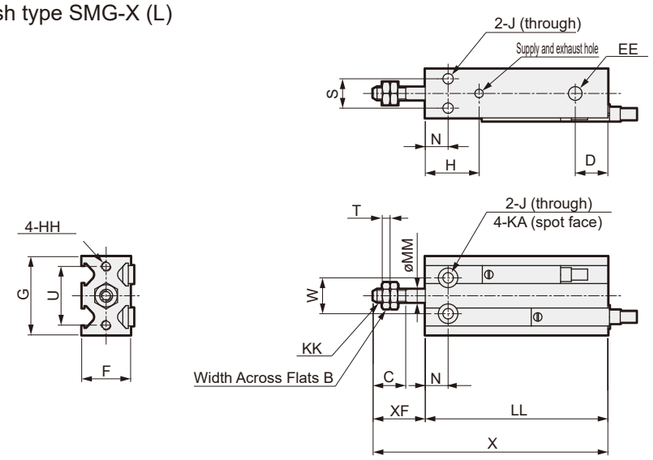
Bore size (mm)	Operating Pressure MPa					
	0.2	0.3	0.4	0.5	0.6	0.7
ø6	-	2.56	4.68	6.80	8.92	11.0
ø10	5.19	11.8	18.4	25.0	31.6	38.2
ø16	18.6	35.8	53.1	70.4	87.7	1.05×10^2
ø20	33.8	60.2	86.6	1.13×10^2	1.39×10^2	1.66×10^2
ø25	57.5	98.7	1.40×10^2	1.81×10^2	2.22×10^2	2.64×10^2
ø32	1.08×10^2	1.77×10^2	2.46×10^2	3.16×10^2	3.85×10^2	4.54×10^2

Note: The load above indicates thrust excluding the spring force at the pull end.

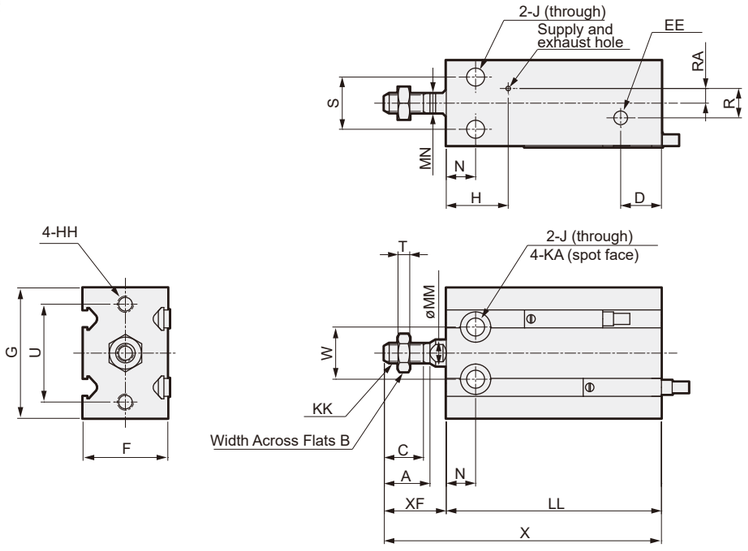
Outline Dimension Drawing

● Single acting push type SMG-X (L)

ø6, 10



ø16, ø20, ø25, ø32



Code / Bore size	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N
ø6	–	5.5	7	10	M5	13	22	15	M3 Depth 5	3.2	6 Depth 4.8	M3	3	–	7
ø10	–	7	10	10	M5	15	24	16.5	M3 Depth 5	3.2	6 Depth 5	M4	4	–	7
ø16	12.5	8	11	11.5	M5	20	32	16.5	M4 Depth 6	4.5	7.5 Depth 6.5	M5	6	5	7
ø20	14	10	12	12.5	M5	26	40	19	M5 Depth 8	5.5	9 Depth 8	M6	8	6	9
ø25	18	13	15.5	13	M5	32	50	21.5	M5 Depth 8	5.5	9 Depth 9	M8	10	8	10
ø32	22	17	19.5	12.5	Rc1/8	40	62	23	M6 Depth 9	6.6	11 Depth 11.5	M10 × 1.25	12	10	11

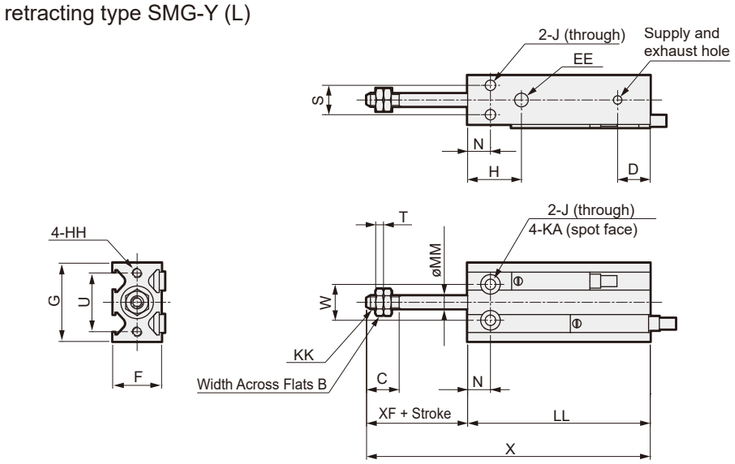
Code / Bore size	R	RA	S	T	U	W	XF	LL						X					
								Without Switch			With switch			Without Switch			With switch		
								5st.	10st.	15st.	5st.	10st.	15st.	5st.	10st.	15st.	5st.	10st.	15st.
ø6	–	–	7	1.8	17	10	13	38	43	48	38	43	48	51	56	61	51	56	61
ø10	–	–	9	2.4	18	11	16	41	46	56	41	46	56	57	62	72	57	62	72
ø16	4	2	12	3.2	25	14	16	35	40	50	45	50	60	51	56	66	61	66	76
ø20	9	4.5	16	3.6	30	16	19	41	46	56	51	56	66	60	65	75	70	75	85
ø25	9	4.5	20	5	38	20	23	45	50	60	55	60	70	68	73	83	78	83	93
ø32	13.5	4.5	24	6	48	24	27	47	52	62	57	62	72	74	79	89	84	89	99

Note: Refer to P. 780 and 781 for dimensions with each switch.

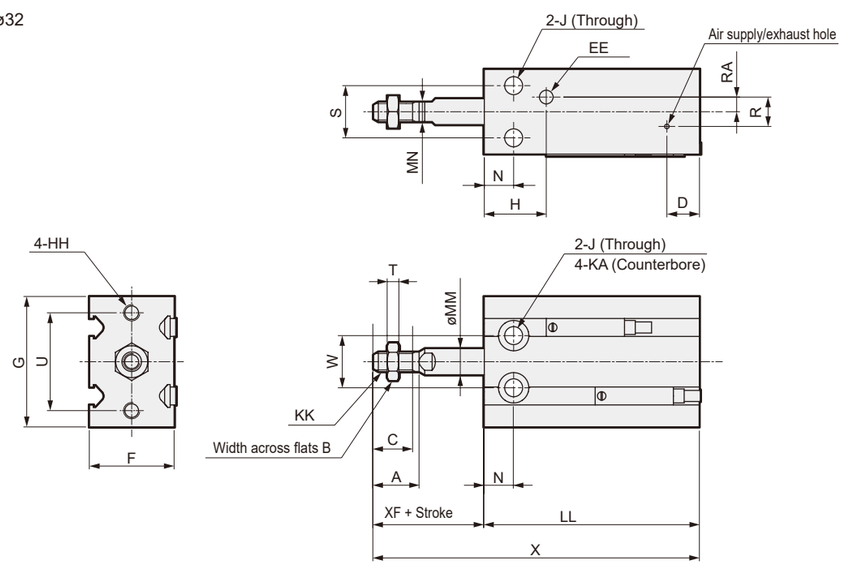
Outline Dimension Drawing

● Single acting retracting type SMG-Y (L)

ø6, 10



ø16, ø20, ø25, ø32



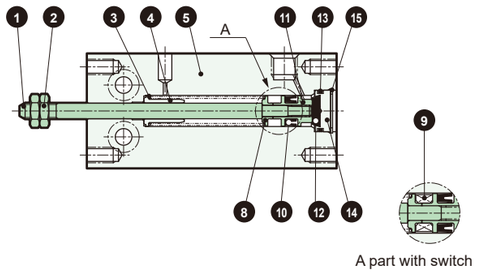
Code / Bore size	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N
ø6	–	5.5	7	10	M5	13	22	15	M3 Depth 5	3.2	6 Depth 4.8	M3	3	–	7
ø10	–	7	10	10	M5	15	24	16.5	M3 Depth 5	3.2	6 Depth 5	M4	4	–	7
ø16	12.5	8	11	11.5	M5	20	32	16.5	M4 Depth 6	4.5	7.5 Depth 6.5	M5	6	5	7
ø20	14	10	12	12.5	M5	26	40	19	M5 Depth 8	5.5	9 Depth 8	M6	8	6	9
ø25	18	13	15.5	13	M5	32	50	21.5	M5 Depth 8	5.5	9 Depth 9	M8	10	8	10
ø32	22	17	19.5	12.5	Rc1/8	40	62	23	M6 Depth 9	6.6	11 Depth 11.5	M10 × 1.25	12	10	11

Code / Bore size	R	RA	S	T	U	W	XF	LL						X					
								Without Switch			With switch			Without Switch			With switch		
								5st.	10st.	15st.	5st.	10st.	15st.	5st.	10st.	15st.	5st.	10st.	15st.
ø6	–	–	7	1.8	17	10	13	38	43	48	38	43	48	56	66	76	56	66	76
ø10	–	–	9	2.4	18	11	16	41	46	56	41	46	56	62	72	87	62	72	87
ø16	4	2	12	3.2	25	14	16	45	50	60	45	50	60	66	76	91	66	76	91
ø20	9	4.5	16	3.6	30	16	19	41	46	56	51	56	66	65	75	90	75	85	100
ø25	9	4.5	20	5	38	20	23	45	50	60	55	60	70	73	83	98	83	93	108
ø32	13.5	4.5	24	6	48	24	27	47	52	62	57	62	72	79	89	104	89	99	114

Note: Refer to P. 780 and 781 for dimensions with each switch.

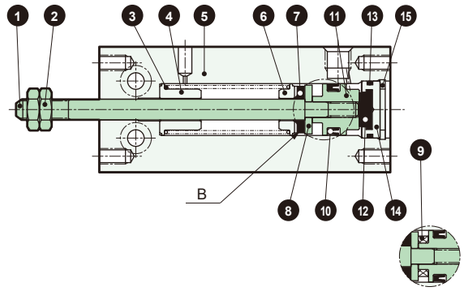
Internal Structure Diagram/Material

●ø6 (Single acting push type)



A part with switch

●ø10 (Single acting push type)



B part with switch

●ø16 to 32 (Single acting push type)

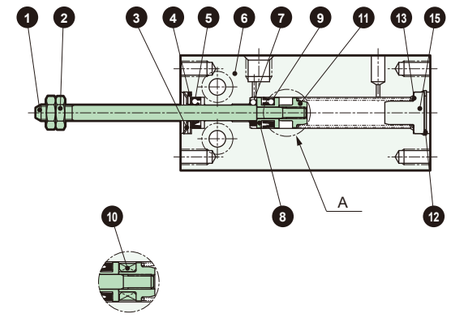
●ø16 to 32 (Single acting push type, With switch)

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	ø20,25,32: Industrial hard chrome plating	9	Magnet	–	
2	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
3	Coil Spring	Piano Wire	Electrodeposition Coating	11	Piston	Aluminum Alloy	Chromate
4	Spring Retainer	Aluminum Alloy		12	Cushion rubber H	Urethane Rubber	
5	Cylinder Body	Aluminum Alloy	Hard Anodized	13	Cover gasket	Nitrile Rubber	
6	Spring Retainer	Aluminum Alloy		14	Cover	Aluminum Alloy	Chromate
7	Cushion rubber R	Urethane Rubber		15	C-type retaining ring	Steel	Zinc phosphate
8	Spacer	Aluminum Alloy	Chromate				

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .

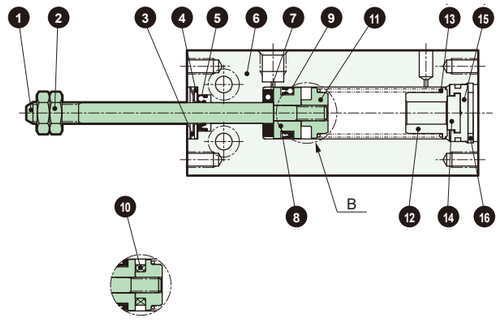
Internal Structure Diagram/Material

●ø6 (Single acting retracting type)



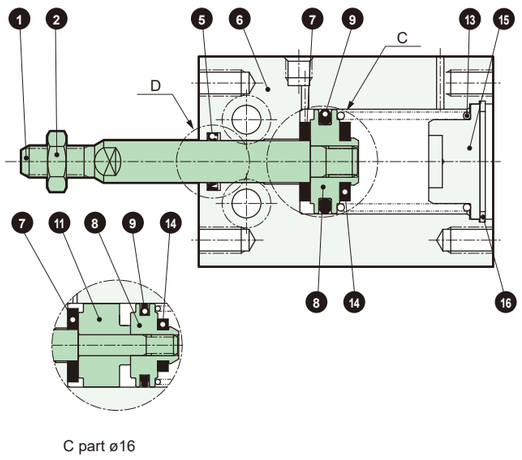
A part with switch

●ø10 (Single acting retracting type)



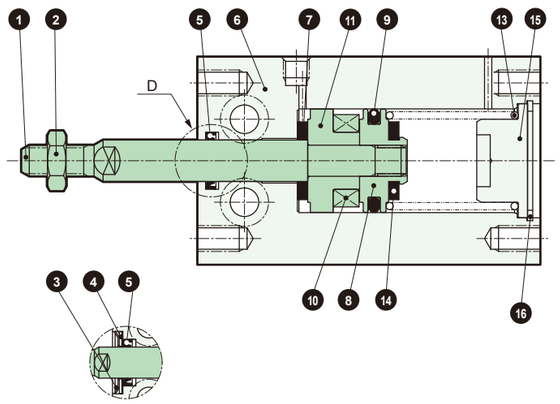
B part with switch

●ø16 to 32 (Single acting retracting type)



C part ø16

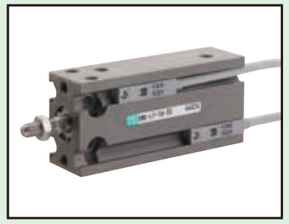
●ø16 to 32 (Single acting retracting type, With switch)



D part ø16

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	ø20,25,32: Industrial hard chrome plating	9	Piston Packing	Nitrile Rubber	
2	Rod Nut	Steel	Nickel Plating	10	Magnet		
3	CR type retaining ring	Stainless Steel		11	Spacer	Aluminum Alloy	Chromate
4	Cap	Stainless Steel		12	Spring Retainer	Aluminum Alloy	
5	Rod Packing	Nitrile Rubber		13	Coil Spring	Piano Wire	Electrodeposition Coating
6	Cylinder Body	Aluminum Alloy	Hard Anodized	14	Cushion rubber H	Urethane Rubber	
7	Cushion rubber R	Urethane Rubber		15	Cover	Aluminum Alloy	Chromate
8	Piston	Aluminum Alloy	Chromate	16	C-type retaining ring	Steel	Zinc phosphate

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

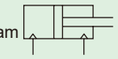


Compact cylinder Double acting/fine speed

SMG-F Series

● Tube bore: ø6, ø10, ø16, ø20, ø25, ø32

Circuit Diagram Symbol



Double Acting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SMG-F – 32 – □ – 25
① ② ③ ④

With Switch
(Built-in magnet for switch)

SMG-LF – 32 – □ – 25 – K2H – R

① Model No. ② Bore size ③ Piping thread type ④ Stroke ⑤ Switch Model No. ⑥ Number of Switches

① Model No.

Code	Content
SMG-F	Double Acting/Ultra Low Speed Type
SMG-LF	Double acting, Ultra low speed type, With switch

② Bore size (mm)

Code	Content
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32

③ Piping thread type

Code	Content
Blank	M5 (ø6 to ø25)
	Rc thread (ø32)
NN	NPT thread (ø32 only) Custom order
GN	G thread (ø32 only) Custom order

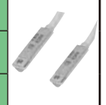
④ Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø6 to ø16	5 to 30	Every 5 mm *2
ø20 to ø32	5 to 50	

*1: Refer to P. 772 for the min. stroke length with standard stroke length switch.
*2: The overall length dimension is the same as the standard stroke above it.

⑤ Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 20 *2	K2H□	K2V□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3H□	K3V□	
		3-wire (PNP)	—		—		K3PH□	K3PV□	
	2-Color	2-wire	—	10 to 30	—	5 to 20	K2YH□	K2YV□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3YH□	K3YV□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	K0H□	K0V□	
	No Indicator LED			5/12/24	20 or less	50 or less	K5H□	K5V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m K0H
3 m K0H 3
5 m K0H 5

⑥ Number of Switches

Code	Content
R	With 1 on Rod Side
H	With 1 on Head Side
D	With 2 pcs

Clean Specification (Catalog No. CB-033SAA)

● Dust generation prevention structure usable in cleanrooms

SMG-F – ···· – P7□

*For combinations of variations and options, see P. 753.

Switch Single Unit Model No. Display Method

SW – K2H

⑤ Switch Model No.

Specifications

Item		SMG-F SMG-LF (with switch)					
Bore size	mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation method		Double Acting Type					
Operating Fluid		Compressed Air					
Maximum Operating Pressure	MPa	0.7					
Min. operating pressure	MPa	0.12	0.06		0.05		
Proof Pressure	MPa	1.05					
Ambient Temperature	°C	5 to 60					
Port Size		M5					Rc1/8
Stroke tolerance	mm	+1.5 0					
Operating piston speed	mm/s	1 to 200					
Cushion		With Rubber Cushion					
Lubrication		Lubrication Not Possible					
Allowable Absorbed Energy J		0.012	0.036	0.1	0.1	0.19	0.5

Stroke

Bore Size (mm)	Standard Stroke (mm)	Min. Stroke (mm)
ø6	5, 10, 15, 20, 25, 30	5
ø10		
ø16		
ø20	5, 10, 15, 20, 25, 30, 40, 50	
ø25		
ø32		

Note: Intermediate strokes can be manufactured in 5 mm increments.

Minimum Stroke with Switch

Bore size	1-color indication type		2-color indicator type	
	K□H	K□V	K□YH	K□YV
ø6	5		5	
ø10				
ø16				
ø20				
ø25				
ø32				

Cylinder Weight

(Unit: g)

Model No. / Bore size	Product Weight when stroke S = 0 mm		Additional weight per S = 5 mm
	SMG-F Double Acting Type	SMG-LF Double-acting type, With switch	
ø6	18	18	3
ø10	27	27	3
ø16	41	56	6
ø20	87	115	11
ø25	164	208	17
ø32	267	335	26

(Example) Product Weight

SMG-LF-16-10-K2H-D

- Product weight for 0 mm stroke length 56 g
- Added weight at S = 10 mm: 6 g × 10/5 = 12 g
- Weight of cylinder switch (2 pcs.): 18 g × 2 = 36 g
- Product Weight 56 g + 12 g + 36 g = 104 g

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2
	Pull	17.3	25.9	34.6	51.8	69.1	86.4	1.04×10^2	1.21×10^2
ø20	Push	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2
	Pull	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2
ø25	Push	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2
	Pull	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2
	Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2

Outline Dimension Drawing

Same as SMG Series (double acting/single rod). See P. 758.

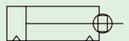


Compact cylinder Double acting/rotation-stop

SMG-M Series

● Tube bore: ø6, ø10, ø16, ø20, ø25, ø32

Circuit Diagram Symbol



Double Acting, Non-Rotating Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

SMG-M - 32 [ ] - 25
① ② ③ ④

With Switch
(Built-in magnet for switch)

SMG-ML - 32 [ ] - 25 - K2H - R

① Model No.
② Bore size
③ Piping thread type
④ Stroke
⑤ Switch Model No.
⑥ Number of Switches

① Model No.

Code	Content
SMG-M	Double Acting, Non-Rotating Type
SMG-ML	Double Acting, Non-rotating Type, With Switch

② Bore size (mm)

Code	Content
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32

③ Piping thread type

Code	Content
Blank	M5 (ø6 to ø25)
	Rc thread (ø32)
NN	NPT thread (ø32 only) Custom order
GN	G thread (ø32 only) Custom order

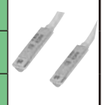
④ Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø6 to ø16	5 to 60	Every 5 mm *2
ø20 to ø32	5 to 100	

*1: Refer to page 776 for the min. stroke length with standard stroke length switch.
*2: The overall length dimension is the same as the standard stroke above it.

⑤ Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 20 *2	K2H□	K2V□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3H□	K3V□	
		3-wire (PNP)	—		—		K3PH□	K3PV□	
	2-Color	2-wire	—	10 to 30	—	5 to 20	K2YH□	K2YV□	
		3-wire (NPN)	—	30 or less	—	50 or less	K3YH□	K3YV□	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	K0H□	K0V□	
	No Indicator LED			5/12/24	20 or less	50 or less	K5H□	K5V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m K0H
3 m K0H 3
5 m K0H 5

⑥ Number of Switches

Code	Content
R	With 1 on Rod Side
H	With 1 on Head Side
D	With 2 pcs

Switch Single Unit Model No. Display Method

SW - K2H
⑤ Switch Model No.

*For combinations of variations and options, see P. 753.

Specifications

Item		SMG-M SMG-ML (with switch)					
Bore size	mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation method		Double Acting Type					
Operating Fluid		Compressed Air					
Maximum Operating Pressure	MPa	0.7					
Min. operating pressure	MPa	0.15	0.10		0.08		
Proof Pressure	MPa	1.05					
Ambient Temperature	°C	-10 to 60 (No freezing)					
Port Size		M5					Rc1/8
Stroke tolerance	mm	+1.5 0					
Operating piston speed	mm/s	50 to 500					
Cushion		With Rubber Cushion					
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Non-rotation accuracy	*1	±0.8°			±0.5°		
Allowable rotational torque	N·m	0.008	0.025	0.088	0.17	0.33	0.67
Allowable absorbed energy	J	0.012	0.036	0.1	0.1	0.19	0.5

*1: Initial value at the pull end (excluding piston rod sag).

Stroke

Bore Size (mm)	Standard Stroke (mm)	Min. Stroke (mm)
ø6	5, 10, 15, 20, 25, 30, 40, 50, 60	5
ø10		
ø16		
ø20	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100	
ø25		
ø32		

Note: Intermediate strokes can be manufactured in 5 mm increments.

Minimum Stroke with Switch

Tube Bore size	1-color indication type		2-color indicator type	
	K□H	K□V	K□□YH	K□YV
ø6	5		5	
ø10				
ø16				
ø20				
ø25				
ø32				

Cylinder Weight

(Unit: g)

Model No. / Bore size	Product Weight when stroke S = 0 mm		Additional weight per S = 5 mm
	SMG-M Double Acting, Non-Rotating Type	SMG-ML Double Acting, Non-rotating Type with Switch	
ø6	23	23	3
ø10	33	33	3
ø16	51	66	6
ø20	106	134	12
ø25	197	241	18
ø32	329	397	27

(Example) Product Weight

SMG-ML-16-10-K2H-D

- Product weight for 0 mm stroke length 66 g
- Added weight at S = 10 mm: 6 g × 10/5 = 12 g
- Weight of cylinder switch (2 pcs.): 18 g × 2 = 36 g
- Product weight 66g + 12g + 36g=114g

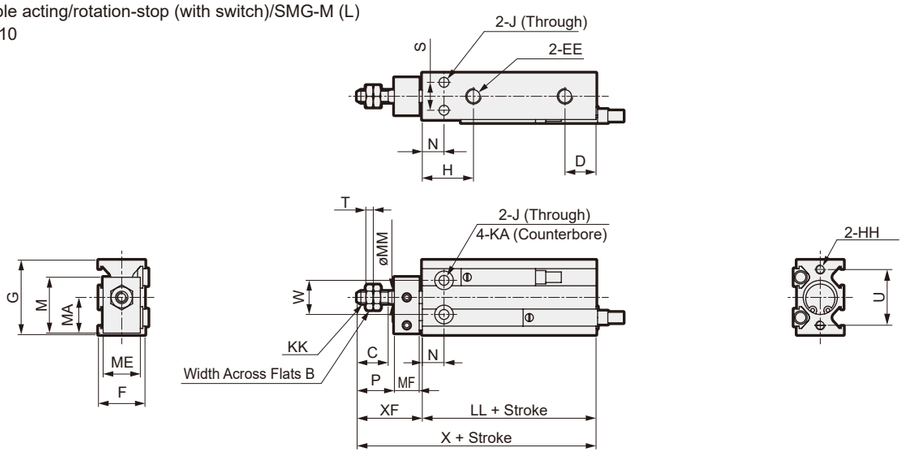
Theoretical Thrust Table

(Unit: N)

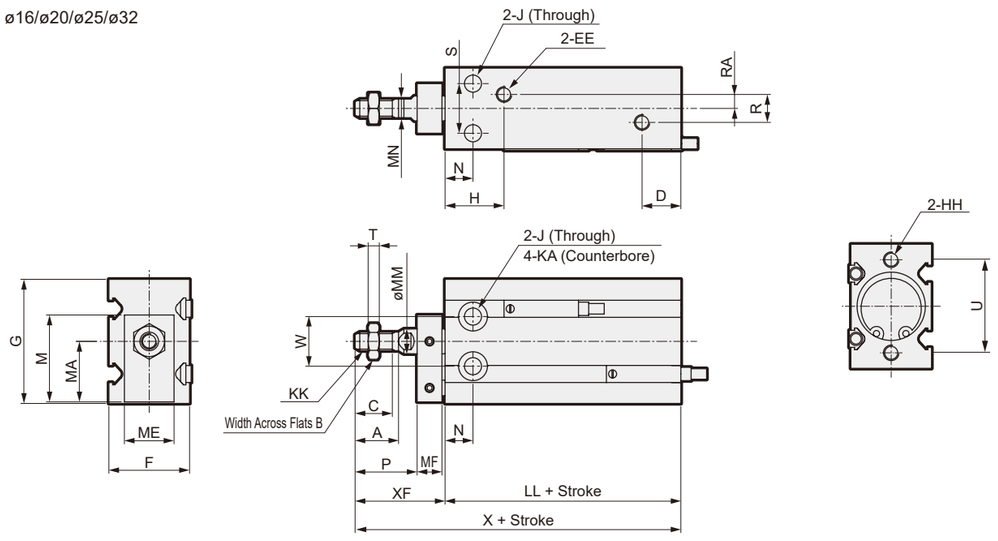
Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2
	Pull	17.3	25.9	34.6	51.8	69.1	86.4	1.04×10^2	1.21×10^2
ø20	Push	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2
	Pull	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2
ø25	Push	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2
	Pull	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2
	Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2

Outline Dimension Drawing

● Double acting/rotation-stop (with switch)/SMG-M (L)
● ø6/ø10



● ø16/ø20/ø25/ø32



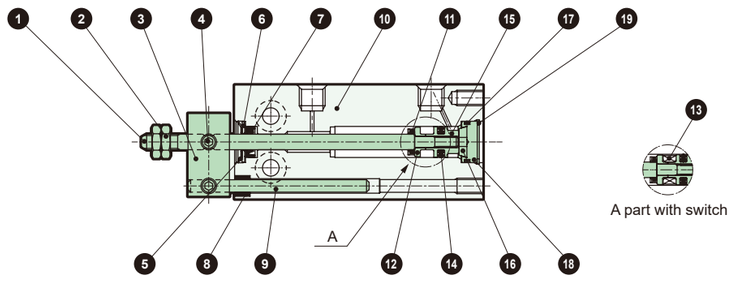
Code / Bore size	A	B	C	D	EE	F	G	H	HH	J	KA	KK	M	MA	ME	MF	MM
ø6	–	5.5	7	10	M5	13	22	15	M3 Depth 5	3.2	6 Depth 4.8	M3	16	10.5	11	8	3
ø10	–	7	10	10	M5	15	24	16.5	M3 Depth 5	3.2	6 Depth 5	M4	18	11.5	12	8	4
ø16	12.5	8	11	11.5	M5	20	32	(*1) 16.5	M4 Depth 6	4.5	7.5 Depth 6.5	M5	22	15.5	13	8	6
ø20	14	10	12	12.5	M5	26	40	19	M5 Depth 8	5.5	9 Depth 8	M6	28	19.5	16	8	8
ø25	18	13	15.5	13	M5	32	50	21.5	M5 Depth 8	5.5	9 Depth 9	M8	35	24.5	20	10	10
ø32	22	17	19.5	12.5	Rc1/8	40	62	23	M6 Depth 9	6.6	11 Depth 11.5	M10 × 1.25	42.5	30.5	24	12	12

Code / Bore size	MN	N	P	R	RA	S	T	U	W	XF	LL		X	
											Without Switch	With switch	Without Switch	With switch
ø6	–	7	9	–	–	7	1.8	17	10	18	33	33	51	51
ø10	–	7	12	–	–	9	2.4	18	11	21	36	36	57	57
ø16	5	7	17	4	2	12	3.2	25	14	26	30	40	56	66
ø20	6	9	20	9	4.5	16	3.6	30	16	29	36	46	65	75
ø25	8	10	22	9	4.5	20	5	38	20	33	40	50	73	83
ø32	10	11	29	13.5	4.5	24	6	48	24	42	42	52	84	94

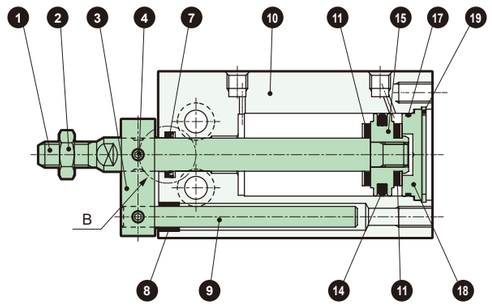
*1: For a 5-stroke model without a switch, the H dimension for bore size ø16 is 14.5.
*2: When calculating LL + stroke and X + stroke dimensions for intermediate strokes, do not use the intermediate stroke value for the stroke; instead, use the value of the standard stroke above it. (Example: If the custom stroke is 35mm, apply the standard stroke 40mm.)
***3: For dimensions of models with switches, see P. 780 and 781.**

Internal Structure Diagram/Material

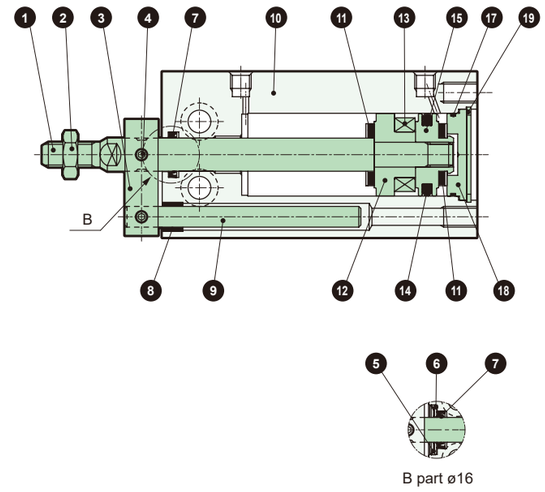
● ø6/ø10 (double acting/rotation-stop)



● ø16 to ø32 (double acting/rotation-stop)



● ø16 to ø32 (double acting/rotation-stop/with switch)



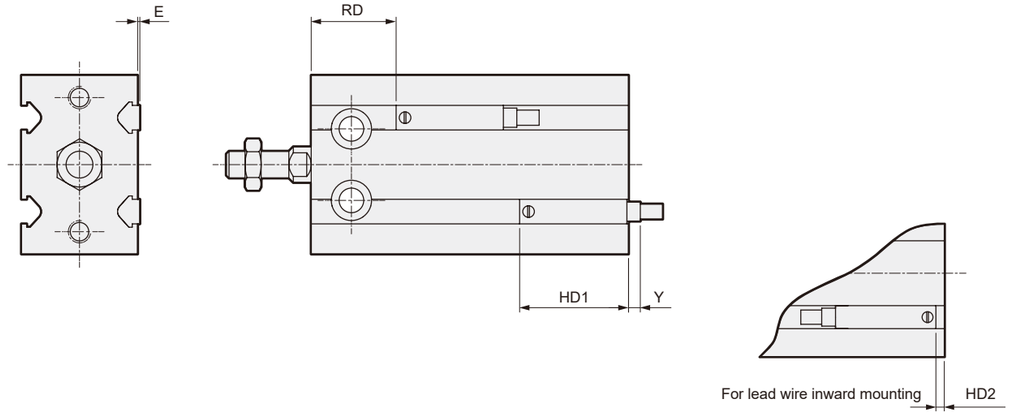
Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	ø20, 25, 32: Industrial chrome plating
2	Rod Nut	Steel	Nickel Plating
3	Non-rotating plate	Aluminum Alloy	Chromate
4	Hexagon socket set screw	Stainless Steel	
5	CR type retaining ring	Stainless Steel	
6	Cap	Stainless Steel	
7	Rod Packing	Nitrile Rubber	
8	Non-Rotating Bushing	Polyacetal	
9	Guide bar	Stainless Steel	ø32: Industrial chrome plating
10	Cylinder Body	Aluminum Alloy	Hard Anodized

Part No.	Part Name	Material	Remarks
11	Cushion rubber R	Urethane Rubber	
12	Spacer	Aluminum Alloy	Chromate
13	Magnet		
14	Piston Packing	Nitrile Rubber	
15	Piston	Aluminum Alloy	Chromate
16	Cushion rubber H	Urethane Rubber	
17	Cover gasket	Nitrile Rubber	
18	Cover	Aluminum Alloy	Chromate
19	C-snap ring	Steel	Zinc phosphate

For maintenance parts, refer to the CKD component product site (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> See Maintenance Parts .

SMG Series Switch Dimensions

●K0H/V, K5H/V, K2H/V, K3H/V, K3PH/V
• SMG-L, SMG-XL, SMG-YL, SMG-LF, SMG-ML



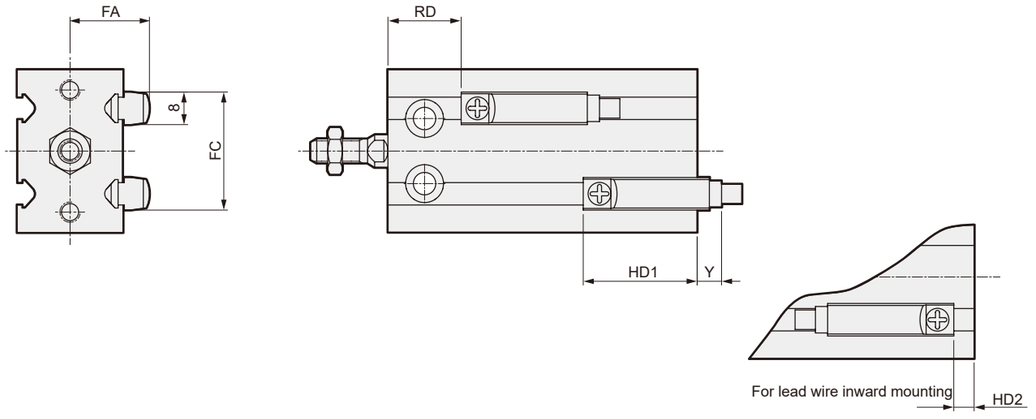
Code	K0, K5, K2, K3, K3P										
	SMG-L, SMG-LF, SMG-ML					SMG-XL					
Bore size (mm)	E	HD1	HD2	RD	Y	E	HD1	HD2	RD		Y
									5, 10st	15 st	
ø6	1	20	1	13	7	1	21.5	2.5	11.5	11.5	5.5
ø10	1	23.5	4.5	12.5	3.5	1	23.5	4.5	12.5	17.5	3.5
ø16	0.5	24.5	5.5	15.5	2.5	0.5	24.5	5.5	15.5	20.5	2.5
ø20	0.5	27	8	19	0	0.5	27	8	19	24	0
ø25	0.5	29	10	21	-2	0.5	29	10	21	26	-2
ø32	0.5	30.5	11.5	21.5	-3.5	0.5	30.5	11.5	21.5	26.5	-3.5

Code	K0, K5, K2, K3, K3P						
	SMG-YL						
Bore size (mm)	E	HD1		HD2		RD	Y	
		5, 10st	15 st	5, 10st	15 st		5, 10st	15 st
ø6	1	22.5	22.5	3.5	3.5	10.5	4.5	4.5
ø10	1	22.5	27.5	3.5	8.5	13.5	4.5	-0.5
ø16	0.5	24.5	29.5	5.5	10.5	15.5	2.5	-2.5
ø20	0.5	27	32	8	13	19	0	-5
ø25	0.5	29	34	10	15	21	-2	-7
ø32	0.5	30.5	35.5	11.5	16.5	21.5	-3.5	-8.5

*1: Y dimensions indicate the protruding dimensions from the end surface of the switch body. (Negative dimensions indicate the pull dimensions from the end surface of the body)
*2: For switch mountability, refer to the model number display method for each variation.

SMG Series Switch Dimensions

●K2YH/V, K3YH/V
• SMG-L, SMG-XL, SMG-YL, SMG-LF, SMG-ML



Code	FA	FC	K2Y, K3Y									
			SMG-L, SMG-LF, SMG-ML					SMG-XL				
Bore size (mm)			HD1	HD2	RD	Y		HD1	HD2	RD		Y
						Straight lead wire type	L-shaped lead wire type			5,10 st	15st.	Straight lead wire type	L-shaped lead wire type
ø6	13.5	18	21	0	12	13	10	22.5	1.5	10.5	10.5	11.5	8.5
ø10	14.5	21	24.5	3.5	11.5	9.5	6.5	24.5	3.5	11.5	16.5	9.5	6.5
ø16	16.5	27	25.5	4.5	14.5	8.5	5.5	25.5	4.5	14.5	19.5	8.5	5.5
ø20	19.5	29	28	7	18	6	3	28	7	18	23	6	3
ø25	22.5	32	30	9	20	4	1	30	9	20	25	4	1
ø32	26.5	34	31.5	10.5	20.5	2.5	-0.5	31.5	10.5	20.5	25.5	2.5	-0.5

Code	K2Y, K3Y								
	SMG-YL								
Bore size (mm)	HD1		HD2		RD	Y (*1)			
						5,10 st		15st.	
	5,10 st	15st.	5,10 st	15st.		Straight lead wire type	L-shaped lead wire type	Straight lead wire type	L-shaped lead wire type
ø6	23.5	23.5	2.5	2.5	9.5	10.5	7.5	10.5	7.5
ø10	23.5	28.5	2.5	7.5	12.5	10.5	7.5	5.5	2.5
ø16	25.5	30.5	4.5	9.5	14.5	8.5	5.5	3.5	0.5
ø20	28	33	7	12	18	6	3	1	-2
ø25	30	35	9	14	20	4	1	-1	-4
ø32	31.5	36.5	10.5	15.5	20.5	2.5	-0.5	-2.5	-5.5

*1: Y dimensions indicate the protruding dimensions from the end surface of the switch body. (Negative dimensions indicate the pull dimensions from the end surface of the body)
*2: For switch mountability, refer to the model number display method for each variation.

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

Individual Precautions: Compact cylinder SMG Series

During Design/Selection

1. Common

Caution

The min. working pressure in the specifications column indicates the initial value. Depending on the conditions of use or duration of use, the specifications may be exceeded. When using around the min. working pressure, consult with CKD.

1. Fine speed SMG-F

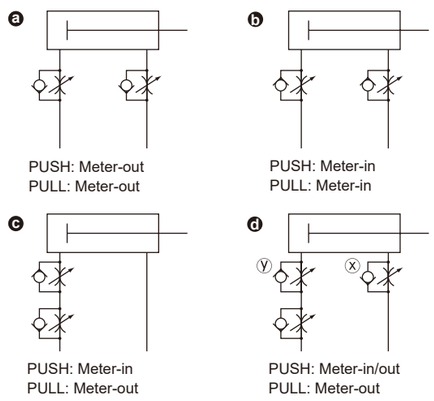
Caution

■ Use without lubrication.
Lubrication may change characteristics.

■ Install the speed controller near the cylinder.
If installed far from the cylinder, the speed will become unstable. For the speed controller, SC-M3/M5-F, SCD-M3/M5-F Series are recommended.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
Use with a load factor of 50% or less.

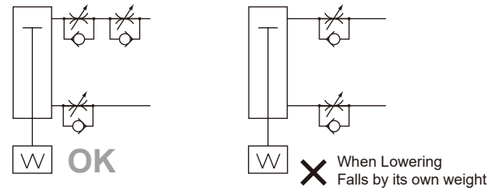
■ Speed control is stable with a meter-out circuit.
When driving a single-rod cylinder at creep speed in the PUSH direction, if the load resistance is small, a flying-out phenomenon may occur at the start of operation. As countermeasures, use circuits ⓑ, ⓒ or ⓓ. In addition, the ⓓ circuit is the most stable.



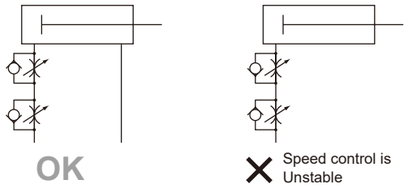
ⓓSpeed adjustment method for PUSH operation of the circuit:
1. Speed setting with x speed controller
2. Throttle with y speed controller until projection stops.
3. Reconfirmation of speed

(*1)When comparingⓑ ⓒ ⓓ, operation is the most stable with the ⓓ circuit.

(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.



(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)
Lurching occurs in the following cases:
• Thrust > Resistance
*Resistance: Thrust due to residual pressure on exhaust side (For creep speed type,+ intake pressure = residual pressure) + For horizontal use: Frictional force due to load / For vertical use: Dead weight of the load

■ Do not apply lateral load to the cylinder.
Operation becomes unstable when lateral load is applied.

■ Avoid use in locations with vibration.
Operation becomes unstable due to the influence of vibration.

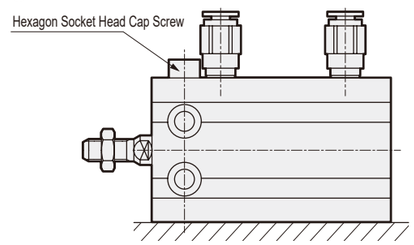
During Use

1. Common

Caution

■ Depending on the stroke length or mounting method, applicable piping fittings are limited. Therefore, use the recommended fittings as below.

Figure 1



Item / Bore	Port Size	Recommended fitting	Item / Bore	Port Size	Recommended fitting
6	M5	SC3W-M5-4,6 SC3U-M5-4,6 GWS4-M5 GWS6-M5 (*1) GWS4, 6-M5-S GWL4-M5 GWL6-M5 (*1)	20	M5	SC3W-M5-4,6 SC3U-M5-4,6 GWS4-M5 GWS6-M5 (*1) GWS4, 6-M5-S GWL4-M5 GWL6-M5 (*1)
10	M5	SC3W-M5-4,6 SC3U-M5-4,6 GWS4, 6-M5 GWS4, 6-M5-S GWL4, 6-M5	25	M5	SC3W-M5-4,6 SC3U-M5-4,6 GWS4, 6-M5 GWS4, 6-M5-S GWL4, 6-M5
16	M5	SC3W-M5-4,6 SC3U-M5-4,6 GWS4-M5 (*1) GWS6-M5 (*2) GWS4-M5-S GWS6-M5-S (*1) GWL4-M5 (*1) GWL6-M5 (*2)	32	Rc1/8	SC3W-6-4, 6, 8 SC3U-6-4, 6, 8 GWS4, 6, 8-6 GWS4, 6, 8-6-S GWL4, 6, 8-6

*1) Excluding 5 stroke length or mounting method in "Fig. 1".
*2) Excluding 5, 10 mm stroke length or mounting method in "Fig. 1".

■ When mounting the body with the through bolt, tighten with tightening torque as shown in the table below.

Bore	Bolt used	Tightening torque
ø6/10	M3	0.6 to 1.1 N·m
ø16	M4	1.5 to 2.7 N·m
ø20/25	M5	3.0 to 5.4 N·m
ø32	M6	5.2 to 9.2 N·m

2. Single acting SMG-X/Y

Caution

■ Do not leave single-acting cylinders pressurized.
If left pressurized, the piston rod may not return by spring force when the pressure is released.

3. Fine speed SMG-F

Caution

■ Adjust alignment etc. so that no lateral load is applied to the cylinder. In addition, install and adjust the sliding guide to avoid twisting.
● Fluctuations in load or resistance will make operation unstable.
● Guides with a large difference between static and dynamic friction will have unstable operation.

4. Rotation-stop SMG-M

Caution

■ When attaching load to the piston rod, do not apply more torque than the allowable torque.

■ Do not put your fingers into the gap between the rotation-stop plate and the rotation-stop cylinder tube.
Never put your fingers through the gap because fingers may be pinched between the rotation-stop plate and the cylinder tube while the piston rod is pulled.

■ Do not apply rotation torque to the piston rod. If by any chance torque is applied due to the shape of the jig, use without exceeding the allowable torque.

■ After maintenance, when connecting the piston rod and rotation-stop plate, fasten with hexagon socket set screws, applying the tightening torque given in the table below.

Bore	Applicable hexagon socket set screw	Tightening torque
ø6/10/16	M3	0.6 N·m
ø20/25	M4	1.4 N·m
ø32	M5	4.2 N·m

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

Space saving structure

MSD

Compact Cylinder

ø6, ø8, ø12, ø16



CONTENTS

Product Introduction	786
Series System Table	788
Variation / Option combinability table	790
● Double acting/single rod (MSD)	792
● Single acting/push (MSD-X)	800
● Single acting/pull (MSD-Y)	800
● Double acting/high load (MSD-K)	808
● Double acting/single rod/fine speed (MSD-F)	816
● Double acting/high load/fine speed (MSD-KF)	816
External Dimensions Diagram with Switch	820
⚠ Precautions for Use	826

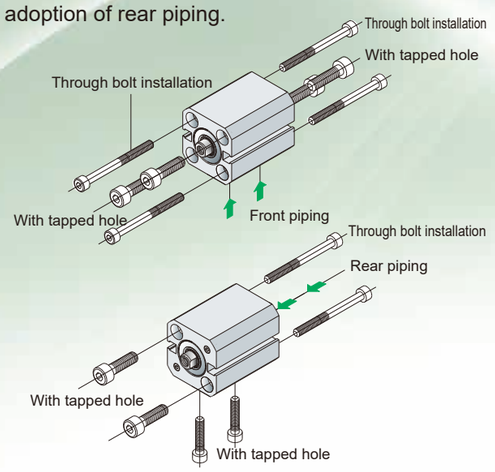
Compact cylinder MSD Series (ø6, ø8, ø12, ø16)

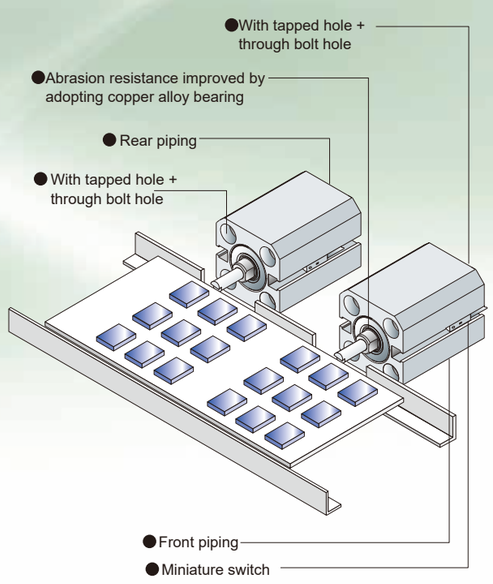
Axial space saving achieved



Direct 3-sided mounting

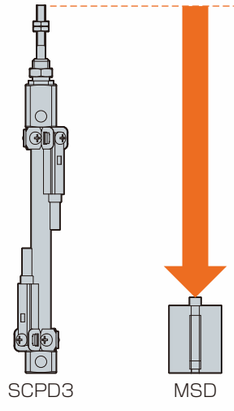
Adoption of a square body allows direct mounting from each direction. Mounting to the body top surface and bottom surface can be done with through bolt and tapped hole. In addition, body side surface mounting is now also possible through the adoption of rear piping.





Axial direction space saving

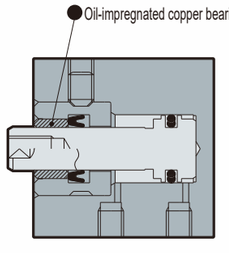
Axial length and mounting space can be reduced.



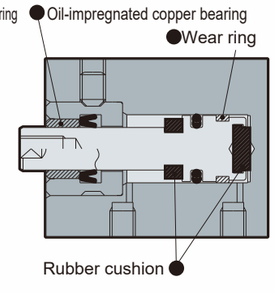
Long life design (Approx. 4 times longer than conventional products)

Oil-impregnated copper alloy bearing is adopted for rod bearing section to increase abrasion resistance and high load type is also available.

Basic type

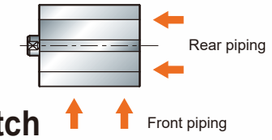


High Load Type



Piping direction selectable

Piping can be selected from two directions: front piping or rear piping.



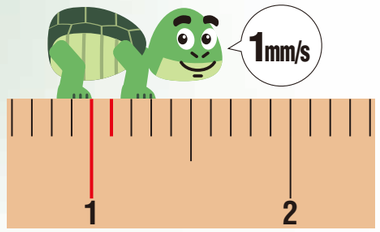
Equipped with ultra-compact F series with switch

Achieved switch inclusion in compact sizes of ø6 and ø8.

Ultra low speed operation from 1 mm/s is possible (MSD-F, LF, KF, KLF)

Ultra-low speed drive up to 1 mm/s possible

No stick-slip, stable operation even at fine speeds. Ideal for conveying and positioning delicate products.

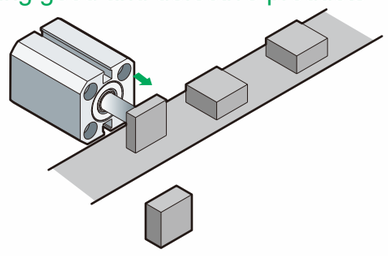


Our company's original sliding mechanism

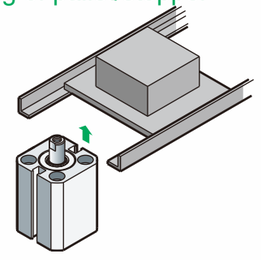
- Special treatment of the inner surface of the tube.
- Special treatment of the packing surface and optimization of hardness.
- Optimal grease selection.

Application Example

Sorting good and defective products



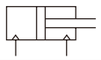
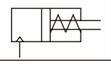
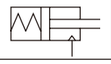
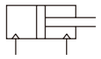
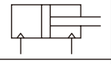
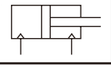
Positioning of pallet/stopper



MSD Series variation

Model variations		Tube I.D. (mm)	Standard stroke (mm) 5	10	15	20	25	30
Double acting/single rod With Switch	MSD MSD-L	ø6 / ø8	●	●	●	●	●	●
Single acting/push With Switch	MSD-X MSD-XL	ø6 / ø8	●	●				
Single acting/pull With Switch	MSD-Y MSD-YL	ø6 / ø8	●	●				
Double acting/high load With Switch	MSD-K MSD-KL	ø6 / ø8 ø12 / ø16	●	●	●	●	●	●
Double acting/single rod/ fine speed With Switch	MSD-F MSD-LF	ø6 / ø8	●	●	●	●	●	●
Double acting/high load/ fine speed With Switch	MSD-KF MSD-KLF	ø6 / ø8 ø12 / ø16	●	●	●	●	●	●

●: Standard, ◎: Option, : Not manufacturable

Variation	Model No.	Bore Size (mm)	Standard Stroke (mm) 5	10	15	20	25	30		Min. Stroke (mm)	Max. Stroke (mm)	Option: Rear piping type R	Switch	Page
Double Acting, Single Rod Type with Switch	MSD MSD-L 	ø6 / ø8	●	●	●	●	●	●		5	30	◎	◎	792
Single Acting, Push Type with Switch	MSD-X MSD-XL 	ø6 / ø8	●	●						5	10	◎	◎	800
Single Acting, Retracting Type with Switch	MSD-Y MSD-YL 	ø6 / ø8	●	●						5	10	◎	◎	800
Double Acting, High Load Type with Switch	MSD-K MSD-KL 	ø6 / ø8 ø12, ø16	●	●	●	●	●	●		5	30	◎	◎	808
Double acting/ single rod fine speed with switch	MSD-F MSD-LF 	ø6 / ø8	●	●	●	●	●	●		5	30		◎	816
High load/fine speed with switch	MSD-KF MSD-KLF 	ø6 / ø8 ø12, ø16	● ●	● ●	● ●	● ●	● ●	● ●		5	30	 ◎	◎	816

Combination Availability Table for Variations and Option Items

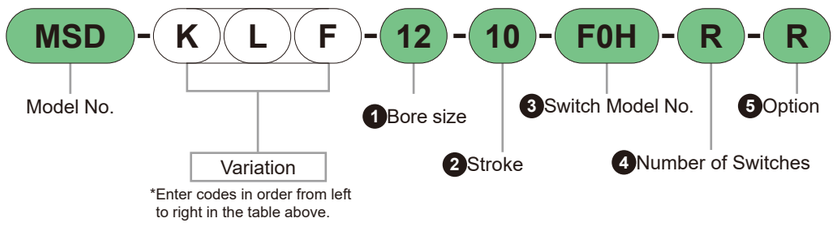
● MSD Series

◎Mark: Option
○Mark: Custom Products
×Mark: Not manufacturable

		Category	Variation						Option	
			Double Acting/Single Rod Type	High Load Type	Single Acting, Push Type	Single Acting, Retracting Type	With Cylinder Switch	Low speed type	Rear piping type	
Category		Code	None	K	X	Y	L	F	R	
Variation	Double Acting/Single Rod Type	Blank	＼	＼	＼	＼	＼	＼	◎	
	High Load Type	K		＼	×	×	◎	◎	◎	
	Single Acting, Push Type	X			＼	×	◎	×	◎	
	Single Acting, Retracting Type	Y				＼	◎	×	◎	
	With Cylinder Switch	L					＼	◎	◎	
	Low speed type	F						＼	Note	
Option	Rear piping type	R							＼	
Accessories	Cylinder Switch	Separately Shown	◎	◎	◎	◎	◎	◎	◎	

Note: ø6.ø8 cannot be selected.

[Model Number Notation Example]



Model No.: Compact Cylinder
● Variation High load/with switch/fine speed
1 Bore size: ø12 mm
2 Stroke: 10 mm
3 Switch Model No. Reed FOH, lead wire 1 m
4 Number of Switches: With 1 pc. on rod side
5 Option: Rear piping type

MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

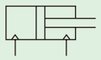


Compact Cylinder/Double Acting, Single Rod Type

MSD Series

● Bore size: ø6/ø8

Circuit Diagram Symbol



Double Acting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MSD - 6 - 5 ——— R

Model No. ❶ ❷ ❺

With Switch
(Built-in magnet for switch)

MSD-L - 6 - 5 - F0H - R - R

Model No. ❷Stroke ❹Number of Switches ❶Bore size ❸Switch Model No. ❺Option

❶Bore Size (mm)

Code	Content
6	ø6
8	ø8

❷Stroke (mm)

Code	Content
5	5
10	10
15	15
20	20
25	25
30	30

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire	—	24 ± 10%	—	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: When using with switch, use the non-magnetic (stainless steel, etc.) mounting bolt.
*4: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.
*5: Depending on the relationship between cylinder mounting and stroke, it may not be possible to mount the switch. Refer to P. 794 for availability.

***Lead wire length**

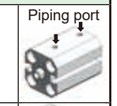
Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F2S
3 m F2S3

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Front piping type	Piping port 
*1 R	Rear piping type	 Piping port

*1: In the case of the rear piping type, mounting on the side of the main body is possible. Also, please note that two bolts are used for mounting on the rod side and head side.

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

MSD-····-P4*

*Please contact us for details.

High Durability Components HP Series (Catalog No. CC-1421AA)

● Long-life actuator that can contribute to productivity improvement with stable operation

MSD-····-HP□

Switch Single Unit Model No. Display Method

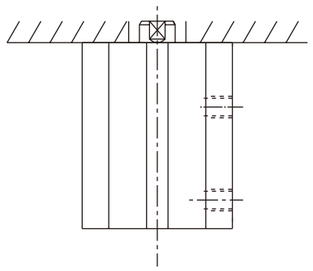
SW - F0H

❹Switch Model No.

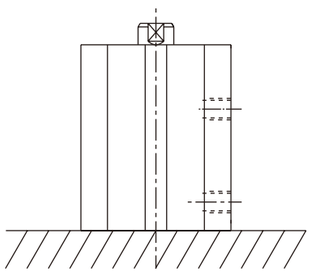
Switch usability selection table

Depending on the cylinder mounting and stroke relationship, it may not be possible to mount the switch. Select the switch after confirming the table below. In addition, for side mounting, it cannot be used in the following combinations.

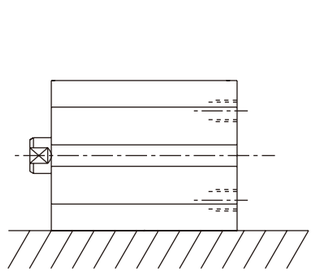
- Combinations in which F2YH/V, F3YH/V or F3PH/V is mounted at the switch mounting position H with stroke length 5 mm
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with stroke length 10 mm (Refer to P. 796 for the min. stroke with switch.)



For rod side installation



At head side mounting



At side mounting

● For rod side installation

Bore Size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	○	×	○	○	○	×	○	×	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	○	○	○	×	○	○	○	×	○	×	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● At head side mounting

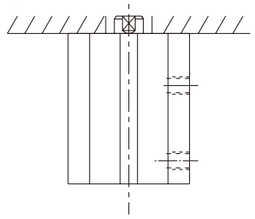
Bore Size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	×	○	○	○	×	×	○	×	×	×	○	○
	10	○	○	×	○	○	○	×	○	○	○	○	×	○	○
	15	○	○	○	○	○	○	×	○	○	○	○	×	○	○
	20 to	○	○	○	○	○	○	○	○	○	○	○	×	○	○
ø8	5	○	○	×	○	○	○	×	×	○	×	×	×	○	○
	10	○	○	×	○	○	○	×	○	○	○	○	×	○	○
	15	○	○	○	○	○	○	×	○	○	○	○	×	○	○
	20 to	○	○	○	○	○	○	○	○	○	○	○	×	○	○

Note: (R) 1 rod side switch, H: With 1 head side switch

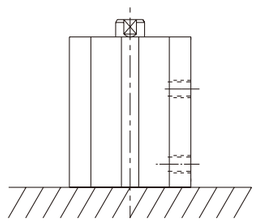
Switch usability selection table

Depending on the cylinder mounting and stroke relationship, it may not be possible to mount the switch. Select the switch after confirming the table below. In addition, for side mounting, it cannot be used in the following combinations.

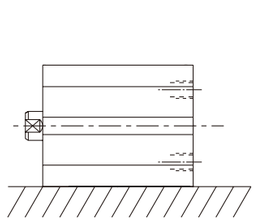
- Combinations in which F2YH/V, F3YH/V or F3PH/V is mounted at the switch mounting position H with X type or Y type stroke length 5 mm
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with X type stroke length 10 mm (Refer to P. 802 for the min. stroke with switch.)



For rod side installation



At head side mounting



At side mounting

● For MSD-XL rod side installation

Bore size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S, F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	○	×	○	○	○	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	○	○	○	×	○	○	○	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● For MSD-XL head side mounting

Bore size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S, F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	×	○	○	○	×	×	×	○	×	×	○	○
	10	○	○	×	○	○	○	×	○	○	○	○	×	○	○
ø8	5	○	○	×	○	○	○	×	×	×	○	×	×	○	○
	10	○	○	×	○	○	○	×	○	○	○	○	×	○	○

● For MSD-YL rod side installation

Bore size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S, F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	○	×	○	○	○	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	○	○	○	×	○	○	○	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● For MSD-YL head side mounting

Bore size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S, F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	×	○	○	○	×	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	×	○	○	○	○	○	○	○
ø8	5	○	○	×	○	○	○	×	×	○	×	○	○	○	○
	10	○	○	○	○	○	○	×	○	○	○	○	○	○	○

Note: (R) 1 rod side switch, H: With 1 head side switch

Specifications

Item	MSD MSD-L (with switch)
Bore size mm	ø6, ø8
Actuation method	Double Acting Type
Operating Fluid	Compressed Air
Maximum operating pressure MPa	1.0
Min. Operating Pressure MPa	0.15
Proof pressure MPa	1.6
Ambient Temperature °C	-10 to 60 (No freezing)
Port Size	M3
Stroke tolerance mm	+0.5 0
Operating Piston Speed mm/s	50 to 500
Cushion	None
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)
Allowable absorbed energy J	This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.

Stroke

Bore size (mm)	Standard Stroke (mm)	Minimum stroke with 2 switches (mm)		Minimum stroke with 1 switch (mm)	
		Reed switch	Solid state switch	Reed switch	Solid state switch
ø6	5 / 10 / 15 / 20 / 25 / 30	10	5 (10)	5	5
ø8	5 / 10 / 15 / 20 / 25 / 30	10	5 (10)	5	5

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Cylinder Weight Table

(Unit: g)

Stroke (mm) / Bore Size (mm)	5		10		15		20		25		30		1 switch Weight per
	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	
ø6	22	24	25	27	27	29	30	32	33	35	36	38	Refer to the weight stated in the switch specifications on P. 869.
ø8	23	26	28	31	33	36	38	41	42	45	47	50	

Theoretical Thrust Table

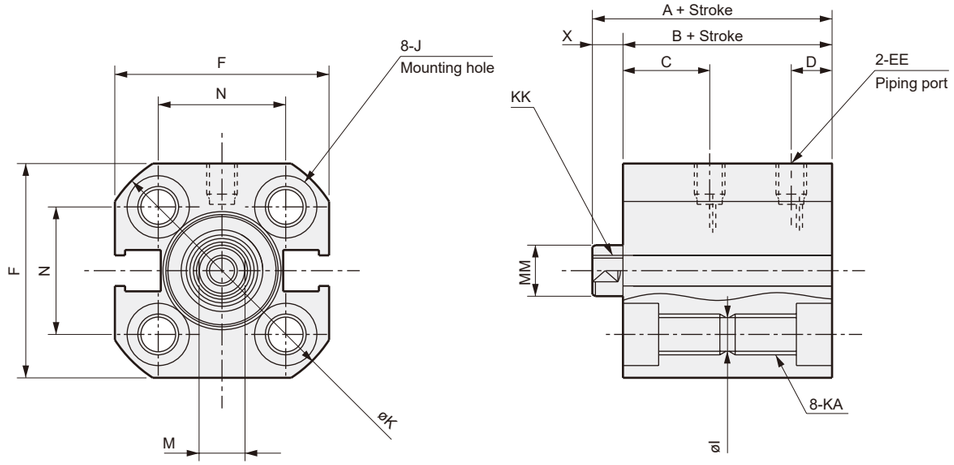
(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	Push	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	2.36	3.14	4.71	6.28	7.85	9.42	11.0	12.6	14.1	15.7
ø8	Push	7.54	10.1	15.1	20.1	25.1	30.2	35.2	40.2	45.2	50.3
	Pull	4.59	6.13	9.19	12.3	15.3	18.4	21.4	24.5	27.6	30.6

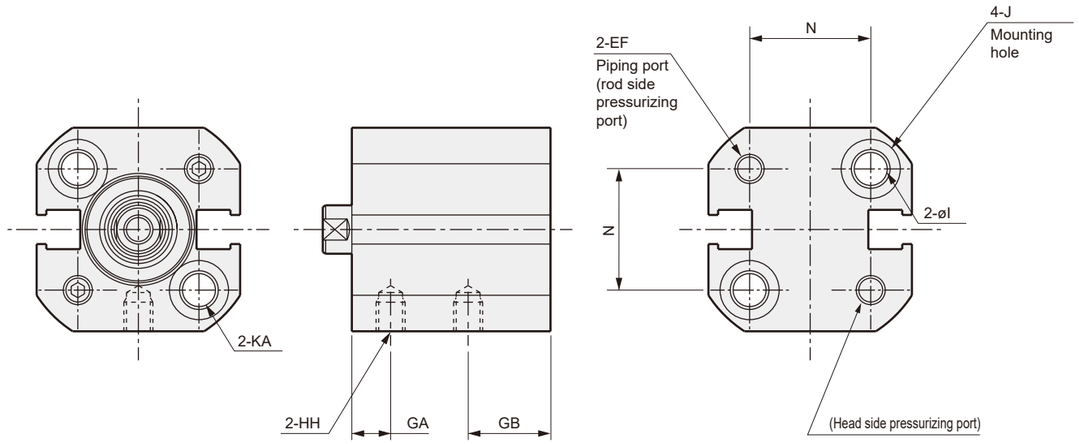
MEMO

Outline Dimension Drawing

●MSD-(L)-6/8



● MSD-(L)-6/8-□-R (rear piping)



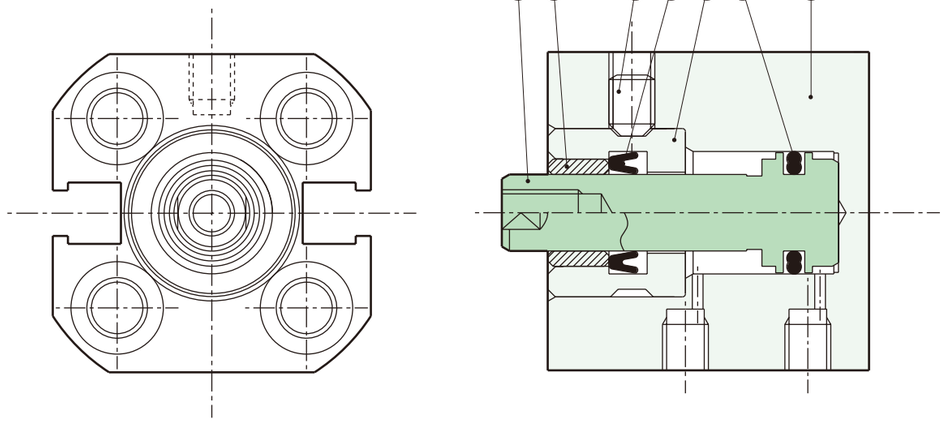
Bore Size (mm)	Without Switch		With Switch		Common dimension												
	A	B	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	X
ø6	17.5	14.5	22.5	19.5	7.5	4	M3	19	3.2	Counterbore ø6.1 Depth 3.5	22.5	M4 Depth 6	M2.5 depth 4	3.5	4	11	3
ø8	19	16	24	21	9	4	M3	21	3.2	Counterbore ø6.1 Depth 3.5	25	M4 Depth 6	M3 Depth 5	4.5	5	12.5	3

Bore Size (mm)	Rear piping dimensions			
	EF	GA	GB	HH
ø6	M3	3	8.5	M3 Depth 3
ø8	M3	4.5	8.5	M3 Depth 3

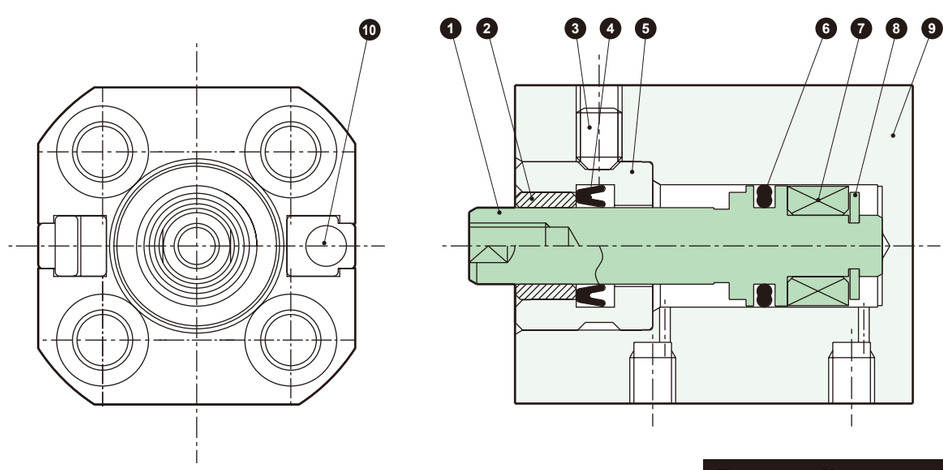
Note: Refer to P. 820 to 824 for dimensions with switch.

Internal Structure Diagram/Material

●MSD-6/8



●MSD-L-6/8



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	Magnet	Plastic	
2	Bushing	Oil-Impregnated Bearing Alloy		8	E-type retaining ring	Stainless Steel	
3	Hexagon socket head set screw	Stainless Steel		9	Cylinder Body	Aluminum Alloy	Hard Anodized
4	Rod Packing	Nitrile Rubber		With Switch			
5	Rod Metal	Stainless Steel		10	Switch		
6	Piston Packing	Nitrile Rubber					

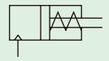


Small compact cylinder Single acting/push
Single Acting, Retracting Type

MSD-$^{X}_{Y}$ Series

● Bore size: ø6, ø8

Circuit Diagram Symbol



Single Acting, Push Type



Single Acting, Retracting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MSD-X - 6 - 5 ——— R
① ② ③ ⑥

With Switch
(Built-in magnet for switch)

MSD-XL - 6 - 5 - F0H - R - R

① Model No. ③ Stroke ⑤ Number of Switches
② Bore size ④ Switch Model No. ⑥ Option

① Model No.

Code	Content
MSD-X	Single Acting, Push Type
MSD-Y	Single Acting, Retracting Type
MSD-XL	Single acting/push, with switch
MSD-YL	Single acting/pull, with switch

② Bore Size (mm)

Code	Content
6	ø6
8	ø8

③ Stroke (mm)

Code	Content
5	5
10	10

④ Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire	—	24 ± 10%	—	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: For models with switches, use non-magnetic (stainless steel, etc.) mounting bolts for ø6 and ø8.
*4: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.
*5: Depending on the relationship between cylinder mounting and stroke, it may not be possible to mount the switch. Refer to P. 795 for availability.

*Lead wire length

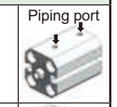
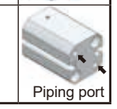
Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F2S
3 m F2S3

⑤ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

⑥ Option

Code	Content	
Blank	Front piping type	Piping port 
*1 R	Rear piping type	 Piping port

*1: In the case of the rear piping type, mounting on the side of the main body is possible. Also, please note that two bolts are used for mounting on the rod side and head side.

Switch Single Unit Model No. Display Method

SW - F0H

④ Switch Model No.

Specifications

Item	MSD-X MSD-XL (with switch)		MSD-Y MSD-YL (with switch)	
Bore size mm	ø6	ø8	ø6	ø8
Actuation method	Single Acting, Push Type		Single Acting, Retracting Type	
Operating Fluid	Compressed Air			
Maximum operating pressure MPa	1.0			
Min. Operating Pressure MPa	0.3		0.4	0.3
Proof pressure MPa	1.6			
Ambient Temperature °C	-10 to 60 (No freezing)			
Port Size	M3			
Stroke tolerance mm	+0.5 0			
Operating Piston Speed mm/s	50 to 500			
Cushion	None			
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)			
Allowable absorbed energy J	This product cannot absorb the energy generated by an external load included to the cylinder. Use without load or provide a separate shock absorber externally.			

Stroke

Bore Size (mm)	Standard Stroke (mm)	Minimum stroke with 2 switches (mm)		Minimum stroke with 1 switch (mm)	
		Solid state switch	Reed switch	Solid state switch	Reed switch
ø6	5, 10	5 (10)	10	5	5
ø8	5, 10	5 (10)	10	5	5

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Cylinder Weight Table

●MSD-X / MSD-XL (Unit: g)

Stroke (mm) / Bore Size (mm)	5 Without Switch	5 With Switch	10 Without Switch	10 With Switch	1 switch Weight per
ø6	23	25	28	30	Refer to the weight stated in the switch specifications on P. 869.
ø8	24	27	33	36	

●MSD-Y / MSD-YL (Unit: g)

Stroke (mm) / Bore Size (mm)	5 Without Switch	5 With Switch	10 Without Switch	10 With Switch	1 switch Weight per
ø6	25	27	31	33	Refer to the weight stated in the switch specifications on P. 869.
ø8	28	31	38	41	

Spring Load

(Unit: N)

Bore size (mm)	Stroke (mm)	Spring Load At set	Spring Load During operation
ø6	5	1.59	4.90
	10		
ø8	5	3.19	6.86
	10		

Theoretical Thrust Table

●MSD-X (Unit: N)

Bore size (mm)	Operating Pressure MPa 0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	3.58	6.41	9.24	12.1	14.9	17.7	20.5	23.4
ø8	8.22	13.2	18.3	23.3	28.3	33.4	38.4	43.4

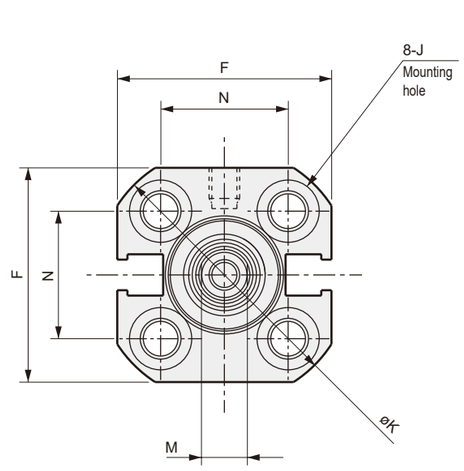
●MSD-Y (Unit: N)

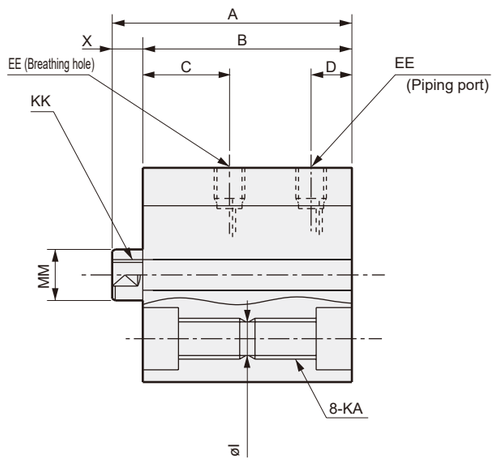
Bore size (mm)	Operating Pressure MPa 0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	-	1.38	2.95	4.52	6.10	7.67	9.24	10.8
ø8	2.33	5.39	8.46	11.5	14.6	17.6	20.7	23.8

MEMO

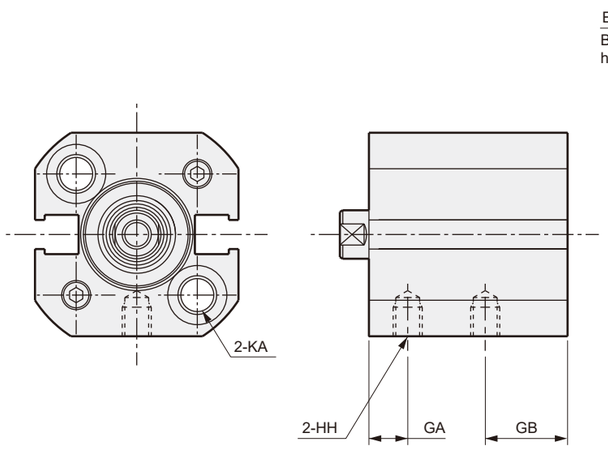
Outline Dimension Drawing

●MSD-X(L)-6/8





● MSD-X(L)-6/8-□-R (rear piping)

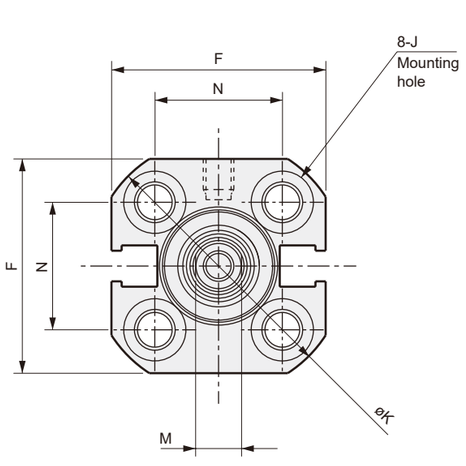


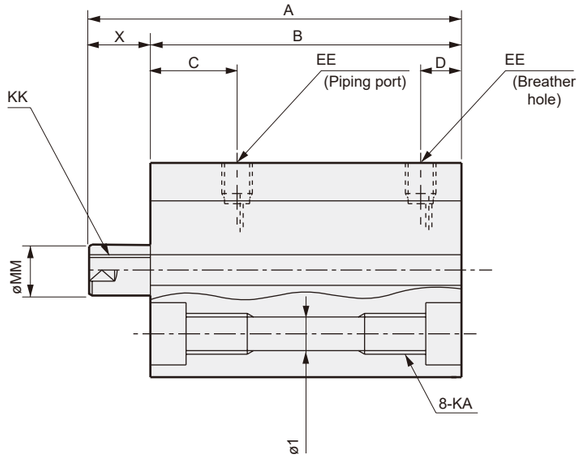
Code			Without Switch		With Switch		Common dimension													Rear piping dimensions			
Bore Size (mm)			A	B	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	X	EF	GA	GB	HH
ø6	Stroke	5	22.5	19.5	27.5	24.5	7.5	4	M3	19	3.2	Spot face ø6.1 Depth 3.5	22.5	M4 Depth 6	M2.5 depth 4	3.5	4	11	3	M3	3	8.5	M3 Depth 3
		10	32.5	29.5	37.5	34.5																	
ø8	Stroke	5	24	21	29	26	9	4	M3	21	3.2	Spot face ø6.1 Depth 3.5	25	M4 Depth 6	M3 Depth 5	4.5	5	12.5	3	M3	4.5	8.5	M3 Depth 3
		10	34	31	39	36																	

Note: Refer to P. 820 to 824 for dimensions with switch.

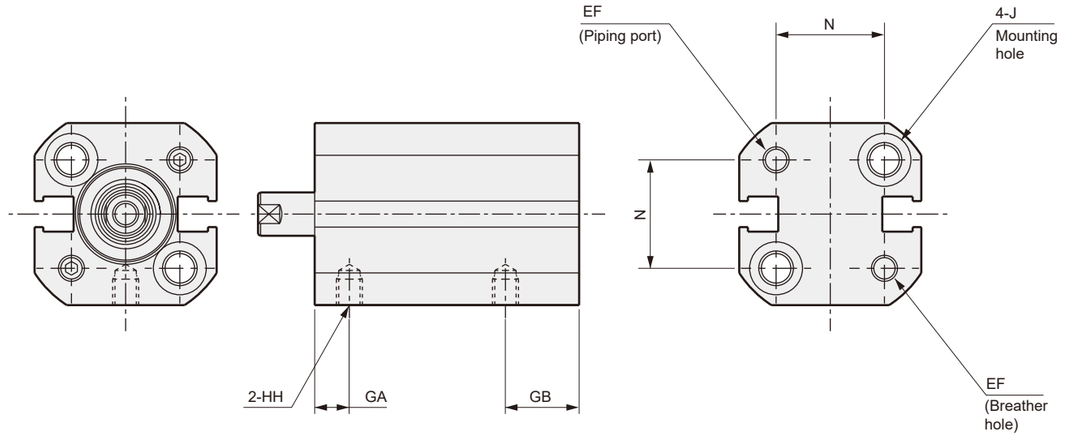
Outline Dimension Drawing

●MSD-Y(L)-6/8





● MSD-Y(L)-6/8-□-R (rear piping)

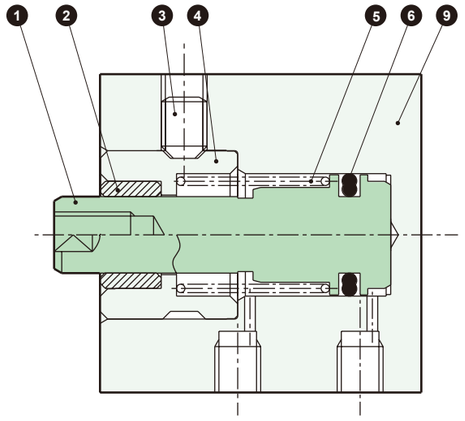


Code			Without Switch		With Switch		Common dimension													Rear piping dimensions			
Bore Size (mm)			A	B	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	X	EF	GA	GB	HH
ø6	Stroke	5	32.5	24.5	37.5	29.5	7.5	4	M3	19	3.2	Counterbore ø6.1 Depth 3.5	22.5	M4 Depth 6	M2.5 depth 4	3.5	4	11	8	M3	3	8.5	M3 Depth 3
		10	47.5	34.5	52.5	39.5													13				
ø8	Stroke	5	34	26	39	31	9	4	M3	21	3.2	Counterbore ø6.1 Depth 3.5	25	M4 Depth 6	M3 Depth 5	4.5	5	12.5	8	M3	4.5	8.5	M3 Depth 3
		10	49	36	54	41													13				

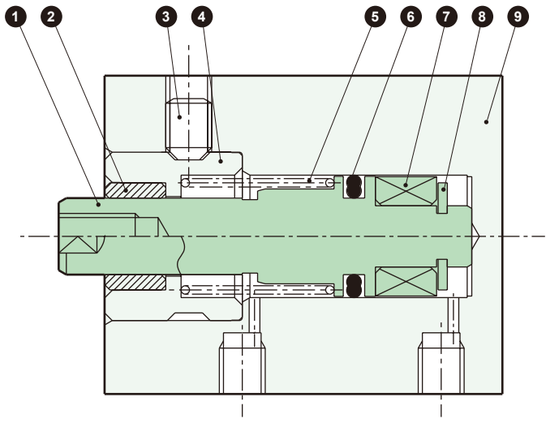
Note: Refer to P. 820 to 824 for dimensions with switch.

Internal Structure Diagram/Material

●MSD-X-6/8



●MSD-XL-6/8

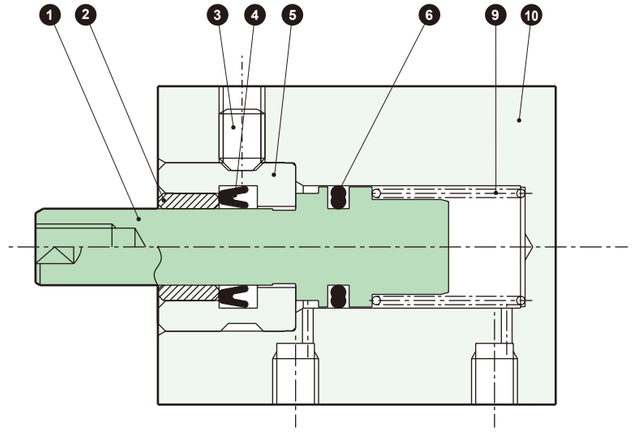


Do not disassemble

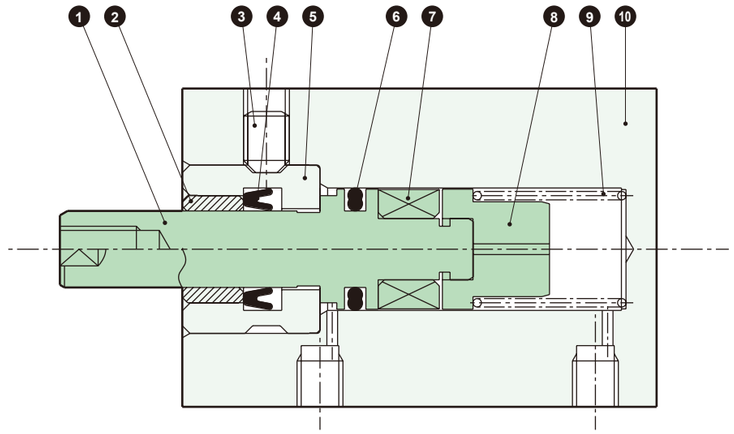
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		6	Piston Packing	Nitrile Rubber	
2	Bushing	Oil-Impregnated Bearing Alloy		7	Magnet	Plastic	
3	Hexagon socket head set screw	Stainless Steel		8	E-type retaining ring	Stainless Steel	
4	Rod Metal	Stainless Steel		9	Cylinder Body	Aluminum Alloy	Hard Anodized
5	Coil Spring	Piano Wire	Electrodeposition Coating				

Internal Structure Diagram/Material

●MSD-Y-6/8



●MSD-YL-6/8



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		6	Piston Packing	Nitrile Rubber	
2	Bushing	Oil-Impregnated Bearing Alloy		7	Magnet	Plastic	
3	Hexagon socket head set screw	Stainless Steel		8	Spring Retainer	Stainless Steel	
4	Rod Packing	Nitrile Rubber		9	Coil Spring	Piano Wire	Electrodeposition Coating
5	Rod Metal	Stainless Steel		10	Cylinder Body	Aluminum Alloy	Hard Anodized

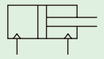


Small compact cylinder Double acting/high load

MSD-K Series

● Bore size: ø6, ø8, ø12, ø16

Circuit Diagram Symbol



Double Acting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MSD-K – 6 – 5 ——— R

Model No. ❶ ❷ ❺

With Switch
(Built-in magnet for switch)

MSD-KL – 6 – 5 – F0H – R – R

Model No. ❷Stroke ❹Number of Switches
❶Bore size ❸Switch Model No. ❺Option

❶Bore size (mm)

Code	Content
6	ø6
8	ø8
12	ø12
16	ø16

❷Stroke (mm)

Code	Content
5	5
10	10
15	15
20	20
25	25
30	30

❸Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire	—	24 ± 10%	—	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: For models with switches, use non-magnetic (stainless steel, etc.) mounting bolts for ø6 and ø8.
*4: When using a non-contact switch with ø12 or ø16, use non-magnetic (stainless steel, etc.) through bolts.
*5: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.
*6: Depending on the relationship between cylinder mounting and stroke, it may not be possible to mount the switch. Refer to P. 810 for availability.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F2S
3 m F2S3

❹Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

❺Option

Code	Content	
Blank	Front piping type	Piping port 
R *1	Rear piping type	 Piping port

*1: In the case of the rear piping type, mounting on the side of the main body is possible. Also, please note that two bolts are used for mounting on the rod side and head side.

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

MSD-K – · · · · · – P4□

Switch Single Unit Model No. Display Method

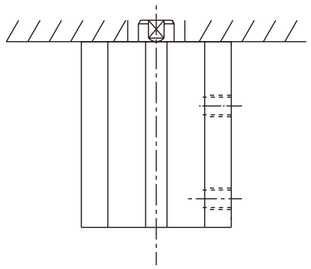
SW – F0H

❹Switch Model No.

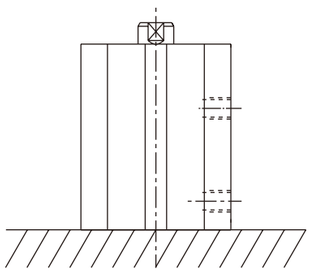
Switch usability selection table

Depending on the cylinder mounting and stroke relationship, it may not be possible to mount the switch. Select the switch after confirming the table below. Switches cannot be used for side mounting in the following combinations.

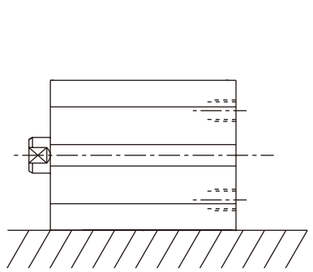
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with stroke length 5 mm for ø6
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with stroke length 5 mm for ø8 (Refer to P. 811 for the min. stroke with switch.)



For rod side installation



At head side mounting



At side mounting

● For rod side installation

Bore Size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	○	○	○	○	○	×	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	×	○	○	○	○	○	◯	○	○	○	○
ø8	5	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	×	○	○	○	○	○	◯	○	○	○	○
ø12	5	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	×	○	○	○	○	○	◯	○	○	○	○
ø16	5	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	×	○	○	○	○	○	◯	○	○	○	○

● At head side mounting

Bore Size (mm)	Stroke (mm)	Solid state switch										Reed switch			
		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV		F0H		F0V	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	×	○	○	○	×	×	◯	○	×	○	○	○
	10	○	○	×	○	○	○	×	○	◯	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	○	○	×	○	○	○	×	○	◯	○	×	○	○	○
	10	○	○	×	○	○	○	×	○	◯	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø12	5	○	○	×	○	○	○	×	○	◯	○	×	○	○	○
	10	○	○	○	○	○	○	×	○	◯	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø16	5	○	○	×	○	○	○	×	○	◯	○	×	○	○	○
	10	○	○	○	○	○	○	○	○	◯	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Note: (R) 1 rod side switch, H: With 1 head side switch

Specifications

Item		MSD-K MSD-KL (with switch)			
Bore size mm		ø6	ø8	ø12	ø16
Actuation method		Double Acting Type			
Operating Fluid		Compressed Air			
Maximum operating pressure MPa		1.0			
Min. Operating Pressure MPa		0.15		0.1	
Proof pressure MPa		1.6			
Ambient Temperature °C		-10 to 60 (No freezing)			
Connection Bore	Front piping type	M3		M5	
	Rear piping type	M3		M3	
Stroke tolerance mm		+2.0 0			
Operating Piston Speed mm/s		50 to 500			
Cushion		With Rubber Cushion			
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)			
Allowable absorbed energy J		0.004	0.014	0.044	0.110

Stroke

Bore Size (mm)	Standard Stroke (mm)	Minimum stroke with 2 switches (mm)		Minimum stroke with 1 switch (mm)	
		Solid state switch	Reed switch	Solid state switch	Reed switch
ø6	5 / 10 / 15 / 20 / 25 / 30	5 (10)	10	5	5
ø8	5 / 10 / 15 / 20 / 25 / 30	5	10	5	5
ø12	5 / 10 / 15 / 20 / 25 / 30	5	10	5	5
ø16	5 / 10 / 15 / 20 / 25 / 30	5	10	5	5

*1: Only standard strokes can be manufactured.
*2: In the case of F2Y, F3Y, F3P, the minimum stroke is the dimension in parentheses.

Cylinder Weight Table

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		Weight per Switch
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	Without Switch	With Switch	
ø6	27	29	30	32	32	34	35	37	38	40	41	43	Refer to the weight stated in the switch specifications on P. 869.
ø8	29	32	34	37	39	42	44	47	48	51	53	56	
ø12	35	45	43	53	52	62	61	71	70	80	79	89	
ø16	54	70	66	82	79	95	92	108	104	120	117	133	

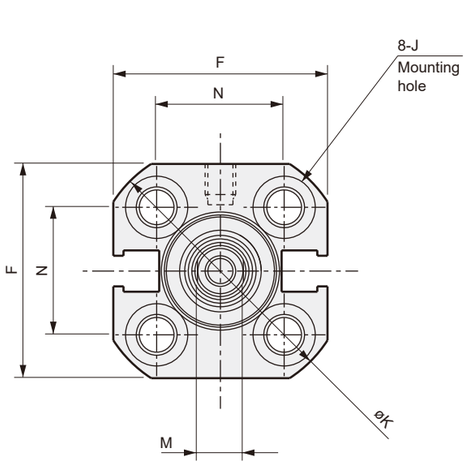
Theoretical Thrust Table

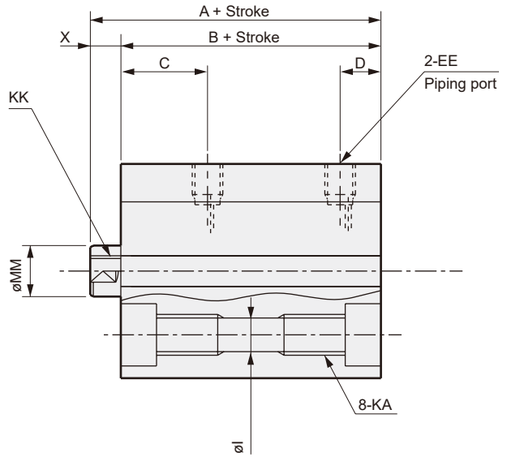
(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	2.36	3.14	4.71	6.28	7.85	9.42	11.0	12.6	14.1	15.7
ø8	Push	-	7.54	10.1	15.1	20.1	25.1	30.2	35.2	40.2	45.2	50.3
	Pull	-	4.59	6.13	9.19	12.3	15.3	18.4	21.4	24.5	27.6	30.6
ø12	Push	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2

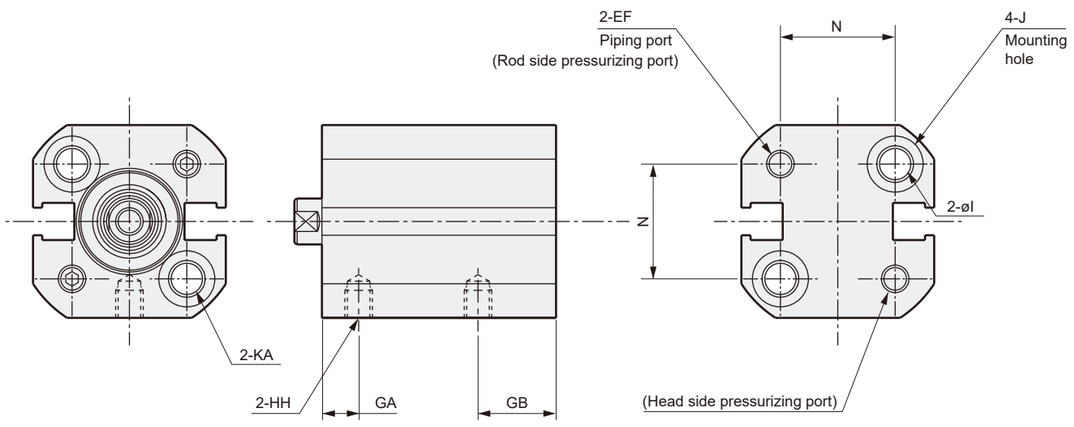
Outline Dimension Drawing

●MSD-K(L)-6/8/12





● MSD-K(L)-6/8/12-□-R (rear piping)



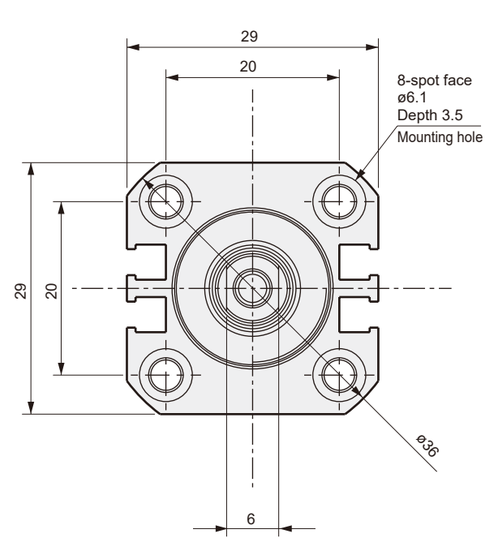
Bore size (mm)	Without Switch		With Switch		Common dimension												
	A	B	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	X
ø6	22.5	19.5	27.5	24.5	7.5	4	M3	19	3.2	Spot face ø6.1 Depth 3.5	22.5	M4 Depth 6	M2.5 depth 4	3.5	4	11	3
ø8	24	21	29	26	9	4	M3	21	3.2	Spot face ø6.1 Depth 3.5	25	M4 Depth 6	M3 Depth 5	4.5	5	12.5	3
ø12	25.5	22	30.5	27	11.5	5	M5	25	3.2	Spot face ø6.1 Depth 3.5	31	M4 Depth 6	M3 depth 6	5	6	15.5	3.5

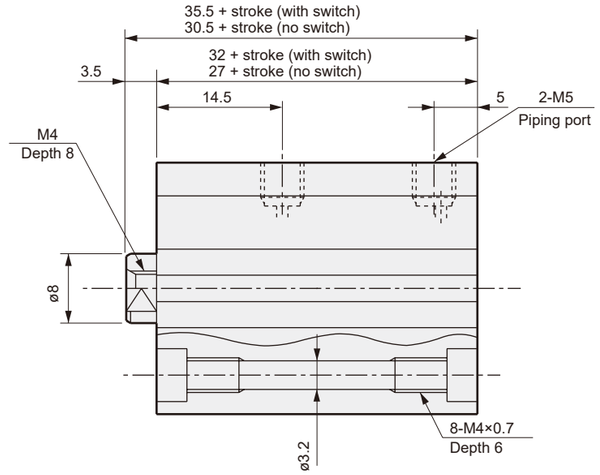
Bore size (mm)	Rear piping dimensions			
	EF	GA	GB	HH
ø6	M3	3	8.5	M3 Depth 3
ø8	M3	4.5	8.5	M3 Depth 3
ø12	M3	4	10.5	M3 Depth 3

Note: Refer to P. 820 to 824 for dimensions with switch.

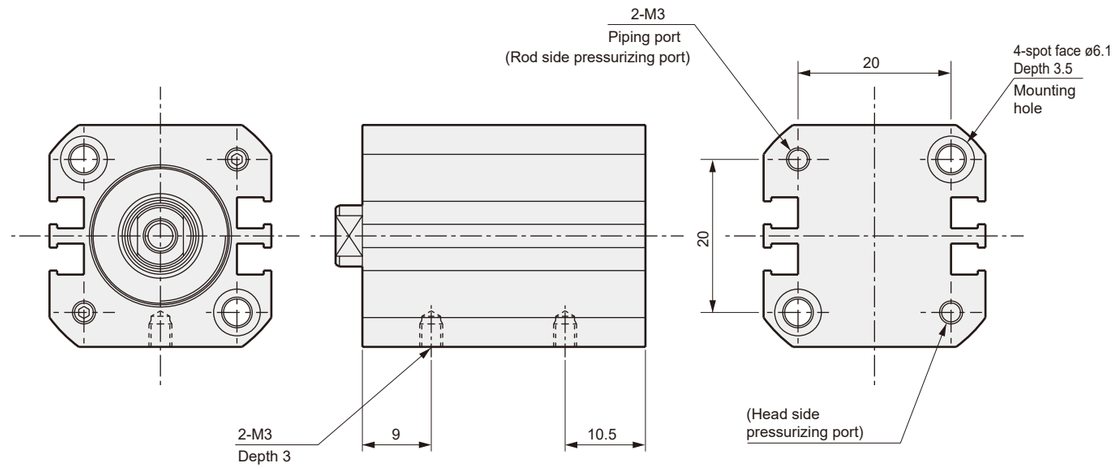
Outline Dimension Drawing

●MSD-K(L)-16



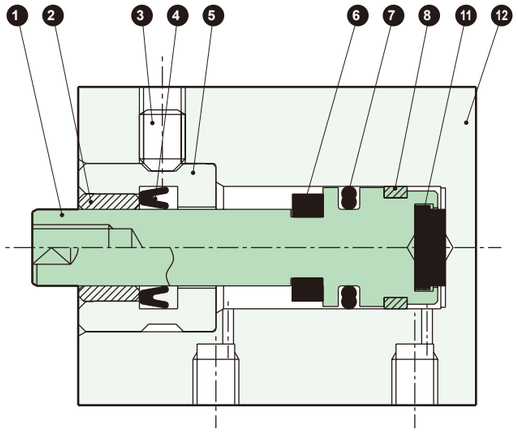


● MSD-K(L)-16-□-R (rear piping)

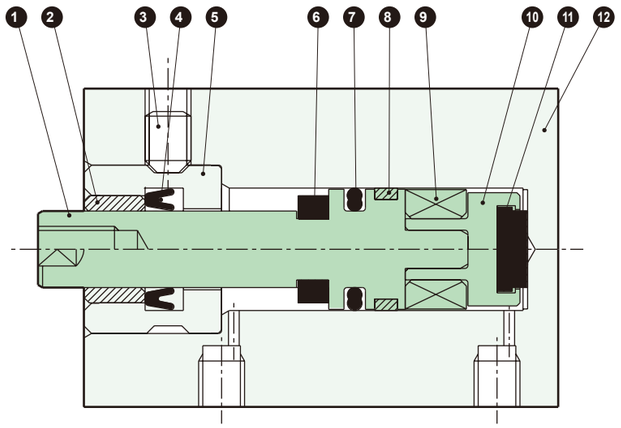


Internal Structure Diagram/Material

●MSD-K-6/8/12



●MSD-KL-6/8/12

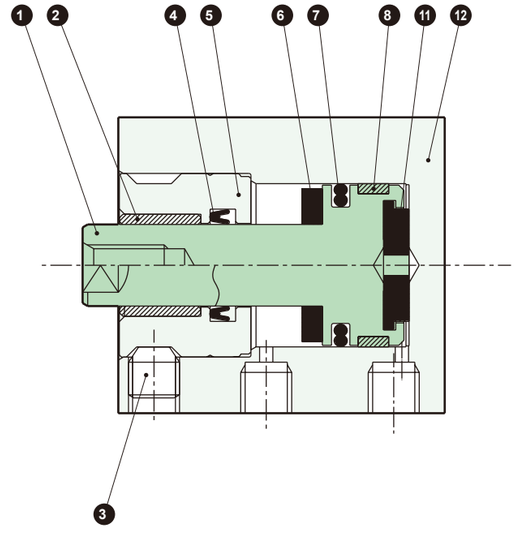


Do not disassemble

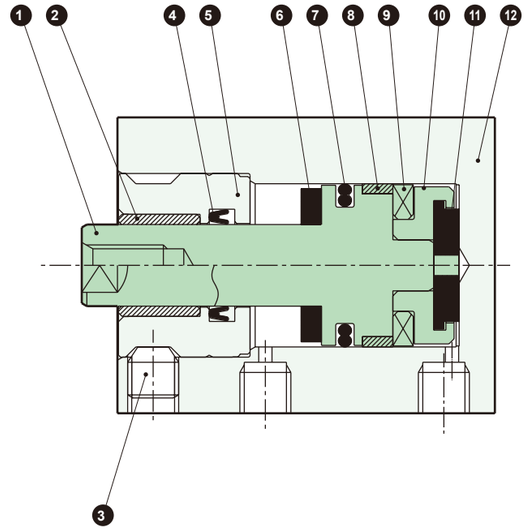
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	Piston Packing	Nitrile Rubber	
2	Bushing	Oil-Impregnated Bearing Alloy		8	Wear Ring	Polyacetal Resin	
3	Hexagon socket head set screw	Stainless Steel		9	Magnet	Plastic	
4	Rod Packing	Nitrile Rubber		10	Adapter	Aluminum Alloy	
5	Rod Metal	Stainless Steel		11	Cushion rubber H	Urethane Rubber	
6	Cushion rubber R	Urethane Rubber		12	Cylinder Body	Aluminum Alloy	Hard Anodized

Internal Structure Diagram/Material

●MSD-K-16



●MSD-KL-16



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston	Stainless Steel		7	Piston Packing	Nitrile Rubber	
2	Bushing	Oil-Impregnated Bearing Alloy		8	Wear Ring	Polyacetal Resin	
3	Hexagon socket head set screw	Stainless Steel		9	Magnet	Plastic	
4	Rod Packing	Nitrile Rubber		10	Adapter	Aluminum Alloy	
5	Rod Metal	Stainless Steel		11	Cushion rubber H	Urethane Rubber	
6	Cushion rubber R	Urethane Rubber		12	Cylinder Body	Aluminum Alloy	Hard Anodized

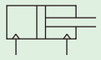


Compact Cylinder Double Acting, Ultra Low Speed Type

Single Rod Type **MSD-F Series**
●Tube bore ø6, ø8

High Load Type **MSD-KF Series**
●Tube bore ø6, ø8, ø12, ø16

Circuit Diagram Symbol



Double Acting Type

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

MSD-F - 6 - 5 ——— ( ) 6
1 2 3

With Switch
(Built-in magnet for switch)

MSD-LF - 6 - 5 - F2V - R - ( ) 6

1 Model No.
2 Bore size
3 Stroke
4 Switch Model No.
5 Number of Switches
6 Option

1 Model No.

Code	Content
MSD-F	Double Acting/Ultra Low Speed Type
MSD-KF	Double acting, High load ultra low speed type
MSD-LF	Double acting, Ultra low speed type, With switch
MSD-KLF	Double acting, High load Ultra low speed type, With switch

2 Bore size (mm)

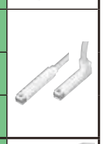
Code	Content	Model No.	
		MSD-F MSD-LF	MSD-KF MSD-KLF
6	ø6	●	●
8	ø8	●	●
12	ø12		●
16	ø16		●

3 Stroke (mm)

Code	Content
5	5
10	10
15	15
20	20
25	25
30	30

4 Switch Model No.

For switch details, please refer to P. 869. Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	
	2-Color	2-wire	-	24±10%	-	5 to 20	F2YH□	F2YV□	
		3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	
Reed	1-Color	2-wire	—	24 ± 10%	—	5 to 20	F0H□	F0V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: For models with switches, use non-magnetic (stainless steel, etc.) mounting bolts for ø6 and ø8.
*4: When using a non-contact switch with ø12 or ø16, use non-magnetic (stainless steel, etc.) through bolts.
*5: Switches other than the model numbers listed above are also available. (Custom products) For details, refer to P. 869.
*6: Depending on the relationship between cylinder mounting and stroke, it may not be possible to mount the switch. Availability is MSD-(L) F: P. 794, MSD-K (L) F: See P. 810.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)

Example) Lead wire length
1 m F2S
3 m F2S3

5 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

Code	Content	
Blank	Front piping type	Piping port 
R	Rear piping type	 Piping port

*1, *2

*1: In the case of the rear piping type, mounting on the side of the main body is possible. Also, please note that two bolts are used for mounting on the rod side and head side.
*2: For the rear piping type, only double-acting, high-load types ø12 and ø16 can be selected.

Switch Single Unit Model No. Display Method

SW - F0H

3 Switch Model No.

Specifications

Item		MSD-F / MSD-LF (with switch)		MSD-KF / MSD-KLF (with switch)			
Bore size mm		ø6	ø8	ø6	ø8	ø12	ø16
Actuation method		Double Acting/Single Rod Type					
Operating Fluid		Compressed Air					
Maximum operating pressure MPa		1.0					
Min. Operating Pressure MPa		0.15		0.15		0.1	
Proof pressure MPa		1.6					
Ambient Temperature °C		5 to 60					
Port Size	Front piping type	M3		M3		M5	
	Rear piping type	-		-		M3	
Stroke tolerance mm		$^{+0.5}_{0}$		$^{+2.0}_{0}$			
Operating Piston Speed mm/s		1 to 200					
Cushion		None		With Rubber Cushion			
Lubrication		Lubrication Not Possible					
Allowable absorbed energy J		This product cannot absorb the energy generated by an external load included to the cylinder. Use without load, select a high-load type, or provide a separate shock absorber externally.		0.004	0.014	0.044	0.110

Stroke

Bore Size (mm)	Standard Stroke (mm)	Minimum stroke with 2 switches (mm)		Minimum stroke with 1 switch (mm)	
		Solid state switch	Reed switch	Solid state switch	Reed switch
ø6	5/10/15/20/25/30	5	10	5	5
ø8	5/10/15/20/25/30	5	10	5	5
ø12	5/10/15/20/25/30	5	10	5	5
ø16	5/10/15/20/25/30	5	10	5	5

Note: Strokes other than standard are not available.

Cylinder Weight Table

Same as double acting, single rod MSD series and double acting, high load MSD-K series. See P. 796 and 811.

Theoretical Thrust Table

(Unit: N)

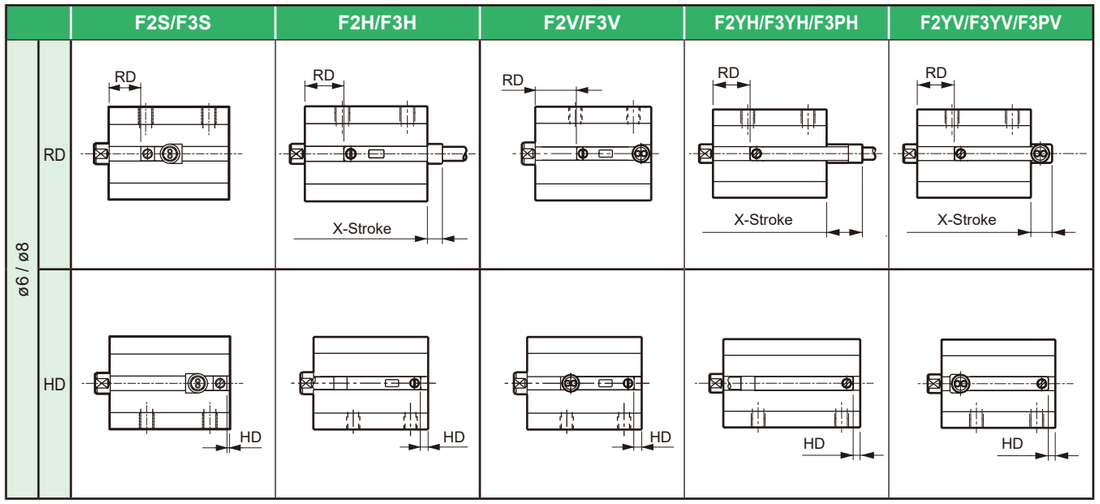
Bore Size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	2.36	3.14	4.71	6.28	7.85	9.42	11.0	12.6	14.1	15.7
ø8	Push	-	7.54	10.1	15.1	20.1	25.1	30.2	35.2	40.2	45.2	50.3
	Pull	-	4.59	6.13	9.19	12.3	15.3	18.4	21.4	24.5	27.6	30.6
ø12	Push	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2

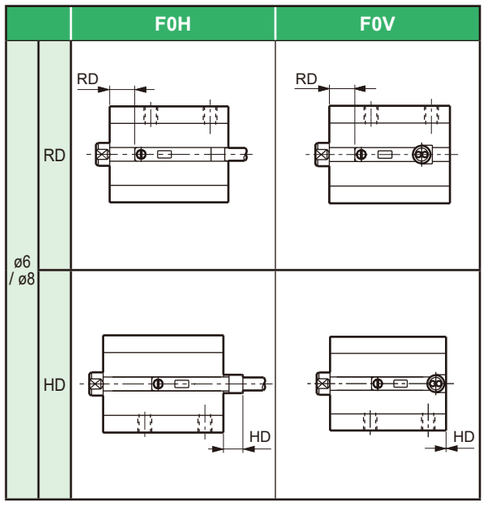
Outline Dimension Drawing

MSD-(L)F: Double acting/single rod MSD Series, MSD-K(L)F: Same as MSD-K Series (double acting/high load).
See P. 798, 812, and 813.

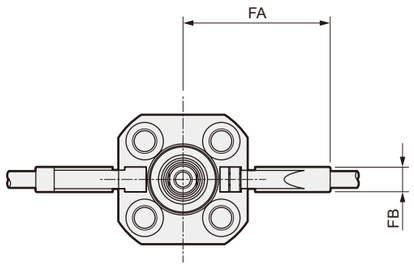
MEMO

MSD-L Series Outline Dimension Drawing with Switch





●Protrusion dimension when mounting cylinder switch F2S, F3S

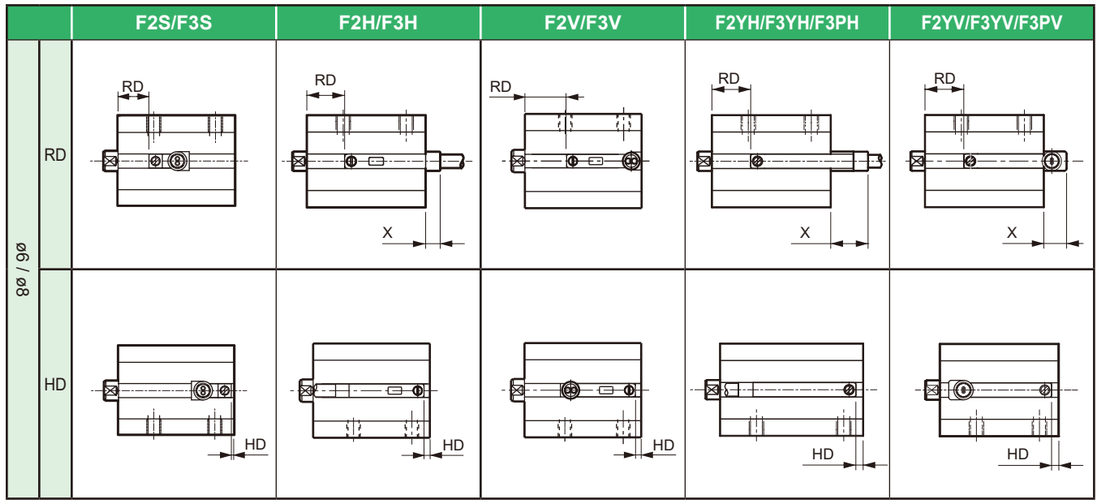


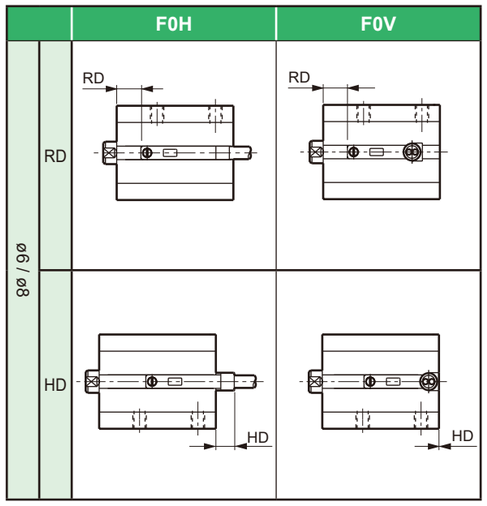
(Unit: mm)

Model	Bore size (mm)	F2S/F3S				F2H/F3H			F2V/F3V		F2YH/F3YH/F3PH			F2YV/F3YV/F3PV			F0H		F0V	
		RD	HD	FA (*2)	FB (*2)	RD	HD	X (*1)	RD	HD	RD	HD	X (*1)	RD	HD	X (*1)	RD	HD	RD	HD
MSD-L	ø6	6.5	0.5	20.6	4	7.5	1.5	7.7	7.5	1.5	7.5	1.5	12.2	7.5	1.5	9.2	3.5	3.5	3.5	0.0
	ø8	8.5	0.0	21.6	4	9.5	1.0	8.2	9.5	1.0	9.5	1.0	12.7	9.5	1.0	9.7	5.5	4.0	5.5	0.0

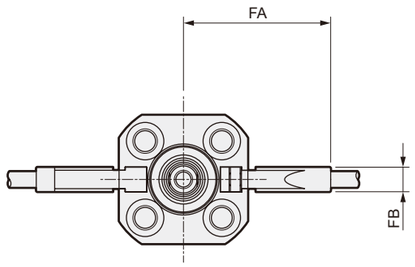
*1: X dimension is the switch protrusion dimension from the main body end face. If X-stroke is negative, there is no switch protrusion from the main body end face.
*2: For FA and FB dimensions, refer to "Protrusion Dimensions when Mounting Cylinder Switches F2S and F3S."
*3: For switch mounting dimensions, refer to the model number notation method for each variation.

MSD-XL Series Outline Dimension Drawing with Switch





●Protrusion dimension when mounting cylinder switch F2S, F3S

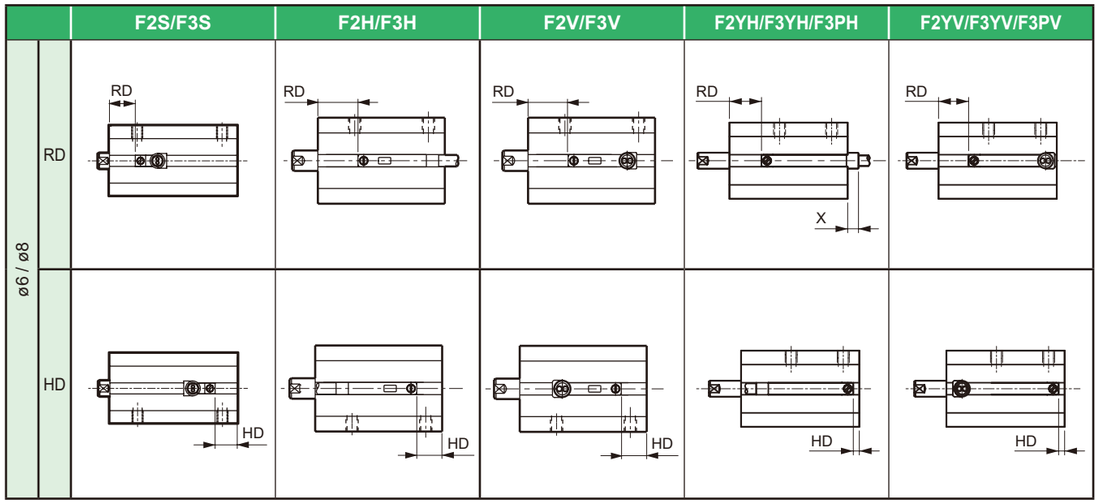


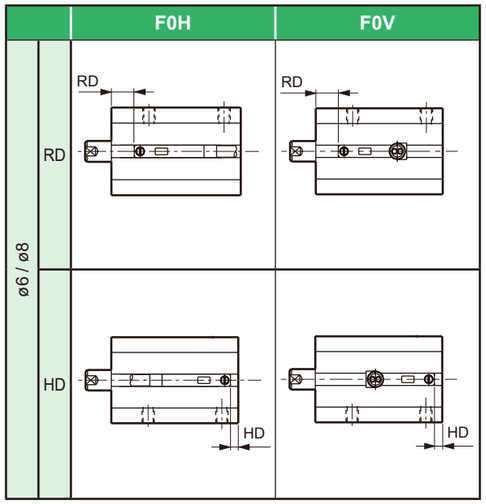
(Unit: mm)

Bore size	Switch Model No. / Maximum sensitivity position / Stroke	F2S/F3S				F2H/F3H			F2V/F3V		F2YH/F3YH/F3PH			F2YV/F3YV/F3PV			F0H		F0V	
		RD	HD	FA (*2)	FB (*2)	RD	HD	X (*1)	RD	HD	RD	HD	X (*1)	RD	HD	X (*1)	RD	HD	RD	HD
MSD-XL ø6	5	6.5	0.5	20.6	4	7.5	1.5	3.0	7.5	1.5	7.5	1.5	7.5	7.5	1.5	4.5	4.0	4.0	4.0	0
	10	11.5	0.5			12.5	1.5	-	12.5	1.5	12.5	1.5	-	12.5	1.5	-	9.0	4.0	9.0	0
MSD-XL ø8	5	8.0	0.5	21.6	4	9.0	1.5	3.0	9.0	1.5	9.0	1.5	7.5	9.0	1.5	4.5	5.5	4.0	5.5	0
	10	13.0	0.5			14.0	1.5	-	14.0	1.5	14.0	1.5	-	14.0	1.5	-	10.5	4.0	10.5	0

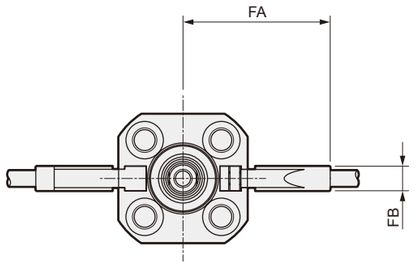
*1: X dimension is the switch protrusion dimension from the main body end face. If X dimension is not specified, there is no switch protrusion from the main body end face.
*2: For FA and FB dimensions, refer to "Protrusion Dimensions when Mounting Cylinder Switches F2S and F3S."
*3: For switch mounting dimensions, refer to the model number notation method for each variation.

MSD-YL Series Outline Dimension Drawing with Switch





●Protrusion dimension when mounting cylinder switch F2S, F3S

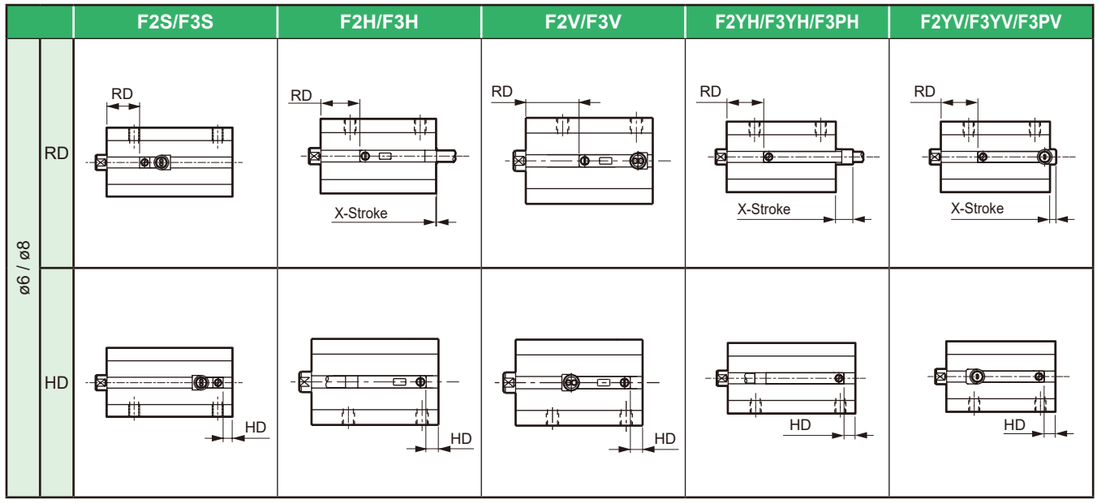


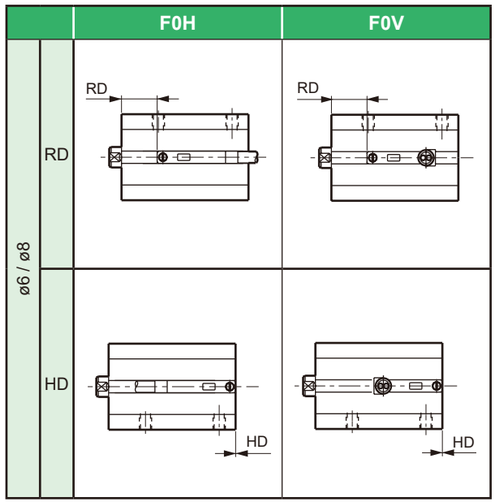
(Unit: mm)

Switch Model No. / Maximum sensitivity position / Stroke / Bore size			F2S/F3S RD	F2S/F3S HD	F2S/F3S FA (*2)	F2S/F3S FB (*2)	F2H/F3H RD	F2H/F3H HD	F2V/F3V RD	F2V/F3V HD	F2YH/F3YH/F3PH RD	F2YH/F3YH/F3PH HD	F2YH/F3YH/F3PH X (*1)	F2YV/F3YV/F3PV RD	F2YV/F3YV/F3PV HD	F0H RD	F0H HD	F0V RD	F0V HD
MSD-YL	ø6	5	7.0	6.0	20.6	4	8.0	7.0	8.0	7.0	8.0	7.0	2.7	8.0	7.0	3.5	2.5	3.5	2.5
		10	7.0	11.0			8.0	12.0	8.0	12.0	8.0	12.0	-	8.0	12.0	3.5	7.5	3.5	7.5
	ø8	5	9.0	5.0	21.6	4	10.0	6.0	10.0	6.0	10.0	6.0	3.2	10.0	6.0	5.5	2.0	5.5	2.0
		10	9.0	10.0			10.0	11.0	10.0	11.0	10.0	11.0	-	10.0	11.0	5.5	7.0	5.5	7.0

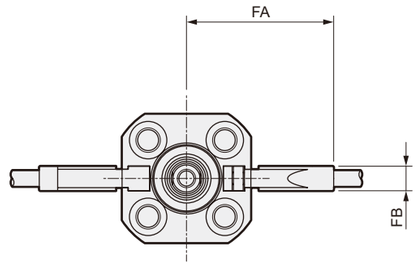
*1: X dimension is the switch protrusion dimension from the main body end face. If X dimension is not specified, there is no switch protrusion from the main body end face.
*2: For FA and FB dimensions, refer to "Protrusion Dimensions when Mounting Cylinder Switches F2S and F3S."
*3: For switch mounting dimensions, refer to the model number notation method for each variation.

MSD-KL Series (ø6 / ø8) Outline Dimension Drawing with Switch





●Protrusion dimension when mounting cylinder switch F2S, F3S

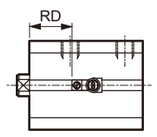
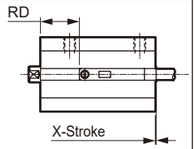
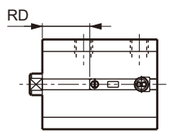
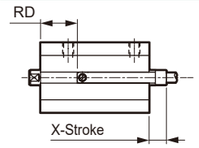
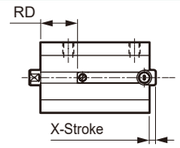
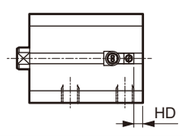
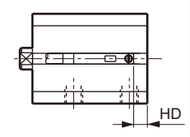
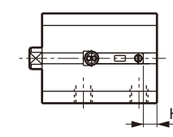
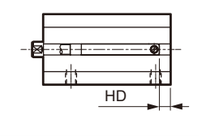
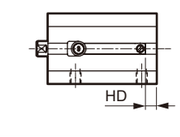
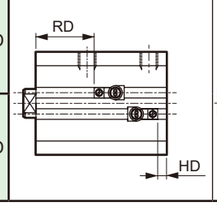
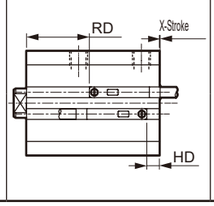
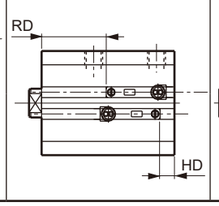
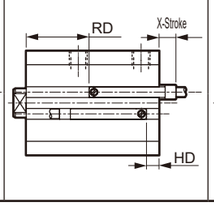
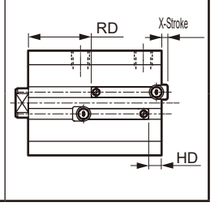


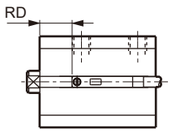
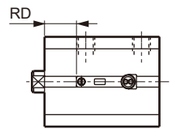
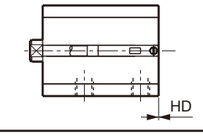
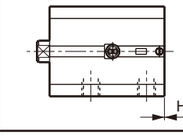
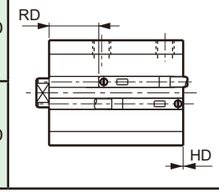
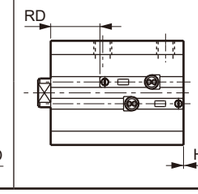
(Unit: mm)

Model	Bore size (mm)	F2S/F3S RD	F2S/F3S HD	F2S/F3S FA (*2)	F2S/F3S FB (*2)	F2H/F3H RD	F2H/F3H HD	F2H/F3H X (*1)	F2V/F3V RD	F2V/F3V HD	F2YH/F3YH/F3PH RD	F2YH/F3YH/F3PH HD	F2YH/F3YH/F3PH X (*1)	F2YV/F3YV/F3PV RD	F2YV/F3YV/F3PV HD	F2YV/F3YV/F3PV X (*1)	F0H RD	F0H HD	F0V RD	F0V HD
MSD-KL	ø6	9	2.5	20.6	4	10	3.5	5.2	10	3.5	10	3.5	9.7	10	3.5	6.7	6.0	0	6.0	0
	ø8	11.5	1.5	21.6	4	12.5	2.5	6.2	12.5	2.5	12.5	2.5	10.7	12.5	2.5	7.7	8.5	0	8.5	0

*1: X dimension is the switch protrusion dimension from the main body end face. If X-stroke is negative, there is no switch protrusion from the main body end face.
*2: For FA and FB dimensions, refer to "Protrusion Dimensions when Mounting Cylinder Switches F2S and F3S."
*3: For switch mounting dimensions, refer to the model number notation method for each variation.

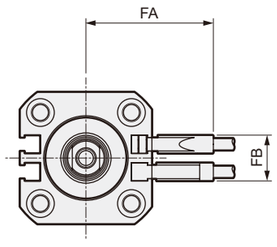
MSD-KL Series (ø12, ø16) (1-color indication, 2-color indication) Outline Dimension Drawing with Switch

		F2S/F3S	F2H/F3H	F2V/F3V	F2YH/F3YH/F3PH	F2YV/F3YV/F3PV
ø12	RD					
	HD					
ø16	RD					
	HD					

		F0H	F0V
ø12	RD		
	HD		
ø16	RD		
	HD		

●Protrusion dimension when mounting cylinder switch F2S, F3S

• ø12, ø16



(Unit: mm)

Model	Bore size (mm)	F2S/F3S				F2H/F3H			F2V/F3V		F2YH/F3YH/F3PH			F2YV/F3YV/F3PV			F0H		F0V	
		RD	HD	FA (*2)	FB (*2)	RD	HD	X (*1)	RD	HD	RD	HD	X (*1)	RD	HD	X (*1)	RD	HD	RD	HD
MSD-KL	ø12	12	2.5	23.6	4	13	3.5	5.7	13	3.5	13	3.5	10.2	13	3.5	7.2	9.0	0	9.0	0
	ø16	16.5	2.5	25.6	10	17.5	3.5	5.2	17.5	3.5	17.5	3.5	9.7	17.5	3.5	6.7	14.0	0	14.0	0

*1: X dimension is the switch protrusion dimension from the main body end face. If X-stroke is negative, there is no switch protrusion from the main body end face.
*2: For FA and FB dimensions, refer to "Protrusion Dimensions when Mounting Cylinder Switches F2S and F3S."
*3: For switch mounting dimensions, refer to the model number notation method for each variation.

MEMO

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

Individual Precautions: Small compact cylinder MSD Series

During Design/Selection

1. Common

Caution

■ Please consult us if you intend to use the cylinder as a stopper.

■ When selecting a cylinder switch, refer to the "Switch Usability Selection Table" on P. 794, 795, and 810.

2. Single acting MSD-X/Y

Caution

■ Do not apply a load when the piston rod is retracting for the push type, or when the piston rod is extending for the retracting type.
The built-in cylindrical spring in the cylinder only has enough force to return the piston rod, so if a load is applied, it will not return to the stroke end.

■ Do not leave pressurized.
If left pressurized, the piston rod may not return by spring force when the pressure is released.

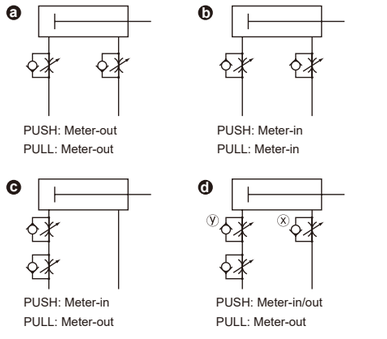
3. Fine speed MSD-(K) F

Caution

■ Use without lubrication.
Lubrication may change characteristics.

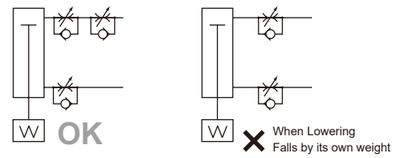
■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed.
Use with a load factor of 50% or less.

■ Speed control is stable with a meter-out circuit.
When driving a single-rod cylinder at creep speed in the PUSH direction, if the load resistance is small, a flying-out phenomenon may occur at the start of operation. As countermeasures, use circuits ⓑ, ⓒ or ⓓ. In addition, the ⓓ circuit is the most stable.

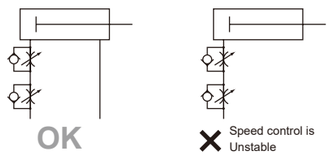


ⓓ Speed adjustment method for PUSH operation of the circuit:
1. Speed setting with x-speed controller
2. Throttle with y-speed controller until lunging stops.
3. Reconfirmation of speed

(*1) When comparing ⓑ ⓒ ⓓ, operation is the most stable with the ⓓ circuit.
(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.



(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)
Lurching occurs in the following cases:
• Thrust > Resistance
*Resistance: Thrust due to residual pressure on exhaust side (For creep speed type, intake pressure = residual pressure) + { For horizontal use: Frictional force due to load / For vertical use: Dead weight of the load }

■ Do not apply lateral load to the cylinder.
Operation becomes unstable when lateral load is applied.

■ Avoid use in locations with vibration.
Operation becomes unstable due to the influence of vibration.

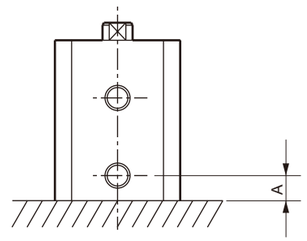
During Use

1. Common

Caution

■ Mount the switch observing the tightening torque.
If tightened beyond the tightening torque range, mounting screws, mounting brackets, switches, etc. may be damaged. Also, if tightened below the tightening torque range, the switch mounting position may shift.
Tightening torque: 29.4 (N·m)

■ During piping
Precautions for piping speed controllers and fittings
There are restrictions on usable piping fittings, so please refer to the table below.



Fitting Usability Table

Code / Bore Size (mm)	Port Size	Port position Dimension A	Usable speed Controller/Fitting	Fitting outer diameter
ø6 ø8	M3	4	SC3W-M3-3 SC3W-M3-4 SC3U-M3-3 SC3U-M3-4	ø8 or less
			GWS3-M3-S GWS4-M4-S	
			FTS4-M3	
ø12 ø16	M5	5	SC3W-M5-3 SC3W-M5-4 SC3W-M5-6 SC3U-M5-3 SC3U-M5-4 SC3U-M5-6	ø10 or less
			GWS4-M5-S GWS6-M5-S	
			FTS4-M5 FTS6-M5	

■ During installation
Please do not make dents, scratches, etc. on the main body (tube) mounting surface and table surface that would impair flatness. The flatness of the mating side to be included to the table should be 0.05 mm or less.

2. Single acting MSD-X/Y

Caution

■ A breather hole is provided on the main body, so be careful not to block it during installation.
This will cause malfunction.

3. Fine speed MSD-(K) F

Caution

■ Install the speed controller near the cylinder.
If installed far from the cylinder, the speed will become unstable. Use SC-M3/M5-F, SC3W, or SCD-M3/M5-F series speed controllers.

■ Adjust alignment etc. so that no lateral load is applied to the cylinder. Also, adjust and install so that there is no twisting with respect to the sliding guide.
Operation will become unstable if there are fluctuations in load or resistance. Guides with a large difference between static friction and dynamic friction will result in unstable operation.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

Space saving structure

FC□

Flat Cylinder Compact Demi

ø25, ø32, ø40, ø50, ø63



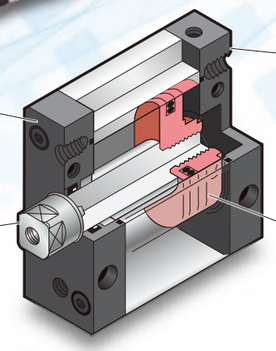
CONTENTS

Product Introduction	830
Series variation	832
Variation/Option Combination Availability Table	834
● Single acting/push (FCS)	836
● Single acting/pull (FCH)	836
● Double acting/single rod (FCD)	846
● Double acting/double rod (FCD-D)	852
● Double acting/cushioned (FCD-K)	858
Optional dimensions	842
Outer Dimensions Diagram with Switch	864
Custom Products	865
⚠ Precautions for Use	866

Space-saving and non-rotating with oval piston

ø25 ø32 ø40 ø50 ø63





● Rod cover

● Head cover
Mounting holes are provided so that it can be mounted from 5 directions according to the space.

● Piston rod end
Female thread or male thread can be selected (Please note that the width across flats is not fixed.)

● Oval piston adopted
Cylinder width reduced by approx. 40%
Non-rotating, no need for anti-rotation mechanism

Features

Mountable from 5 directions

Mounting holes are provided in the cover, allowing direct mounting from 5 directions without mounting brackets.

Easy mounting alignment

An option with a spigot joint on the rod cover is available.

Oval piston adopted

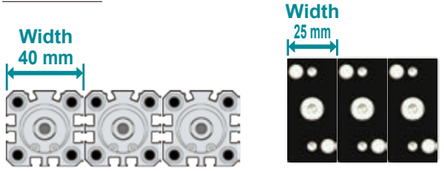
The oval piston structure achieves piston rod non-rotation and high allowable rotational torque.

Reference:
Non-rotation accuracy equivalent to ø40 = ±0.5°
Allowable rotational torque = 2.5 N·m
*The "non-rotation accuracy" value is the value when a torque load of 10% of the "allowable rotational torque" is applied to the tip of the piston rod.

Space-saving

Comparison of width between SSD2 ø25 and FCD ø25

The width dimension is reduced to approximately 60% compared to a compact cylinder of the same bore size.



Comparison of height between SSD2 ø25 and FCD ø50

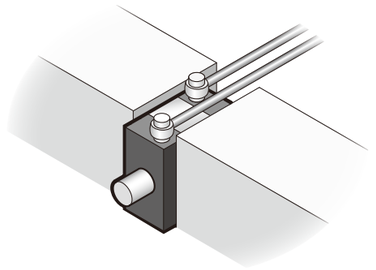
The height of FCD ø50 is 39 mm, which is 1 mm lower than the height of SSD ø25.



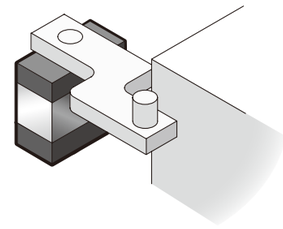
Main application examples utilizing the flat shape

Various automations that were previously impossible are now possible.

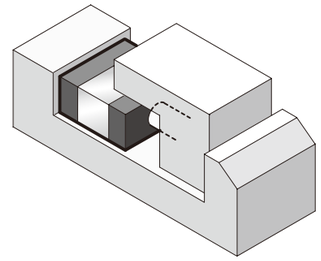
● Installation in narrow spaces



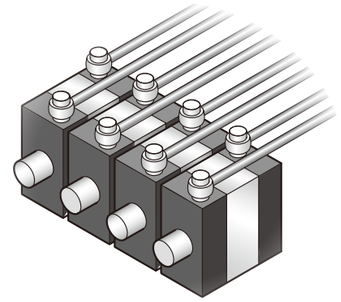
● Positioning when there are obstacles (non-rotating function)



● Clamp



● Use side-by-side



FC□ Series Product Lineup

: Standard

Variation	Model No.	Bore size (mm)	Standard Stroke (mm)
Single Acting, Push Type with Switch	FCS FCS-L	Equivalent to ø25, ø32	5 10 15 20 25 30 40 50
		Equivalent to ø40, ø50, ø63	
Single Acting, Retracting Type with Switch	FCH FCH-L	Equivalent to ø25, ø32	
		Equivalent to ø40, ø50, ø63	
Double Acting, Single Rod Type with Switch	FCD FCD-L	Equivalent to ø25, ø32, ø40, ø50, ø63	
Double Acting, Double Rod Type with Switch	FCD-D FCD-DL	Equivalent to ø25, ø32, ø40, ø50, ø63	
Double acting, With cushion With Switch	FCD-K FCD-KL	Equivalent to ø25, ø32, ø40, ø50, ø63	

Flat Cylinder Compact Demi FC□ Series

●: Standard, ◎: Option, : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Standard Stroke (mm)									Min. Stroke (mm)	Intermediate stroke (per mm)	Maximum Stroke (mm)	Option			Switch	Page
			5	10	15	20	25	30	40	50					Piston Rod Material (Stainless Steel) M	Rod end male thread N	With spigot joint R		
Single Acting, Push Type with Switch	FCS FCS-L	Equivalent to ø25, ø32	●	●								1	1	10	◎	◎	◎	◎	836
		Equivalent to ø40, ø50, ø63		●		●								20	◎	◎	◎	◎	
Single Acting, Retracting Type with Switch	FCH FCH-L	Equivalent to ø25, ø32	●	●								1	1	10	◎	◎	◎	◎	836
		Equivalent to ø40, ø50, ø63		●		●								20	◎	◎	◎	◎	
Double Acting, Single Rod Type with Switch	FCD FCD-L	Equivalent to ø25, ø32, ø40, ø50, ø63	●	●	●	●	●	●	●	●		1	1	50	◎	◎	◎	◎	846
Double Acting, Double Rod Type with Switch	FCD-D FCD-DL	Equivalent to ø25, ø32, ø40, ø50, ø63	●	●	●	●	●	●	●	●		1	1	50	◎	◎	◎	◎	852
Double acting, With cushion, With switch	FCD-K FCD-KL	Equivalent to ø25, ø32, ø40, ø50, ø63	●	●	●	●	●	●	●	●		1	1	150	◎	◎	◎	◎	858

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

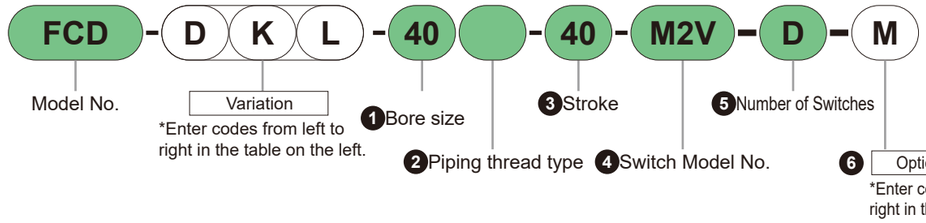
Combination Availability Table for Variations and Option Items

◎Mark: Option
○Mark: Custom Products
△Mark: Manufacturable depending on conditions (Please consult)
×Mark: Not manufacturable

Category		Category	Variation								Piping thread			Option			
			Double Acting Basic Type	Single Acting, Push Type	Single Acting, Retracting Type	Double Acting Double Rod Type	Double acting with cushion	With Cylinder Switch		NPT *1	G *1		Piston Rod Material (Stainless Steel)	Rod end male thread	With spigot joint	
		Code	None	S	H	D	K	L		N	G		M	N	R	
Variation	Double Acting Basic Type	Blank						◎		○	○		◎	◎	◎	
	Single Acting, Push Type	FCS			×	×	×	◎		○	○		◎	◎	◎	
	Single Acting, Retracting Type	FCH				×	×	◎		○	○		◎	◎	◎	
	Double Acting Double Rod Type	FCD-D					○	◎		○	○		◎	◎	◎	
	Double acting with cushion	FCD-K						◎		○	○		◎	◎	◎	
	With Cylinder Switch	L								○	○		◎	◎	◎	
Piping thread	NPT *1	N									×		○	○	○	
	G *1	G											○	○	○	
Option	Piston Rod Material (Stainless Steel)	M												◎	○	
	Rod end male thread	N													◎	
	With spigot joint	R														
Accessories	Cylinder Switch	Separately Shown	×	×	×	×	×	◎		○	○		◎	◎	◎	

*1: ø25 and ø32 cannot be manufactured.

[Model Number Notation Example]



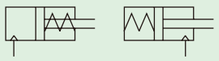
Model No.: Flat cylinder
● Variation Double rod/cushioned/with switch
1 Bore size: ø40 mm or equivalent
2 Port Thread Type: Rc Thread
3 Stroke: 40 mm
4 Switch Model No. Solid State M2V, Lead wire 1 m
5 Number of Switches: With 2 pcs.
6 Option: Piston Rod Material (Stainless Steel)



Flat Cylinder Compact Demi Single Acting, Push Type / Single Acting, Retracting Type

FCS Series / FCH Series

● Tube bore: ø25, ø32, ø40, ø50, ø63

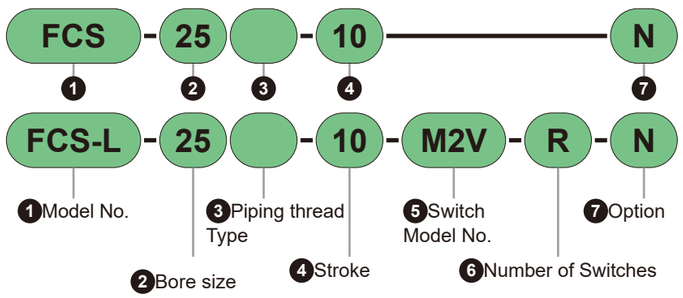
Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

With Switch
(Built-in magnet for switch)



1 Model No.

Code	Content
FCS	Single Acting, Push Type
FCS-L	Single Acting/Push Type/With Switch
FCH	Single Acting, Retracting Type
FCH-L	Single Acting/Retracting Type/With Switch

2 Tube Inner Diameter (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32
40	Equivalent to ø40
50	Equivalent to ø50
63	Equivalent to ø63

3 Piping thread type

Code	Content
Blank	M5 (Equivalent to ø25, ø32)
	Rc thread (Equivalent to ø40 to ø63)
NN	NPT thread (custom order) (Equivalent to ø40 to ø63)
GN	G thread (custom order) (Equivalent to ø40 to ø63)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
Equivalent to ø25, ø32	1 to 10	Every 1 mm
Equivalent to ø40 to ø63	1 to 20	

***1: For the minimum stroke with switch, see P. 838.**

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 L-shape
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 30	M2V□
	2-Color		—	10 to 30	—	5 to 30	M2WV□
	1-Color	3-wire (NPN)	—	30 or less	—	100 or less	M3V□
	2-Color		—	30 or less	—	100 or less	M3WV□
	1 color (customized product)	3-wire (PNP)	—	30 or less	—	100 or less	M3PV□
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	M0V□
	No Indicator LED		110	5/12/24	20 or less	50 or less	M5V□



*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m M0V
3 m M0V 3
5 m M0V 5

6 Number of Switches

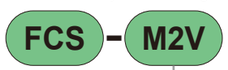
Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
M	Piston Rod Material (Stainless Steel)	
N	Rod end male thread	
R	With spigot joint	

Switch Single Unit Model No. Display Method

● Switch body + Mounting bracket set



● Switch body only



● Mounting bracket set



Specifications

Item	FCS / FCS-L					FCH / FCH-L				
Bore size mm	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Actuation method	Single acting push type					Single acting retracting type				
Operating Fluid	Compressed Air									
Maximum operating pressure MPa	0.7									
Min. Operating Pressure MPa	0.12									
Proof pressure MPa	1.05									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	M5		Rc1/8		Rc1/4	M5		Rc1/8		Rc1/4
Stroke tolerance mm	+0.5 (to 50) 0									
Operating Piston Speed mm/s	50 to 500									
Cushion	None									
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable absorbed energy J	0.015	0.02	0.026	0.04	0.05	0.015	0.02	0.026	0.04	0.05

Note: Do not leave single acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released.

Non-rotation accuracy / Allowable rotational torque

Item	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Non-rotation accuracy *2	±1°	±0.8°	±0.5°	±0.5°	±0.5°
Allowable rotational torque N·m	1	1.6	2.5	3.9	5.9

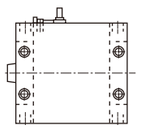
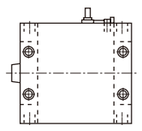
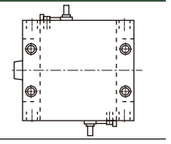
*1: Avoid use where rotational torque is applied impulsively or where the direction of torque load changes impulsively.
*2: The "non-rotation accuracy" value is the value when a torque load of 10% of the "allowable rotational torque" is applied to the tip of the piston rod.

Stroke

Model No.	Bore Size (mm)	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)
FCS	Equivalent to ø25, ø32	5, 10	10	1
FCH	Equivalent to ø40, ø50, ø63	10, 20	20	

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: The minimum stroke varies depending on the switch mounting method. Please refer to the table below.

Min. Stroke with Switch

With 1 pc		With 2 pcs
Rod Side Mounting	Head Side Mounting	For different surface mounting
		
10 mm		15 mm

FCS/FCH Spring load

(Unit: N)

Bore Size (mm)	Stroke (mm)	At 0 Stroke	At Full Stroke Operation
Equivalent to ø25	5	27.4	35.3
	10	19.6	
Equivalent to ø32	5	36	47.5
	10	24.5	
Equivalent to ø40	10	38.5	47.6
	20	29.4	
Equivalent to ø50	10	56.5	74.9
	20	38.2	
Equivalent to ø63	10	92.2	119.8
	20	61.7	

Cylinder Weight

(Unit: g)

Item	Product Weight when stroke (S) = 0 mm				Switch weight	Weight of mounting bracket	Added Weight per S = 10 mm
	FCS		FCH				
Bore Size (mm)	Without Switch	With Switch	Without Switch	With Switch			
Equivalent to ø25	155	217	135	197	Refer to the weight stated in the switch specifications on P. 869.	2	26
Equivalent to ø32	220	310	190	280			37
Equivalent to ø40	345	468	310	433			46
Equivalent to ø50	545	733	485	673			71
Equivalent to ø63	1090	1226	965	976			90

(Example) Product Weight of FCS-32-10
- Product Weight at S=0 mm ..... 220 g
- Added weight at S=10 mm ..... 37 g × $\frac{10}{10}$ = 37 g
- Product Weight ..... 220 g + 37 g = 257 g

Theoretical Thrust Table

●FCS

(Unit: N)

Bore Size (mm)	Operating Pressure MPa					
	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to ø25	63.2	1.12×10^2	1.62×10^2	2.11×10^2	2.60×10^2	3.09×10^2
Equivalent to ø32	1.08×10^2	1.85×10^2	2.63×10^2	3.41×10^2	4.18×10^2	4.96×10^2
Equivalent to ø40	2.11×10^2	3.40×10^2	4.69×10^2	5.98×10^2	7.27×10^2	8.56×10^2
Equivalent to ø50	3.11×10^2	5.05×10^2	6.98×10^2	8.91×10^2	1.08×10^3	1.28×10^3
Equivalent to ø63	5.16×10^2	8.34×10^2	1.15×10^3	1.47×10^3	1.79×10^3	2.10×10^3

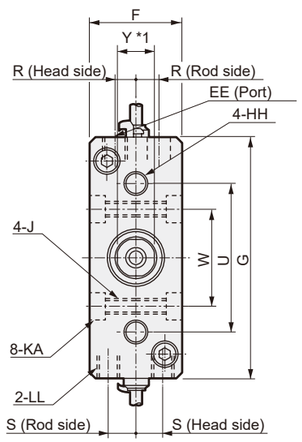
●FCH

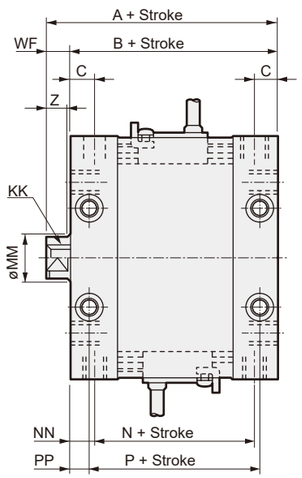
(Unit: N)

Bore Size (mm)	Operating Pressure MPa					
	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to ø25	40.6	78.5	1.16×10^2	1.54×10^2	1.92×10^2	2.30×10^2
Equivalent to ø32	67.5	1.25×10^2	1.83×10^2	2.40×10^2	2.98×10^2	3.55×10^2
Equivalent to ø40	1.70×10^2	2.79×10^2	3.88×10^2	4.97×10^2	6.06×10^2	7.15×10^2
Equivalent to ø50	2.49×10^2	4.10×10^2	5.72×10^2	7.34×10^2	8.96×10^2	1.06×10^3
Equivalent to ø63	4.53×10^2	7.39×10^2	1.03×10^3	1.31×10^3	1.60×10^3	1.88×10^3

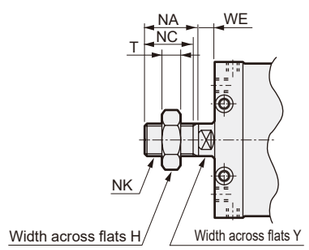
Outline Dimension Drawing

●FCS (Single acting push type, without switch)
●FCS-L (Single acting push type, with switch)





● Rod end male thread outline dimension drawing
(Option Code N)



Code / Bore Size (mm)	Dimension without switch A	B	N	P	Dimension with switch A	B	N	P	Common dimension C	EE	F	G	HH	J	KA
Equivalent to ø25	42	37	25	29	57	52	40	44	7.5	M5 Depth 4	25	55	M5 depth 7	M5 (Through)	—
Equivalent to ø32	45	38	26	30	60	53	41	45	7.5	M5 Depth 4	28	65	M6 Depth 8	M5 (Through)	—
Equivalent to ø40	54	46	30	34	69	61	45	49	8.5	Rc1/8	32	83	M8 Depth 10	M6 (Through)	9.5 Counterbore Depth 5.4
Equivalent to ø50	60.5	51	34	32	75.5	66	49	47	10.5	Rc1/8	39	101	M10 Depth 12	M8 (Through)	11 Counterbore Depth 6.5
Equivalent to ø63	71.5	62	42	42	86.5	77	57	57	11.5	Rc1/4	49	125	M12 Depth 15	M12 (Through)	17.5 Counterbore Depth 10.5

Code / Bore Size (mm)	Common dimension KK	LL	MM	NN	PP	R	S	U	W	WF	Y	Z
Equivalent to ø25	M5 Depth 9	M5 depth 7	12	6	4	4.7	7	38	24	5	10	5
Equivalent to ø32	M6 depth 11	M6 Depth 8	16	6	4	6.2	8	45	30	7	14	7
Equivalent to ø40	M8 depth 13	M8 Depth 10	16	8	6	7.5	9	52	34	8	14	7
Equivalent to ø50	M8 depth 13	M10 Depth 12	20	8.5	9.5	9	10	62	40	9.5	17	8
Equivalent to ø63	M10 depth 15	M12 Depth 18	20	10	10	10.5	14	86	54	9.5	17	8

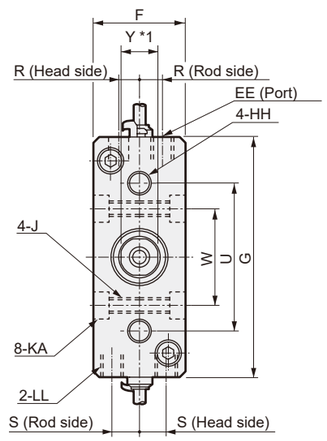
*1: The width across flats of the Y portion is not fixed.
***2: For dimensions of models with switches, see P. 864.**

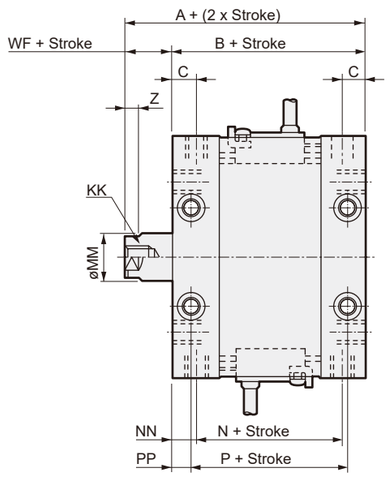
● Rod end male thread dimension table

Code / Bore Size (mm)	H	NA	NC	NK	T	WE
Equivalent to ø25	17	22	20	M10 × 1.25	6	5
Equivalent to ø32	22	22	20	M14 × 1.5	8	7
Equivalent to ø40	22	22	20	M14 × 1.5	8	7
Equivalent to ø50	27	28	26	M18 × 1.5	11	8
Equivalent to ø63	27	28	26	M18 × 1.5	11	8

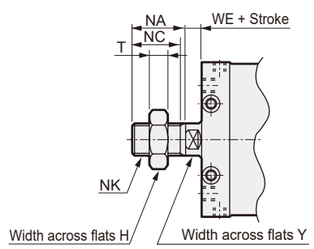
Outline Dimension Drawing

●FCH (Single acting retracting type, without switch)
●FCH-L (Single acting retracting type, with switch)





● Rod end male thread outline dimension drawing
(Option Code N)



Code / Bore Size (mm)	Dimension without switch A	B	N	P	Dimension with switch A	B	N	P	Common dimension C	EE	F	G	HH	J	KA
Equivalent to ø25	37	32	20	24	52	47	35	39	7.5	M5 Depth 4	25	55	M5 depth 7	M5 (Through)	—
Equivalent to ø32	40	33	21	25	55	48	36	40	7.5	M5 Depth 4	28	65	M6 Depth 8	M5 (Through)	—
Equivalent to ø40	49	41	25	29	64	56	40	44	8.5	Rc1/8	32	83	M8 Depth 10	M6 (Through)	9.5 Counterbore Depth 5.4
Equivalent to ø50	55.5	46	29	27	70.5	61	44	42	10.5	Rc1/8	39	101	M10 Depth 12	M8 (Through)	11 Counterbore Depth 6.5
Equivalent to ø63	66.5	57	37	37	81.5	72	52	52	11.5	Rc1/4	49	125	M12 Depth 15	M12 (Through)	17.5 Counterbore Depth 10.5

Code / Bore Size (mm)	Common dimension KK	LL	MM	NN	PP	R	S	U	W	WF	Y	Z
Equivalent to ø25	M5 Depth 9	M5 depth 7	12	6	4	4.7	7	38	24	5	10	5
Equivalent to ø32	M6 depth 11	M6 Depth 8	16	6	4	6.2	8	45	30	7	14	7
Equivalent to ø40	M8 depth 13	M8 Depth 10	16	8	6	7.5	9	52	34	8	14	7
Equivalent to ø50	M8 depth 13	M10 Depth 12	20	8.5	9.5	9	10	62	40	9.5	17	8
Equivalent to ø63	M10 depth 15	M12 Depth 18	20	10	10	10.5	14	86	54	9.5	17	8

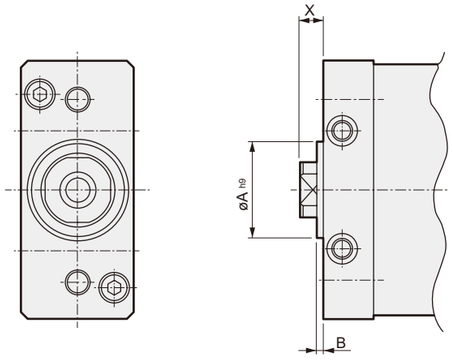
*1: The width across flats of the Y portion is not fixed.
***2: For dimensions of models with switches, see P. 864.**

● Rod end male thread dimension table

Code / Bore Size (mm)	H	NA	NC	NK	T	WE
Equivalent to ø25	17	22	20	M10 × 1.25	6	5
Equivalent to ø32	22	22	20	M14 × 1.5	8	7
Equivalent to ø40	22	22	20	M14 × 1.5	8	7
Equivalent to ø50	27	28	26	M18 × 1.5	11	8
Equivalent to ø63	27	28	26	M18 × 1.5	11	8

Outer Dimensions Diagram with Option

● Dimension drawing with spigot joint (Option Code R)



Code / Bore Size (mm)	A	B	X
Equivalent to ø25	20	$2^{0}_{-0.4}$	5
Equivalent to ø32	24	$2^{0}_{-0.4}$	7
Equivalent to ø40	28	$2^{0}_{-0.4}$	8
Equivalent to ø50	32	$2^{0}_{-0.4}$	9.5
Equivalent to ø63	32	$2^{0}_{-0.4}$	9.5

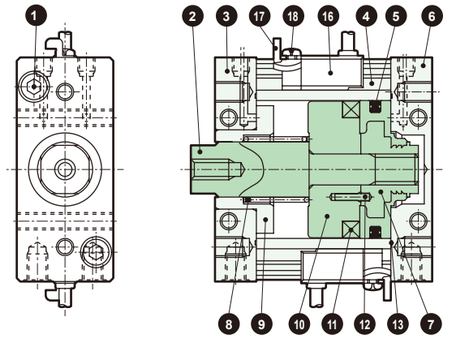
MEMO

Space-Saving Type
SSD2
SSG
SSD
CAT
MDC2
SMG
MSD
FC□
Cylinder Switch
Ending

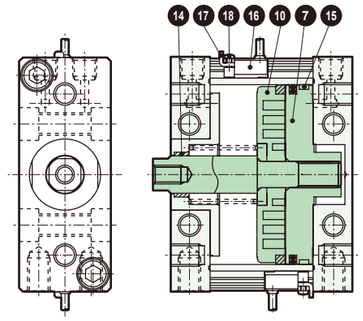
Internal Structure Diagram/Material

●FCS-L (Single acting, Push type, With switch)

Equivalent to ø25 to ø40

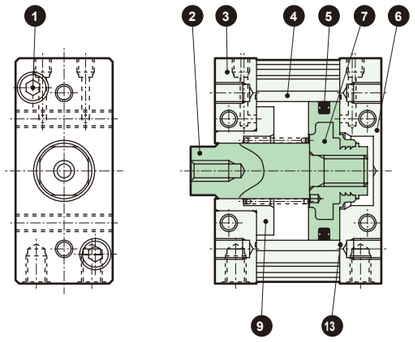


Equivalent to ø50 to ø63

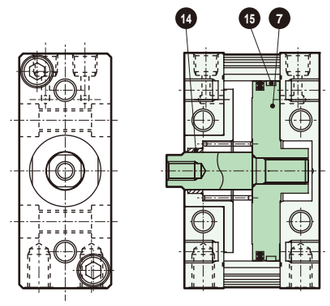


●FCS (Single acting, Push type)

Equivalent to ø25 to ø40



Equivalent to ø50 to ø63

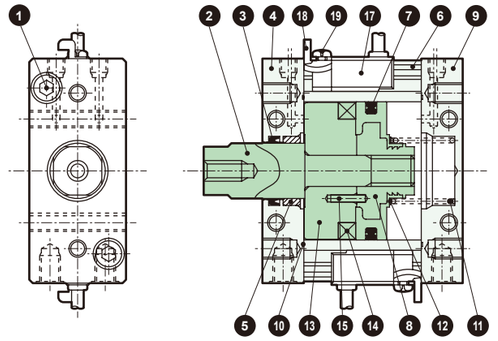


Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate
2	Piston Rod	Steel	Industrial Hard Chrome Plating
3	Rod Cover	Aluminum Alloy	Black anodized
4	Tube	Aluminum Alloy	Hard Anodized
5	Piston Packing	Nitrile Rubber	
6	Head Cover	Aluminum Alloy	Black anodized
7	Piston	Equivalent to ø25 to ø50: Aluminum alloy, polyacetal resin	Equivalent to ø63 Chromate
		Equivalent to ø63 Aluminum Alloy	
8	Spring	Steel	Electrodeposition Coating
9	Bushing spacer	Aluminum Alloy	Equivalent to ø25 to ø40 Alumite ø50, ø63 or equivalent: Chromate
10	Spacer	Equivalent to ø25 to ø50: Aluminum Alloy	Equivalent to ø25 to ø50: Chromate
		Equivalent to ø63 Polyamide	
11	Magnet	Plastic	
12	Spring Pin	Steel	
13	Cover gasket	Nitrile Rubber	
14	Bushing	Aluminum Alloy	Alumite
15	Wear Ring	Polyacetal Resin	Equivalent to ø63 only
With Switch			
16	Switch		
17	Mounting bracket	Stainless Steel	
18	Pan Head Screw	Stainless Steel	

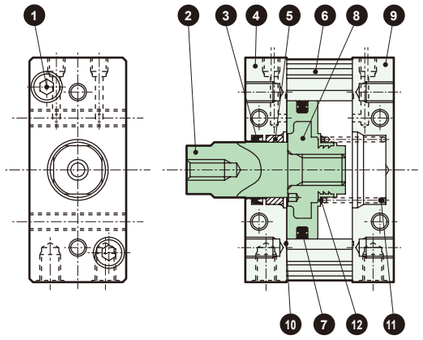
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .

Internal Structure Diagram/Material

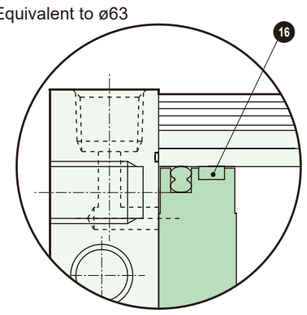
●FCH-L (Single acting, Retracting type, With switch)



●FCH



Equivalent to ø63



Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate
2	Piston Rod	Steel	Industrial Hard Chrome Plating
3	Rod Packing	Nitrile Rubber	
4	Rod Cover	Aluminum Alloy	Black anodized
5	Bushing	Oil-Impregnated Bearing Alloy	
6	Tube	Aluminum Alloy	Hard Anodized
7	Piston Packing	Nitrile Rubber	
8	Piston	Equivalent to ø25 to ø50: Aluminum alloy, polyacetal resin	Equivalent to ø63 Chromate
		Equivalent to ø63 Aluminum Alloy	
9	Head Cover	Aluminum Alloy	Black anodized
10	Cover gasket	Nitrile Rubber	
11	Spring	Steel	Electrodeposition Coating
12	Spring retainer	Stainless Steel	
13	Spacer	Equivalent to ø25 to ø50: Aluminum Alloy	Equivalent to ø25 to ø50: Chromate
		Equivalent to ø63 Polyamide	
14	Magnet		
15	Spring Pin	Steel	
16	Wear Ring	Polyacetal Resin	Equivalent to ø63 only
With Switch			
17	Switch		
18	Mounting bracket	Stainless Steel	
19	Pan Head Screw	Stainless Steel	

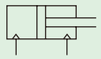
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .



Flat Cylinder Compact Demi Double Acting, Single Rod Type

FCD Series

● Tube bore: ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

FCD - 25 - [ ] - 10 ——— N
1 2 3 4 7

With Switch
(Built-in magnet for switch)

FCD-L - 25 - [ ] - 10 - M2V - R - N

1 Model No.
2 Bore size
3 Piping thread type
4 Stroke
5 Switch Model No.
6 Number of Switches
7 Option

1 Model No.

Code	Content
FCD	Double Acting Type
FCD-L	Double-acting type, With switch

2 Tube Inner Diameter (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32
40	Equivalent to ø40
50	Equivalent to ø50
63	Equivalent to ø63

3 Piping thread type

Code	Content
Blank	M5 (Equivalent to ø25, ø32)
	Rc thread (Equivalent to ø40 to ø63)
NN	NPT thread (custom order) (Equivalent to ø40 to ø63)
GN	G thread (custom order) (Equivalent to ø40 to ø63)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
Equivalent to ø25 to ø63	1 to 50	Every 1 mm

***1: For the minimum stroke with switch, see P. 848.**

5 Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 L-shape
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 30	M2V□
	2-Color		—	10 to 30	—	5 to 30	M2WV□
	1-Color	3-wire (NPN)	—	30 or less	—	100 or less	M3V□
	2-Color		—	30 or less	—	100 or less	M3WV□
	1-Color (Custom order)	3-wire (PNP)	—	30 or less	—	100 or less	M3PV□
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	M0V□
	No Indicator LED		110	5/12/24	20 or less	50 or less	M5V□



*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m M0V
3 m M0V 3
5 m M0V 5

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Option

Code	Content	
Blank	Rod end female thread	
M	Piston Rod Material (Stainless Steel)	
N	Rod end male thread	
R	With spigot joint	

About Custom Product Specifications

For details, see P. 865.

Code	Content
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Switch Single Unit Model No. Display Method

● Switch body + Mounting bracket set

FCS - M2V
5 Switch Model No.

● Switch body only

SW - M2V
5 Switch Model No.

● Mounting bracket set

FCS - M
Mounting bracket

Specifications

Item	FCD / FCD-L				
Bore size mm	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Actuation method	Double Acting Type				
Operating Fluid	Compressed Air				
Maximum operating pressure MPa	0.7				
Min. Operating Pressure MPa	0.07				
Proof pressure MPa	1.05				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	M5		Rc1/8		Rc1/4
Stroke tolerance mm	+0.5 (to 50) 0				
Operating Piston Speed mm/s	50 to 500				
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.015	0.02	0.026	0.04	0.05

Non-rotation accuracy / Allowable rotational torque

Item	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Non-rotation accuracy *2	±1°	±0.8°	±0.5°	±0.5°	±0.5°
Allowable rotational torque N·m	1	1.6	2.5	3.9	5.9

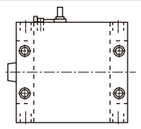
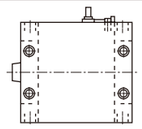
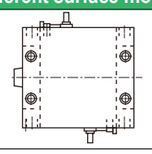
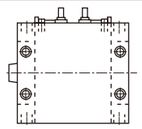
*1: Avoid use where rotational torque is applied impulsively or where the direction of torque load changes impulsively.
*2: The "non-rotation accuracy" value is the value when a torque load of 10% of the "allowable rotational torque" is applied to the tip of the piston rod.

Stroke

Model No.	Bore Size (mm)	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)
FCD	ø25, ø32 ø40, ø50 Equivalent to ø63	5/10/15/20/25/ 30/40/50	50	1

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: The minimum stroke varies depending on the switch mounting method. Please refer to the table below.

Min. Stroke with Switch

With 1 pc		With 2 pcs	
Rod Side Mounting	Head Side Mounting	For different surface mounting	In case of same surface mounting
			
10 mm		15 mm	35 mm (Equivalent to ø25, 32, 40, 50) 30 mm (Equivalent to ø63)

Cylinder Weight

(Unit: g)

Item / Bore size (mm)	Product Weight when stroke (S) = 0 mm, FCD: Without Switch	Product Weight when stroke (S) = 0 mm, FCD: With Switch	Switch weight	Weight of mounting bracket	Added Weight per S = 10 mm
Equivalent to ø25	130	192	Refer to the weight stated in the switch specifications on P. 869.	2	26
Equivalent to ø32	185	275			37
Equivalent to ø40	300	423			46
Equivalent to ø50	470	658			71
Equivalent to ø63	950	1086			90

(Example) Product Weight of FCD-32-20
- Product Weight at S=0 mm ..... 185 g
- Added weight at S=20 mm ..... 37 g × $\frac{20}{10}$ = 74 g
- Product Weight ..... 185 g + 74 g = 259 g

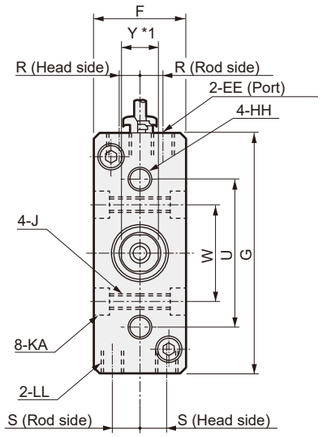
Theoretical Thrust Table

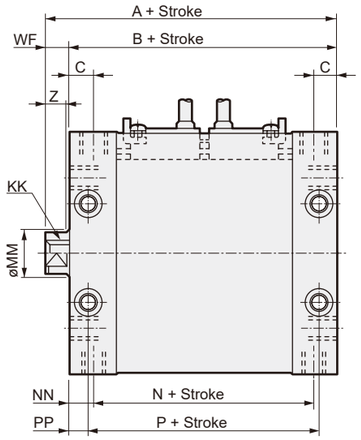
(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa: 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to ø25	Push	49.3	73.9	98.5	1.48×10^2	1.97×10^2	2.46×10^2	2.96×10^2	3.45×10^2
	Pull	37.9	56.9	75.9	1.14×10^2	1.52×10^2	1.90×10^2	2.28×10^2	2.66×10^2
Equivalent to ø32	Push	77.6	1.16×10^2	1.55×10^2	2.33×10^2	3.10×10^2	3.88×10^2	4.66×10^2	5.43×10^2
	Pull	57.5	86.3	1.15×10^2	1.73×10^2	2.30×10^2	2.88×10^2	3.45×10^2	4.03×10^2
Equivalent to ø40	Push	1.29×10^2	1.94×10^2	2.58×10^2	3.87×10^2	5.16×10^2	6.45×10^2	7.75×10^2	9.04×10^2
	Pull	1.09×10^2	1.63×10^2	2.18×10^2	3.27×10^2	4.36×10^2	5.45×10^2	6.54×10^2	7.63×10^2
Equivalent to ø50	Push	1.93×10^2	2.90×10^2	3.86×10^2	5.80×10^2	7.73×10^2	9.66×10^2	1.16×10^3	1.35×10^3
	Pull	1.62×10^2	2.43×10^2	3.24×10^2	4.85×10^2	6.47×10^2	8.09×10^2	9.71×10^2	1.13×10^3
Equivalent to ø63	Push	3.18×10^2	4.77×10^2	6.36×10^2	9.53×10^2	1.27×10^3	1.59×10^3	1.91×10^3	2.22×10^3
	Pull	2.86×10^2	4.30×10^2	5.73×10^2	8.59×10^2	1.15×10^3	1.43×10^3	1.72×10^3	2.00×10^3

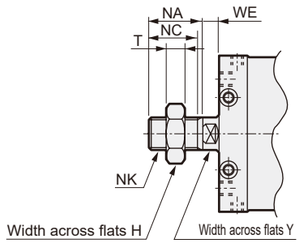
Outline Dimension Drawing

●FCD (Double acting type, without switch)
●FCD-L (Double acting type, with switch)





● Rod end male thread outline dimension drawing (Option Code N)



Code	Dimension without switch				Dimension with switch				Common dimension						
Bore Size (mm)	A	B	N	P	A	B	N	P	C	EE	F	G	HH	J	KA
Equivalent to ø25	37	32	20	24	52	47	35	39	7.5	M5 Depth 4	25	55	M5 depth 7	M5 (Through)	—
Equivalent to ø32	40	33	21	25	55	48	36	40	7.5	M5 Depth 4	28	65	M6 Depth 8	M5 (Through)	—
Equivalent to ø40	49	41	25	29	64	56	40	44	8.5	Rc1/8	32	83	M8 Depth 10	M6 (Through)	9.5 Counterbore Depth 5.4
Equivalent to ø50	55.5	46	29	27	70.5	61	44	42	10.5	Rc1/8	39	101	M10 Depth 12	M8 (Through)	11 Counterbore Depth 6.5
Equivalent to ø63	66.5	57	37	37	81.5	72	52	52	11.5	Rc1/4	49	125	M12 Depth 15	M12 (Through)	17.5 Counterbore Depth 10.5

Code	Common dimension											
Bore Size (mm)	KK	LL	MM	NN	PP	R	S	U	W	WF	Y	Z
Equivalent to ø25	M5 Depth 9	M5 depth 7	12	6	4	4.7	7	38	24	5	10	5
Equivalent to ø32	M6 depth 11	M6 Depth 8	16	6	4	6.2	8	45	30	7	14	7
Equivalent to ø40	M8 depth 13	M8 Depth 10	16	8	6	7.5	9	52	34	8	14	7
Equivalent to ø50	M8 depth 13	M10 Depth 12	20	8.5	9.5	9	10	62	40	9.5	17	8
Equivalent to ø63	M10 depth 15	M12 Depth 18	20	10	10	10.5	14	86	54	9.5	17	8

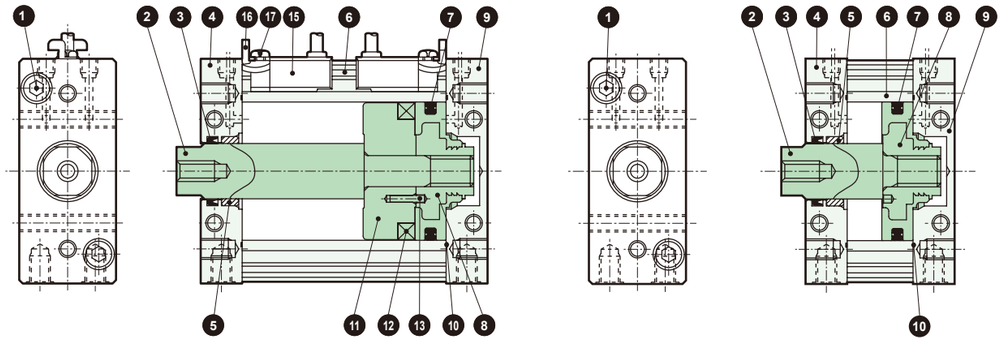
*1: The width across flats of the Y portion is not fixed.
***2: For dimensions of models with switches, see P. 864.**

● Rod end male thread dimension table

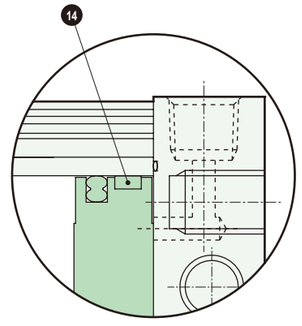
Code / Bore Size (mm)	H	NA	NC	NK	T	WE
Equivalent to ø25	17	22	20	M10 × 1.25	6	5
Equivalent to ø32	22	22	20	M14 × 1.5	8	7
Equivalent to ø40	22	22	20	M14 × 1.5	8	7
Equivalent to ø50	27	28	26	M18 × 1.5	11	8
Equivalent to ø63	27	28	26	M18 × 1.5	11	8

Internal Structure Diagram/Material

●FCD-L (with switch)

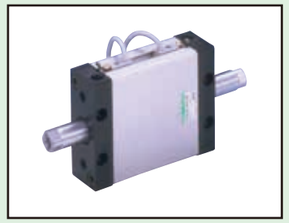


Equivalent to ø63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate	9	Head Cover	Aluminum Alloy	Black anodized
2	Piston Rod	Steel	Industrial Hard Chrome Plating	10	Cover gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		11	Spacer	Equivalent to ø25 to ø50: Aluminum Alloy Equivalent to ø63 Polyamide	Equivalent to ø25 to ø50: Chromate
4	Rod Cover	Aluminum Alloy	Black anodized				
5	Bushing	Oil-Impregnated Bearing Alloy		12	Magnet	Plastic	
6	Tube	Aluminum Alloy	Hard Anodized	13	Spring Pin	Steel	
7	Piston Packing	Nitrile Rubber		14	Wear Ring	Polyacetal Resin	Equivalent to ø63 only
8	Piston	Equivalent to ø25 to ø50: Aluminum alloy, polyacetal resin	Equivalent to ø63 Chromate	With Switch			
				15	Switch		
		Equivalent to ø63 Aluminum Alloy		16	Mounting bracket	Stainless Steel	
				17	Pan Head Screw	Stainless Steel	

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

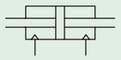


Flat Cylinder Compact Demi Double Acting, Double Rod Type

FCD-D Series

● Tube bore: ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol



RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

FCD-D - 25 - [ ] - 10 ——— N
① ② ③ ④ ⑦

With Switch
(Built-in magnet for switch)

FCD-DL - 25 - [ ] - 10 - M2V - R - N

① Model No. ② Bore size ③ Piping thread type ④ Stroke ⑤ Switch Model No. ⑥ Number of Switches ⑦ Option

①Model No.

Code	Content
FCD-D	Double Acting/Double Rod Type
FCD-DL	Double-acting, Double rod type, With switch

②Tube Inner Diameter (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32
40	Equivalent to ø40
50	Equivalent to ø50
63	Equivalent to ø63

③Piping thread type

Code	Content
Blank	M5 (Equivalent to ø25, ø32)
	Rc thread (Equivalent to ø40 to ø63)
NN	NPT thread (custom order) (Equivalent to ø40 to ø63)
GN	G thread (custom order) (Equivalent to ø40 to ø63)

④Stroke (mm)

Bore size	Stroke	Intermediate Stroke
Equivalent to ø25 to ø63	1 to 50	Every 1 mm

***1: For the minimum stroke with switch, see P. 854.**

⑤Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 L-shape
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 30	M2V□
	2-Color		—	10 to 30	—	5 to 30	M2WV□
	1-Color	3-wire (NPN)	—	30 or less	—	100 or less	M3V□
	2-Color		—	30 or less	—	100 or less	M3WV□
	1 color (customized product)	3-wire (PNP)	—	30 or less	—	100 or less	M3PV□
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	M0V□
	No Indicator LED		110	5/12/24	20 or less	50 or less	M5V□



*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m M0V
3 m M0V 3
5 m M0V 5

⑥Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

⑦Option

Code	Content	
Blank	Rod end female thread	
M	Piston Rod Material (Stainless Steel)	
N	Rod end male thread	
R	With spigot joint	

About Custom Product Specifications

For details, see P. 865.

Code	Content
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Switch Single Unit Model No. Display Method

● Switch body + Mounting bracket set

FCS - M2V
⑤ Switch Model No.

● Switch body only

SW - M2V
⑤ Switch Model No.

● Mounting bracket set

FCS - M
Mounting bracket

Specifications

Item	FCD-D FCD-DL				
Bore size mm	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Actuation method	Double Acting/Double Rod Type				
Operating Fluid	Compressed Air				
Maximum operating pressure MPa	0.7				
Min. Operating Pressure MPa	0.10				
Proof pressure MPa	1.05				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	M5		Rc1/8		Rc1/4
Stroke tolerance mm	+0.5 (to 50) 0				
Operating Piston Speed mm/s	50 to 500				
Cushion	None				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.015	0.02	0.026	0.04	0.05

Non-rotation accuracy / Allowable rotational torque

Item	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Non-rotation accuracy *2	±1°	±0.8°	±0.5°	±0.5°	±0.5°
Allowable rotational torque N·m	1	1.6	2.5	3.9	5.9

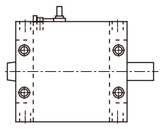
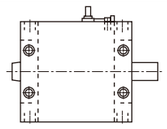
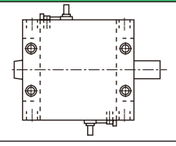
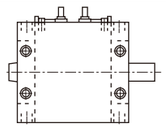
*1: Avoid use where rotational torque is applied impulsively or where the direction of torque load changes impulsively.
*2: The "non-rotation accuracy" value is the value when a torque load of 10% of the "allowable rotational torque" is applied to the tip of the piston rod.

Stroke

Model No.	Bore Size (mm)	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)
FCD-D	ø25, ø32 ø40, ø50 Equivalent to ø63	5 / 10 / 15 / 20 / 25 30 / 40 / 50	50	1

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: The minimum stroke varies depending on the switch mounting method. Please refer to the table below.

Min. Stroke with Switch

With 1 pc		With 2 pcs	
Rod Side Mounting	Head Side Mounting	For different surface mounting	In case of same surface mounting
			
10 mm		15 mm	35 mm (Equivalent to ø25, 32, 40, 50) 30 mm (Equivalent to ø63)

Cylinder Weight

(Unit: g)

Item	Product Weight when stroke (S) = 0 mm FCD-D		Switch weight	Weight of mounting bracket	Added Weight per S = 10 mm
Bore Size (mm)	Without Switch	With Switch			
Equivalent to ø25	145	220	Refer to the weight stated in the switch specifications on P. 869.	2	35
Equivalent to ø32	215	330			53
Equivalent to ø40	330	478			62
Equivalent to ø50	545	773			96
Equivalent to ø63	1050	1226			115

(Example) Product Weight of FCD-D-32-20
- Product Weight at S=0 mm ..... 215 g
- Added weight at S=20 mm ..... 52 g × $\frac{20}{10}$ = 106 g
- Product Weight ..... 215 g + 106 g = 321 g

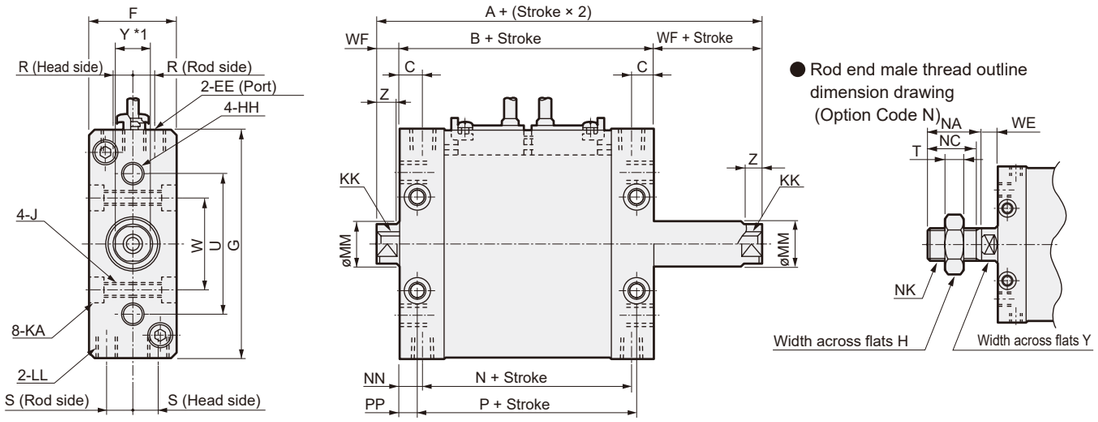
Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to ø25	Push/Pull	37.9	56.9	75.9	1.14×10^2	1.52×10^2	1.90×10^2	2.28×10^2	2.66×10^2
Equivalent to ø32	Push/Pull	57.5	86.3	1.15×10^2	1.73×10^2	2.30×10^2	2.88×10^2	3.45×10^2	4.03×10^2
Equivalent to ø40	Push/Pull	1.09×10^2	1.63×10^2	2.18×10^2	3.27×10^2	4.36×10^2	5.45×10^2	6.54×10^2	7.63×10^2
Equivalent to ø50	Push/Pull	1.62×10^2	2.43×10^2	3.24×10^2	4.85×10^2	6.47×10^2	8.09×10^2	9.71×10^2	1.13×10^3
Equivalent to ø63	Push/Pull	2.86×10^2	4.30×10^2	5.73×10^2	8.59×10^2	1.15×10^3	1.43×10^3	1.72×10^3	2.00×10^3

Outline Dimension Drawing

●FCD (Double acting double rod type, without switch)
●FCD-DL (Double acting double rod type, with switch)



● Rod end male thread outline dimension drawing (Option Code N)

Code	Dimension without switch				Dimension with switch				Common dimension						
Bore Size (mm)	A	B	N	P	A	B	N	P	C	EE	F	G	HH	J	KA
Equivalent to ø25	42	32	20	24	57	47	35	39	7.5	M5 Depth 4	25	55	M5 depth 7	M5 (Through)	—
Equivalent to ø32	47	33	21	25	62	48	36	40	7.5	M5 Depth 4	28	65	M6 Depth 8	M5 (Through)	—
Equivalent to ø40	57	41	25	29	72	56	40	44	8.5	Rc1/8	32	83	M8 Depth 10	M6 (Through)	9.5 Counterbore Depth 5.4
Equivalent to ø50	65	46	29	27	80	61	44	42	10.5	Rc1/8	39	101	M10 Depth 12	M8 (Through)	11 Counterbore Depth 6.5
Equivalent to ø63	76	57	37	37	91	72	52	52	11.5	Rc1/4	49	125	M12 Depth 15	M12 (Through)	17.5 Counterbore Depth 10.5

Code	Common dimension											
Bore Size (mm)	KK	LL	MM	NN	PP	R	S	U	W	WF	Y	Z
Equivalent to ø25	M5 Depth 9	M5 depth 7	12	6	4	4.7	7	38	24	5	10	5
Equivalent to ø32	M6 depth 11	M6 Depth 8	16	6	4	6.2	8	45	30	7	14	7
Equivalent to ø40	M8 depth 13	M8 Depth 10	16	8	6	7.5	9	52	34	8	14	7
Equivalent to ø50	M8 depth 13	M10 Depth 12	20	8.5	9.5	9	10	62	40	9.5	17	8
Equivalent to ø63	M10 depth 15	M12 Depth 18	20	10	10	10.5	14	86	54	9.5	17	8

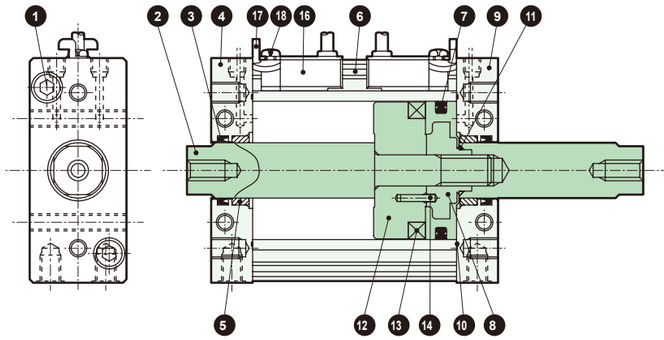
*1: The width across flats of the Y portion is not fixed.
***2: For dimensions of models with switches, see P. 864.**

● Rod end male thread dimension table

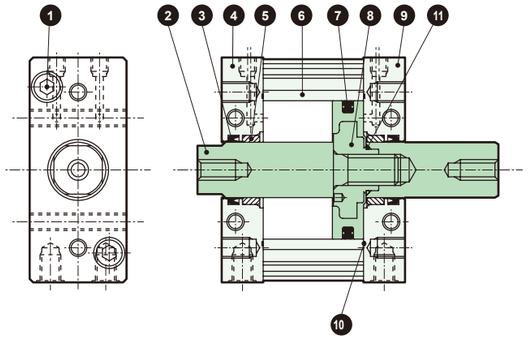
Code	H	NA	NC	NK	T	WE
Bore Size (mm)						
Equivalent to ø25	17	22	20	M10 × 1.25	6	5
Equivalent to ø32	22	22	20	M14 × 1.5	8	7
Equivalent to ø40	22	22	20	M14 × 1.5	8	7
Equivalent to ø50	27	28	26	M18 × 1.5	11	8
Equivalent to ø63	27	28	26	M18 × 1.5	11	8

Internal Structure Diagram/Material

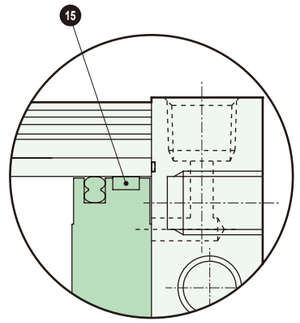
●FCD-DL (with switch)



●FCD-D



Equivalent to ø63



Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate
2	Piston Rod	Steel	Industrial Hard Chrome Plating
3	Rod Packing	Nitrile Rubber	
4	Rod Cover	Aluminum Alloy	Black anodized
5	Bushing	Oil-Impregnated Bearing Alloy	
6	Tube	Aluminum Alloy	Hard Anodized
7	Piston Packing	Nitrile Rubber	
8	Piston	Equivalent to ø25 to ø50: Aluminum alloy, polyacetal resin	Equivalent to ø63 Chromate
		Equivalent to ø63 Aluminum Alloy	
9	Head Cover	Aluminum Alloy	Black anodized

Part No.	Part Name	Material	Remarks
10	Cover gasket	Nitrile Rubber	
11	Piston Gasket	Nitrile Rubber	
12	Spacer	Equivalent to ø25 to ø50: Aluminum Alloy	Equivalent to ø25 to ø50: Chromate
		Equivalent to ø63 Polyamide	
13	Magnet	Plastic	
14	Spring Pin	Steel	
15	Wear Ring	Polyacetal Resin	Equivalent to ø63 only
With Switch			
16	Switch		
17	Mounting bracket	Stainless Steel	
18	Pan Head Screw	Stainless Steel	

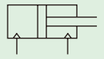
For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts .



Flat Cylinder Compact Demi Double Acting, With Cushion

FCD-K Series

● Tube bore: ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Without magnet for switch)

FCD-K – 25 – [ ] – 10 ——— N
① ② ③ ④ ⑦

With Switch
(Built-in magnet for switch)

FCD-KL – 25 – [ ] – 10 – M2V – R – N

① Model No. ② Bore size ③ Piping thread type ④ Stroke ⑤ Switch Model No. ⑥ Number of Switches ⑦ Option

① Model No.

Code	Content
FCD-K	Double acting type, With cushion
FCD-KL	Double acting type, With cushion, With switch

② Tube Inner Diameter (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32
40	Equivalent to ø40
50	Equivalent to ø50
63	Equivalent to ø63

③ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT thread (custom order) (Equivalent to ø40 to ø63)
GN	G thread (custom order) (Equivalent to ø40 to ø63)

④ Stroke (mm)

Bore size	Stroke	Intermediate Stroke
Equivalent to ø25 to ø63	1 to 150	Every 1 mm

***1: For the minimum stroke with switch, see P. 860.**

⑤ Switch Model No.

For switch details, please refer to P. 869.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 L-shape
Solid State	1-Color	2-wire	—	10 to 30	—	5 to 30	M2V□
	2-Color		—	10 to 30	—	5 to 30	M2WV□
	1-Color	3-wire (NPN)	—	30 or less	—	100 or less	M3V□
	2-Color		—	30 or less	—	100 or less	M3WV□
	1 color (customized product)	3-wire (PNP)	—	30 or less	—	100 or less	M3PV□
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	M0V□
	No Indicator LED		110	5/12/24	20 or less	50 or less	M5V□



*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.

***Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m M0V
3 m M0V 3
5 m M0V 5

⑥ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

⑦ Option

Code	Content	
Blank	Rod end female thread	
M	Piston Rod Material (Stainless Steel)	
N	Rod end male thread	
R	With spigot joint	

About Custom Product Specifications

For details, see P. 865.

Code	Content
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending 11.

Switch Single Unit Model No. Display Method

● Switch body + Mounting bracket set

FCS – M2V
⑤ Switch Model No.

● Switch body only

SW – M2V
⑤ Switch Model No.

● Mounting bracket set

FCS – M
Mounting bracket

Specifications

Item	FCD-K FCD-KL				
Bore size mm	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Actuation method	Double acting, With cushion				
Operating Fluid	Compressed Air				
Maximum operating pressure MPa	0.7				
Min. Operating Pressure MPa	0.07				
Proof pressure MPa	1.05				
Ambient Temperature °C	-10 to 60 (No freezing)				
Port Size	M5		Rc1/8		Rc1/4
Stroke tolerance mm	+1.5 (to 50), +2.0 (to 150) 0 0				
Operating Piston Speed mm/s	50 to 500				
Cushion	Rubber Cushion				
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)				
Allowable absorbed energy J	0.34	0.54	0.67	1.02	1.56

Non-rotation accuracy / Allowable rotational torque

Item	Equivalent to ø25	Equivalent to ø32	Equivalent to ø40	Equivalent to ø50	Equivalent to ø63
Non-rotation accuracy *2	±1°	±0.8°	±0.5°	±0.5°	±0.5°
Allowable rotational torque N·m	1	1.6	2.5	3.9	5.9

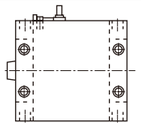
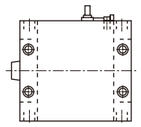
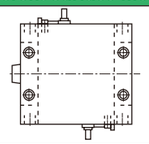
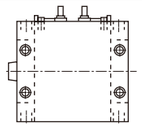
*1: Avoid use where rotational torque is applied impulsively or where the direction of torque load changes impulsively.
*2: The "non-rotation accuracy" value is the value when a torque load of 10% of the "allowable rotational torque" is applied to the tip of the piston rod.

Stroke

Model No.	Bore Size (mm)	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)
FCD-K	ø25, ø32 ø40, ø50 Equivalent to ø63	5 / 10 / 15 / 20 / 25 30 / 40 / 50	150	1

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: The minimum stroke varies depending on the switch mounting method. Please refer to the table below.

Min. Stroke with Switch

With 1 pc		With 2 pcs	
Rod Side Mounting	Head Side Mounting	For different surface mounting	In case of same surface mounting
			
10 mm		15 mm	35 mm (Equivalent to ø25, 32, 40, 50) 30 mm (Equivalent to ø63)

Cylinder Weight

(Unit: g)

Item	Product Weight when stroke (S) = 0 mm FCD-K		Switch weight	Weight of mounting bracket	Added Weight per S = 10 mm
Bore Size (mm)	Without Switch	With Switch			
Equivalent to ø25	155	221	Refer to the weight stated in the switch specifications on P. 869.	2	26
Equivalent to ø32	225	316			37
Equivalent to ø40	355	481			46
Equivalent to ø50	550	741			71
Equivalent to ø63	1135	1196			90

(Example) Product Weight of FCD-K-32-20
- Product Weight at S=0 mm ..... 225 g
- Added weight at S=20 mm ..... 37 g × $\frac{20}{10}$ = 74 g
- Product Weight ..... 225 g + 74 g = 299 g

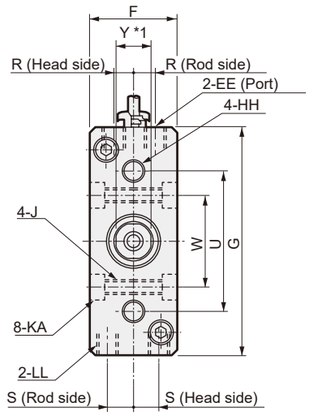
Theoretical Thrust Table

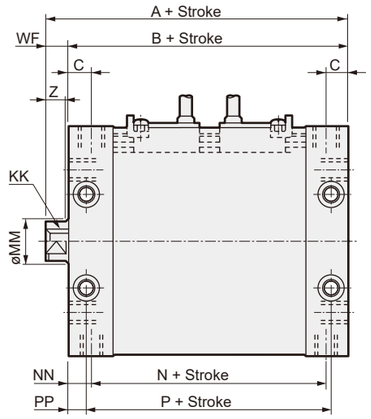
(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to ø25	Push	49.3	73.9	98.5	1.48×10^2	1.97×10^2	2.46×10^2	2.96×10^2	3.45×10^2
	Pull	37.9	56.9	75.9	1.14×10^2	1.52×10^2	1.90×10^2	2.28×10^2	2.66×10^2
Equivalent to ø32	Push	77.6	1.16×10^2	1.55×10^2	2.33×10^2	3.10×10^2	3.88×10^2	4.66×10^2	5.43×10^2
	Pull	57.5	86.3	1.15×10^2	1.73×10^2	2.30×10^2	2.88×10^2	3.45×10^2	4.03×10^2
Equivalent to ø40	Push	1.29×10^2	1.94×10^2	2.58×10^2	3.87×10^2	5.16×10^2	6.45×10^2	7.75×10^2	9.04×10^2
	Pull	1.09×10^2	1.63×10^2	2.18×10^2	3.27×10^2	4.36×10^2	5.45×10^2	6.54×10^2	7.63×10^2
Equivalent to ø50	Push	1.93×10^2	2.90×10^2	3.86×10^2	5.80×10^2	7.73×10^2	9.66×10^2	1.16×10^3	1.35×10^3
	Pull	1.62×10^2	2.43×10^2	3.24×10^2	4.85×10^2	6.47×10^2	8.09×10^2	9.71×10^2	1.13×10^3
Equivalent to ø63	Push	3.18×10^2	4.77×10^2	6.36×10^2	9.53×10^2	1.27×10^3	1.59×10^3	1.91×10^3	2.22×10^3
	Pull	2.86×10^2	4.30×10^2	5.73×10^2	8.59×10^2	1.15×10^3	1.43×10^3	1.72×10^3	2.00×10^3

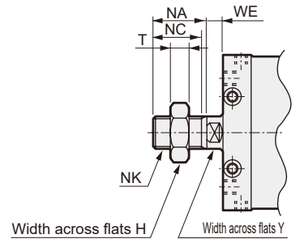
Outline Dimension Drawing

●FCD-K (Double acting type with cushion, without switch)
●FCD-KL (Double acting type with cushion, with switch)





● Rod end male thread outline dimension drawing
(Option Code N)



Code	Dimension without switch				Dimension with switch				Common dimension						
Bore Size (mm)	A	B	N	P	A	B	N	P	C	EE	F	G	HH	J	KA
Equivalent to ø25	47	42	30	34	62	57	45	49	7.5	M5 Depth 4	25	55	M5 depth 7	M5 (Through)	—
Equivalent to ø32	50	43	31	35	65	58	46	50	7.5	M5 Depth 4	28	65	M6 Depth 8	M5 (Through)	—
Equivalent to ø40	59	51	35	39	74	66	50	54	8.5	Rc1/8	32	83	M8 Depth 10	M6 (Through)	9.5 Counterbore Depth 5.4
Equivalent to ø50	65.5	56	39	37	80.5	71	54	52	10.5	Rc1/8	39	101	M10 Depth 12	M8 (Through)	11 Counterbore Depth 6.5
Equivalent to ø63	76.5	67	47	47	91.5	82	62	62	11.5	Rc1/4	49	125	M12 Depth 15	M12 (Through)	17.5 Counterbore Depth 10.5

Code	Common dimension											
Bore Size (mm)	KK	LL	MM	NN	PP	R	S	U	W	WF	Y	Z
Equivalent to ø25	M5 Depth 9	M5 depth 7	12	6	4	4.7	7	38	24	5	10	5
Equivalent to ø32	M6 depth 11	M6 Depth 8	16	6	4	6.2	8	45	30	7	14	7
Equivalent to ø40	M8 depth 13	M8 Depth 10	16	8	6	7.5	9	52	34	8	14	7
Equivalent to ø50	M8 depth 13	M10 Depth 12	20	8.5	9.5	9	10	62	40	9.5	17	8
Equivalent to ø63	M10 depth 15	M12 Depth 18	20	10	10	10.5	14	86	54	9.5	17	8

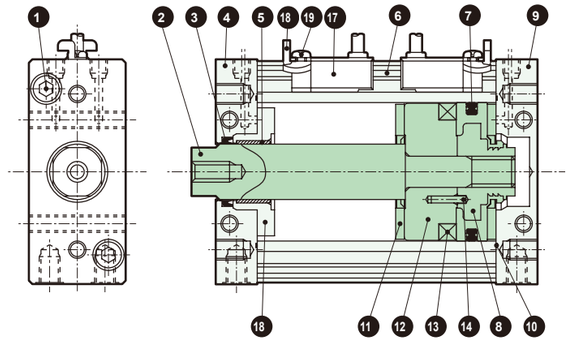
*1: The width across flats of the Y portion is not fixed.
***2: For dimensions of models with switches, see P. 864.**

● Rod end male thread dimension table

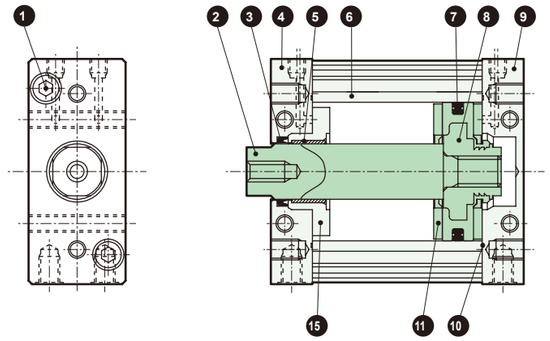
Code	H	NA	NC	NK	T	WE
Bore Size (mm)						
Equivalent to ø25	17	22	20	M10 × 1.25	6	5
Equivalent to ø32	22	22	20	M14 × 1.5	8	7
Equivalent to ø40	22	22	20	M14 × 1.5	8	7
Equivalent to ø50	27	28	26	M18 × 1.5	11	8
Equivalent to ø63	27	28	26	M18 × 1.5	11	8

Internal Structure Diagram/Material

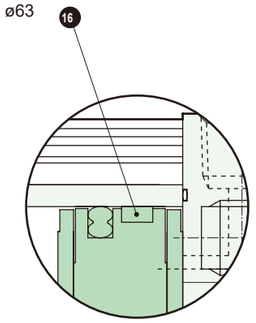
●FCD-KL (with switch)



●FCD-K



Equivalent to ø63



Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate
2	Piston Rod	Steel	Industrial Hard Chrome Plating
3	Rod Packing	Nitrile Rubber	
4	Rod Cover	Aluminum Alloy	Black anodized
5	Bushing	Oil-Impregnated Bearing Alloy	
6	Tube	Aluminum Alloy	Hard Anodized
7	Piston Packing	Nitrile Rubber	
8	Piston	Equivalent to ø25 to ø50: Aluminum Alloy, Polyacetal Resin	Equivalent to ø63 Chromate
		Equivalent to ø63 Aluminum Alloy	
9	Head Cover	Aluminum Alloy	Black anodized

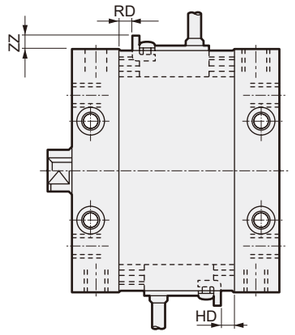
Part No.	Part Name	Material	Remarks
10	Cover gasket	Nitrile Rubber	
11	Cushion Rubber	Urethane Rubber	
12	Spacer	Equivalent to ø25 to ø50: Aluminum Alloy	Equivalent to ø25 to ø50: Chromate
		Equivalent to ø63 Polyamide	
13	Magnet	Plastic	
14	Spring Pin	Steel	
15	Bushing spacer	Aluminum Alloy	Equivalent to ø63 Chromate
16	Wear Ring	Polyacetal Resin	Equivalent to ø63 only
With Switch			
17	Switch		
18	Mounting bracket	Stainless Steel	
19	Pan Head Screw	Stainless Steel	

For maintenance parts, please visit the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts.

FC□ Series Outline Dimension Drawing with Switch

●FCS-L/FCH-L/FCD-L/FCD-KL

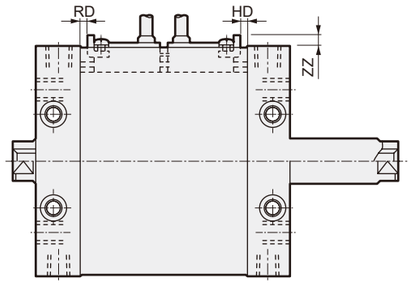
• M2V□, M3V□, M2WV□, M3WV□, M3PV□, M0V□, M5V□



Code / Bore Size (mm)	ZZ	FCS-L		FCH-L FCD-L		FCD-KL	
		RD	HD	RD	HD	RD	HD
Equivalent to ø25	5.5 or less	3.5	0	0	0	6	1
Equivalent to ø32	5.5 or less	4.5	0	0	0	7	1
Equivalent to ø40	5.5 or less	4.5	0	0	0	7	2
Equivalent to ø50	5.5 or less	4.5	0.5	0	0.5	7	3
Equivalent to ø63	5.5 or less	4.5	4.5	0	4.5	7	7

●FCD-DL

• M2V□, M3V□, M2WV□, M3WV□, M3PV□, M0V□, M5V□



Code / Bore Size (mm)	ZZ	FCD-DL	
		RD	HD
Equivalent to ø25	5.5 or less	0	0
Equivalent to ø32	5.5 or less	0	0
Equivalent to ø40	5.5 or less	0	0
Equivalent to ø50	5.5 or less	0	4.5
Equivalent to ø63	5.5 or less	0	4.5

■ With 2 rod nuts (-A2)

Content: Shipped with 2 rod nuts, same as standard.

Model No. Notation Method

FCD - 25 - [ ] - 10 -NA2

Model No.

See the FC□ Series Model Number Notation Method.

Note: Since the piston rod tip shape is standard female thread, be sure to include the "N" code.

Outer Dimensions Diagram

Except for the two rod nuts, it is the same as the rod end male thread type (-N).

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Intro 41, and for cylinder switches, see P. 924.

Individual Precautions: Flat compact cylinder FC□ Series

During Design/Selection

1. Common

Caution

■ Avoid using the piston rod in a way that applies rotational torque. If unavoidable, use within the allowable rotational torque range.

Item \ Model No.	ø25 Equivalent	ø32 Equivalent	ø40 Equivalent	ø50 Equivalent	ø63 Equivalent
Allowable rotational torque (N·m)	1	1.6	2.5	3.9	5.9

● Do not use in a way that rotational torque is applied impulsively or the direction of torque load changes instantaneously.

2. Single acting type FCS/FCH

Caution

■ Do not leave pressurized. If left pressurized, the piston rod may not return by spring force when the pressure is released.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

MEMO

Cylinder Switch



About switch single item model No.

The single item model No. of the switch is as follows.

SW – Switch Model No.

For the lead wire outlet direction, straight type (H) and L-shaped type (V) are available.

CONTENTS

Cylinder Switch System Table	870
Cylinder system table with switch	872
2-color indication non-contact cylinder switch	876
Strong Magnetic Field Resistant Cylinder Switch	877
● M Series	880
● R Series	882
● T Series	884
● Water resistance improved cylinder switch	888
● Magnetized environment cylinder switch	890
● K Series	892
● F Series	894
● H Series	896
● V Series	897
● E Series	898
● Contact protection circuit box	899
● Cylinder switch with connector	900
Series options	901
Operating principle / Switch mounting position	903
Operating range and differential of each cylinder with switch	904
Selection Chart	914
Troubleshooting and countermeasures in case of failure	916
⚠Precautions for Use	924
Switch Mounting Method	930
Mounting method to terminal box	933

Cylinder Switch

Solid state switch

	M Series				R Series					T Series											K Series					F Series						
													Water Resistance	For Cutting Oil			For Cutting Oil	For AC Magnetic Field													
																																
Sub-item	M2	M2WV	M3	M3WV	R1	R2	R2Y	R3	R3Y	T1	T2	T2J	T2W	T2WL	T2YL	T3	T3P	T3W	T3YL	T2YD	K2	K2Y	K3	K3P	K3Y	F2	F2Y	F2S	F3	F3Y	F3P	F3S
Grommet	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Terminal box					●	●	●	●	●																							
Connector											○		○	○	○	○	○	○		○		○					○					
2-wire	●	●			●	●	●			●	●	●	●	●	●					●	●	●				●	●	●				
3-wire			●	●				●	●							●	●	●	●				●	●	●				●	●	●	●
LED	Red	Red/Green	Red	Red/Green	Red	Red	Red/Green	Red	Red/Green	Red	Red	Red	Red/Green	Red/Green	Red/Green	Red	Yellow	Red/Green	Red/Green	Red/Green	Red	Red/Green	Red	Yellow	Red/Green	Yellow	Red/Green	Red	Yellow	Red/Green	Yellow	Red
Neon lamp (Lights up when OFF)																															
No indicator etc.																															
2-color indicator type		●		●			●		●				●	●	●					●		●			●				●		
5 VDC			●					●	●																						
10 to 30 VDC (28 V)	●	●		●		●	●				●	●		●	●	●	●	●			●	●	●	●	●		●	●	●		●
24 VDC													●	●					●							●						
30 VDC or less			●	●				●	●							●	●	●					●	●	●				●	●	●	●
100 / 110 VAC					●					●																						
200 / 220 VAC					●					●																						
Programmable controller	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
IC circuit			●	●				●	●																							
Relay			●	●	●			●	●							●	●	●					●	●	●				●	●	●	●
Large capacity relay																																

Reed switch

	M Series		R Series				T Series					K Series		F Series	H Series		E Series		V Series
										Magnetized environments					Strong magnetic fields		Heat resistant		Weak magnetic fields
																			
Main item	Sub-item	M0	M5	R0	R4	R5	R6	T0	T5	T8	TOY	K0	K5	F0	H0	H0Y	E0	ET0	V0
Wiring method	Grommet	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	Terminal box			●	●	●	●										●		
	Connector							○			○				○	○			○
Number of wires	2-wire	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3-wire																		
With indicator lamp	LED	Red		Red			Red	Red		Red	Red/Green	Red		Yellow	Green	Red/Green	Red	Yellow	Red
	Neon lamp (Lights up when OFF)				●														
	No indicator etc.		●			●			●				●						
	2-color indicator type										●					●			
Operating voltage *1	5 VDC		●			●			●				●						
	10 to 30 VDC (28 V)																		
	24 VDC	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30 VDC or less																		
	100 / 110 VAC	●	●	●	●	●		●	●	●		●	●		●		●	●	●
	200 / 220 VAC			●	●	●				●							●		
Applications	Programmable controller	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●	●
	IC circuit		●			●			●				●						
	Relay	●	●	●		●		●	●	●		●	●		●		●	●	●
	Large capacity relay				●														

● : Standard equipment ○: Custom specification product (Selectable connector types vary depending on the model, so check the catalog for details.)

About switch single item model No.

Model No. indication Notation Example: SW-T2H5

SW - **T2** **H** **5**

①Switch Model No. ③Lead wire length

②Lead Wire Extraction Direction

①Switch Model No.

M2	M2WV	M3	M3WV	R1	R2	R2Y	R3	R3Y	T1	T2	T2J	T2W	T2WL	T2YL	T3	T3P	T3W	T3YL	T2YD	K2	K2Y
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Note: Please refer to the table above.

②Lead Wire Extraction Direction

Code	H	V	V, S
Outlet direction	Straight	L-shape	L-shape
Appearance			 *F□S, T2WLV only

③Lead wire length

Blank (1 m), **3** (3 m), **5** (5 m)

* The selectable length varies depending on the model, so please check the catalog specifications for details.

Cylinder switch (Cylinder system with switch)

Solid state switch

Cylinder model	Bore size	Mounting method: Band	Mounting method: Tie Rod	Mounting method: Rail	Presence/absence of magnet in main body: Standard equipment	Presence/absence of magnet in main body: Option	M Series: M2	M Series: M2WV	M Series: M3	M Series: M3WV	R Series: R1	R Series: R2	R Series: R2Y	R Series: R3	R Series: R3Y	T Series: T1	T Series: T2	T Series: T2J	T Series: T2W	T Series: T2WL (Improved Water Resistance)	T Series: T2YL (Cutting Oil)	T Series: T3	T Series: T3P	T Series: T3W	T Series: T3YL (Cutting Oil)	T Series: T2YD (AC Magnetic Fields)	K Series: K2	K Series: K2Y	K Series: K3	K Series: K3P	K Series: K3Y	F Series: F2	F Series: F2Y	F Series: F2S	F Series: F3	F Series: F3Y	F Series: F3P	F Series: F3S
SCP□3	ø6 to ø16	●				●											●		●	●		●	●	●														
CMK2	ø20 to ø40	●			●											●	●	●	●	●	▲	●	●	●	▲													
CMA2	ø20 to ø40	●			●											●	●	●	●	●		●	●	●	▲													
SCM	ø20 to ø100	●		●	●											●	●	●	●	●		●	●	●	▲	●												
SCG	ø40 to ø100		●		●											●	●	●	●	●	▲	●	●	●	▲	●												
SCA2	ø40 to ø100		●		●											●	●	●	●	●	▲	●	●	●	▲	●												
SCA2-V	ø40 to ø100		●		●											●	●		●	●		●	●	●		●												
SCS2	ø125 to ø250		●			●										●	●	●	●	●		●	●	●	▲													
SSD2	ø12 to ø200			●		●										●	●	●	●	●	▲	●	●	●	▲							●	●	●	●	●	●	●
SSG	ø12 to ø100			●		●										●	●	●	●	●		●	●	●	▲							●	●	●	●	●	●	●
SSD	ø12 to ø160			●		●										●	●	●	●	●	▲	●	●	●	▲							●	●	●	●	●	●	●
MDC2	ø4 to ø10			●		●																										●	●	●	●	●	●	●
SMG	ø6 to ø32			●		●																					●	●	●	●	●							
MSD	ø6 to ø16			●		●																										●	●	●	●	●	●	●
FC□	ø25 to ø63			●		●	●	●	●	●																												
LCM	ø4.5 to ø8			●		●																										●	●	●	●	●	●	●
LCR	ø6 to ø25			●	●												●		●	●		●	●	●								●	●	●	●	●	●	●
LCG	ø6 to ø25			●	●												●		●	●		●	●	●								●	●	●	●	●	●	●
LCW	ø12 to ø20			●	●												●		●			●	●	●								●	●	●	●	●	●	●
LCX	ø25 to ø32			●	●												●		●	●		●	●	●								●	●	●	●	●	●	●
MSDG-L	ø6 to ø16			●	●																											●	●	●	●	●	●	●
STM	ø6 to ø10			●	●																																	
STG	ø12 to ø100			●	●											●	●		●	●	▲	●	●	●	▲													
STS/L	ø8 to ø100			●	●											●	●		●	●	▲	●	●	●	▲													
STR2	ø6 to ø32			●	●																						●	●	●	●	●							
UCA2	ø10 to ø32			●		●											●		●			●										●	●	●	●	●	●	●
SRL3	ø10 to ø100			●	●		●	●	●	●									●	●		●		●														
SRG3	ø12 to ø25			●		●	●	●	●	●									●	●		●		●														
SRM3	ø25 to ø63			●		●													●	●		●		●														
SRT3	ø32 to ø63			●	●		●	●	●	●									●	●		●		●														
MRL2	ø6 to ø20			●		●																																
MRG2	ø10 to ø25			●	●																																	

Reed switch

Cylinder model	Bore size	Mounting method: Band	Mounting method: Tie Rod	Mounting method: Rail	Presence/absence of magnet in main body: Standard equipment	Presence/absence of magnet in main body: Option	M Series: M0	M Series: M5	R Series: R0	R Series: R4	R Series: R5	R Series: R6	T Series: T0	T Series: T5	T Series: T8	T Series: T0Y (For magnetized environment)	K Series: K0	K Series: K5	F Series: F0	H Series: H0 (Strong magnetic fields)	H Series: H0Y (Strong magnetic fields)	E Series: E0 (Heat resistant)	E Series: ET0 (Heat resistant)
SCP□3	ø6 to ø16	●				●							●	●									
CMK2	ø20 to ø40	●			●								●	●	●	▲							
CMA2	ø20 to ø40	●			●								●	●	●								
SCM	ø20 to ø100	●		●	●								●	●	●	▲							
SCG	ø40 to ø100		●		●								●	●	●	▲							
SCA2	ø40 to ø100		●		●								●	●	●	▲				▲	▲	▲	
SCA2-V	ø40 to ø100		●		●								●	●									
SCS2	ø125 to ø250		●			●							●	●	●	▲							
SSD2	ø12 to ø200			●		●							●	●	●	▲							▲
SSG	ø12 to ø100			●		●							●	●	●	▲							
SSD	ø12 to ø160			●		●							●	●	●	▲							▲
MDC2	ø4 to ø10			●		●													●				
SMG	ø6 to ø32			●		●											●	●					
MSD	ø6 to ø16			●		●													●				
FC□	ø25 to ø63			●		●	●	●															
LCM	ø4.5 to ø8			●		●																	
LCR	ø6 to ø25			●	●								●	●									
LCG	ø6 to ø25			●	●								●	●									
LCW	ø12 to ø20			●	●								●	●									
LCX	ø25 to ø32			●	●								●	●									
MSDG-L	ø6 to ø16			●	●														●				
STM	ø6 to ø10			●	●																		
STG	ø12 to ø100			●	●								●	●	●	▲							
STS/L	ø8 to ø100			●	●								●	●	●	▲							
STR2	ø6 to ø32			●	●												●	●					
UCA2	ø10 to ø32			●		●							●	●									
SRL3	ø10 to ø100			●	●		●	●															
SRG3	ø12 to ø25			●		●	●	●															
SRM3	ø25 to ø63			●		●							●	●	●								
SRT3	ø32 to ø63			●	●		●	●															
MRL2	ø6 to ø20			●		●																	
MRG2	ø10 to ø25			●	●								●	●									

Space-Saving Type: SCP□3, CMK2, CMA2, SCM, SCG, SCA2, SCA2-V, SCS2, SSD2, SSG, SSD, MDC2, SMG, MSD, FC□
With Linear Guide: LCM, LCR, LCG, LCW, LCX, MSDG-L
Guided: STM, STG, STS/L, STR2, UCA2
Rodless Type: SRL3, SRG3, SRM3, SRT3, MRL2, MRG2

●: Standard Product ▲: Mountable depending on conditions
Varies depending on conditions such as variation and tube inner diameter. Please check the product specifications for details.

Cylinder switch (Cylinder system with switch)

Solid state switch

Cylinder model		Bore size	Mounting method: Band	Mounting method: Tie Rod	Mounting method: Rail	Presence/absence of magnet in main body: Standard equipment	Presence/absence of magnet in main body: Option	M Series: M2	M Series: M2WV	M Series: M3	M Series: M3WV	R Series: R1	R Series: R2	R Series: R2Y	R Series: R3	R Series: R3Y	T Series: T1	T Series: T2	T Series: T2J	T Series: T2W (Improved Water Resistance)	T Series: T2WL (Improved Water Resistance)	T Series: T2YL (Cutting Oil)	T Series: T3	T Series: T3P	T Series: T3W	T Series: T3YL (Cutting Oil)	T Series: T2YD (AC Magnetic-Field)	K Series: K2	K Series: K2Y	K Series: K3	K Series: K3P	K Series: K3Y	F Series: F2	F Series: F2Y	F Series: F2S	F Series: F3	F Series: F3Y	F Series: F3P	F Series: F3S
With brake	ULK	ø20 to ø40	●			●											●	●	●	●	●		●	●	●													
With brake	JSK2	ø20 to ø40	●			●											●	●	●	●	●		●	●	●													
With brake	JSM2	ø20 to ø40	●			●											●	●	●	●	●		●	●	●													
With brake	JSG	ø40 to ø100		●		●											●	●	●	●	●		●	●	●		●											
With brake	JSC3	ø40 to ø100		●		●											●		●	●	●		●	●	●		●											
With brake	JSC4	ø125 to ø100		●			●										●	●	●	●	●		●	●	●		●											
With lock	USSD	ø20 to ø100			●		●										●	●	●	●	●		●	●	●		●											
With lock	UFCD-KL	ø25 to ø63			●	●		●																													
With lock	USC	ø40 to ø100		●		●											●	●	●	●	●		●	●	●		●											
With Valve	CKV2	ø20 to ø40	●			●											●	●	●	●	●		●	●	●													
With Valve	CAV2, COV2	ø50 to ø100		●		●											●	●	●	●	●		●	●	●													
Clamp Cylinder	CAC4	ø40 to ø80	●	●		●											●	●	●	●	●		●	●	●		●											
Clamp Cylinder	UCAC2	ø50, ø63	●	●		●											●	●	●	●			●	●	●		●											
Clamp Cylinder	CAC-N	ø32, ø40	●	●		●											●	●	●	●	●		●	●	●		●											
Clamp Cylinder	UCAC-N	ø32, ø40, ø63	●	●		●											●	●	●	●			●	●	●		●											
Clamp Cylinder	RCS2	ø12 to ø63			●	●											●	●	●	●	●		●	●	●		●					●	●	●	●	●	●	●
Clamp Cylinder	RCC2	ø16 to ø63			●	●												●	●	●	●		●	●	●		●					●	●	●	●	●	●	●
Special cylinder	MVC	ø6, ø10			●	●																										●	●	●	●	●	●	●
Special cylinder	STK	ø20 to ø50			●	●											●	●	●	●	●		●	●	●		●											
Special cylinder	MCP	Actual thrust For 2t, 5t		●	●	●											●	●	●	●			●	●	●													
Special cylinder	GLC	ø40 to ø100		●		●						●	●		●																							
High Speed Type	HCM	ø20 to ø63			●	●											●	●	●	●	●		●	●	●		●											
High Speed Type	HCA	ø20 to ø100	●			●						●	●	●	●																							
Swinging/ Rotating Type	RRC	Size 8, 32, 63			●	●											●	●	●	●			●	●	●													
Swinging/ Rotating Type	GRC	Size 5 to 80			●	●																															
Swinging/ Rotating Type	RV3□	Size 50 to 800					●	●	●	●	●																										
Gripper/Chuck			Catalog name [No]																																		

Please refer to Pneumatic Cylinder ⑤[RJ-006AA].

Reed switch

Cylinder model		Bore size	Mounting method: Band	Mounting method: Tie Rod	Mounting method: Rail	Presence/absence of magnet in main body: Standard equipment	Presence/absence of magnet in main body: Option	M Series: M0	M Series: M5	R Series: R0	R Series: R4	R Series: R5	R Series: R6	T Series: T0	T Series: T5	T Series: T8	T Series: T0Y (Magnetic environment resistant)	K Series: K0	K Series: K5	F Series: F0	H Series: H0 (Strong magnetic fields)	H Series: H0Y (Strong magnetic fields)	E Series: E0 (Heat resistant)	E Series: ET0 (Heat resistant)
With brake	ULK	ø20 to ø40	●			●								●	●	●								
With brake	JSK2	ø20 to ø40	●			●								●	●	●								
With brake	JSM2	ø20 to ø40	●			●								●	●	●								
With brake	JSG	ø40 to ø100		●		●								●	●	●	▲							
With brake	JSC3	ø40 to ø100		●		●								●	●	●	▲				▲	▲		
With brake	JSC4	ø125 to ø100		●			●							●	●	●	▲							
With lock	USSD	ø20 to ø100			●		●							●	●	●	▲							
With lock	UFCD-KL	ø25 to ø63			●	●																		
With lock	USC	ø40 to ø100		●		●								●	●	●					▲	▲		
With Valve	CKV2	ø20 to ø40	●			●								●	●	●								
With Valve	CAV2, COV2	ø50 to ø100		●		●								●	●	●								
Clamp Cylinder	CAC4	ø40 to ø80	●	●		●								●	●	●	▲				▲			
Clamp Cylinder	UCAC2	ø50, ø63	●	●		●								●	●	●	▲				▲	▲		
Clamp Cylinder	CAC-N	ø32, ø40	●	●		●								●	●	●	▲							
Clamp Cylinder	UCAC-N	ø32, ø40, ø63	●	●		●								●	●	●	▲							
Clamp Cylinder	RCS2	ø12 to ø63			●	●								●	●	●	▲							
Clamp Cylinder	RCC2	ø16 to ø63			●	●								●	●		▲							
Special cylinder	MVC	ø6, ø10			●	●														●				
Special cylinder	STK	ø20 to ø50			●	●								●	●	●	▲							
Special cylinder	MCP	Actual thrust For 2t, 5t		●	●	●								●	●	●								
Special cylinder	GLC	ø40 to ø100		●		●				●	●	●	●								▲			
High Speed Type	HCM	ø20 to ø63			●	●								●	●	●	▲							
High Speed Type	HCA	ø20 to ø100	●			●				●	●	●	●											
Swinging/ Rotating Type	RRC	Size 8, 32, 63			●	●								●	●	●								
Swinging/ Rotating Type	GRC	Size 5 to 80			●	●																		
Swinging/ Rotating Type	RV3□	Size 50 to 800					●	●	●															
Gripper/Chuck			Catalog name [No]																					

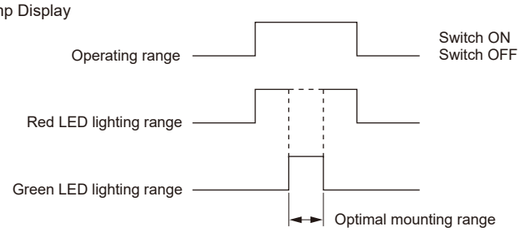
Please refer to Pneumatic Cylinder ⑤[RJ-006AA].

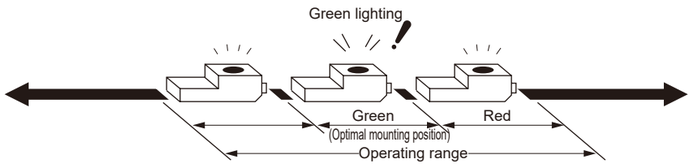
●: Standard Product▲: Mountable depending on conditions
Varies depending on conditions such as variation and tube inner diameter. Please check the product specifications for details.

2-Color Indicator Solid State Cylinder Switch



● Lamp Display





Overview

Conventionally, position detection switches for pneumatic cylinders required troublesome mounting and adjustment work due to their operating range and hysteresis. The 2-color indicator type solid state cylinder switch lights up green at the optimal mounting position and red in the normal operating range, instantly displaying the optimal mounting position. Therefore, it not only eliminates the time and hassle involved in switch adjustment, but also reduces setting errors to zero, allowing for the construction of highly reliable equipment.

Main features

● Easy to mount and adjust

Since the green display position is the optimal mounting position, mounting and adjusting the switch is extremely easy.

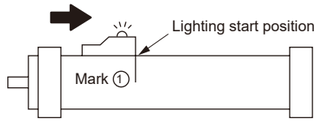
● Highly reliable

This is an extremely reliable switch due to the adoption of a unique hybrid IC equipped with a magnetoresistive element.

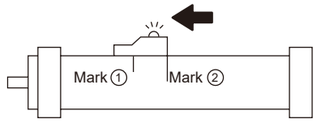
●Cylinder/Switch Setting Comparison

[Conventional] ⟶ [2-color indicator type switch]

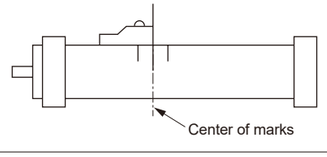
① Move the switch from one direction and mark the lighting start position.



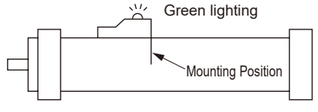
② Similarly move from the opposite direction and mark the lighting start position.



③ Align the end face of the switch with the center of the two marks and fix it.

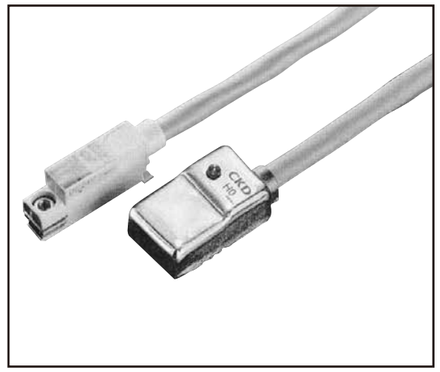


① Move the switch in one direction only and fix it at the position where it lights up green.



2-color indicator type switch is
① Quick mounting
② Easy mounting
③ No setting errors

Strong magnetic field resistant cylinder switch



Overview

This is a cylinder switch that can be used in environments where strong magnetic fields are generated, such as around spot welding machines and magnetizing equipment in automobile factories.

Main features

●Easy to mount/position (V0, T2YD)

Adopts rail mounting method. Can be mounted with a single screw, and position adjustment is also easy.

●Uses heat-resistant material

The main body is made of metal (H0, H0Y) and self-extinguishing resin UL94-V0 (V0, T2YD), and flame-retardant lead wires are used (optional for T2YD). Prevents combustion and melting of the main body and lead wires due to spatter.

●No polarity (H0, T2YD, H0Y)

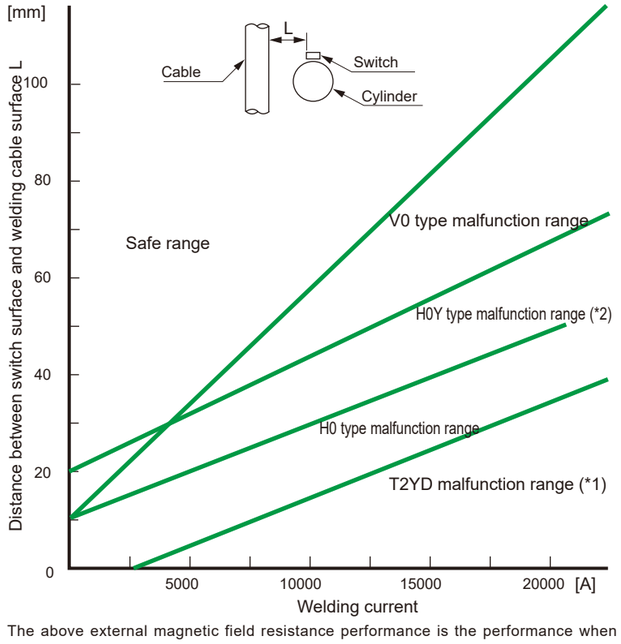
Non-polarity achieved with built-in diode bridge. Eliminates the hassle of checking positive and negative polarity, preventing connection errors.

●Easy to adjust with 2-color indicator (T2YD, H0Y)

Since the green display is the optimal mounting position, mounting and adjusting the switch is extremely easy.

⚠Caution

① Spot welding current - Malfunction distance characteristics
(For V0 switch with detection stroke of 30 mm or more)



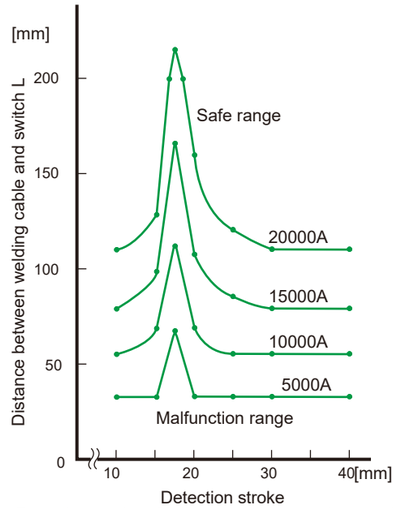
The above external magnetic field resistance performance is the performance when the switch is mounted within the range of "maximum sensitivity position ±1 mm" for H0, "maximum sensitivity position ±1.5 mm" for V0, and "optimal mounting range" for H0Y, so be sure to mount the switch within this range. Do not pass welding current while the cylinder piston is moving. If there are two or more welding cables and they are energized simultaneously, the magnetic flux will increase due to the synergistic effect of the cables, so please consult us. Also, it cannot be used if the switch enters the loop of the cable.

*1: Indicates malfunctions caused by demagnetization of the cylinder's piston magnet due to the welding magnetic field.

*2: Malfunction of H0Y refers to output malfunction.

*3: T2YD is a switch exclusively for AC magnetic fields.

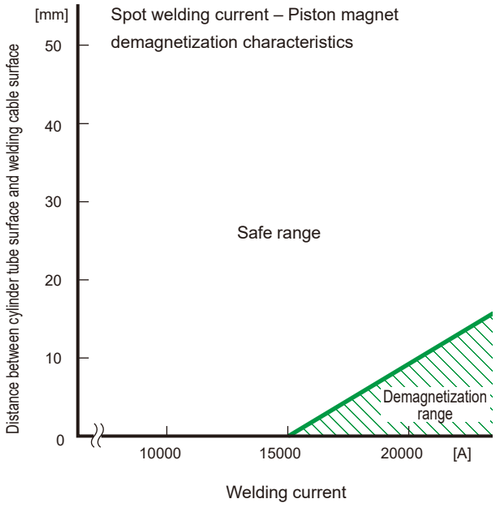
② SSD detection stroke - Malfunction distance characteristics
(V0 Switch)



Detection stroke - Malfunction distance characteristics

If used with a detection stroke of less than 30 mm, please maintain the distance shown in the figure above between the welding cable and the switch.

③ H type cylinder switch
Magnet performance near spot welding



Demagnetization occurs when an AC magnetic field is applied to the magnet. The magnet of the H-type switch equipped cylinder has countermeasures and will not demagnetize up to 15,000A, but if it exceeds 15,000A, please maintain the distance shown in the figure above between the cylinder tube surface and the welding cable surface.

MEMO

M Series	Applicable Cylinders	FC◇, RV3◇, SRL3, SRG3, SRT3, UFCD



M◇V



M◇H

Specifications

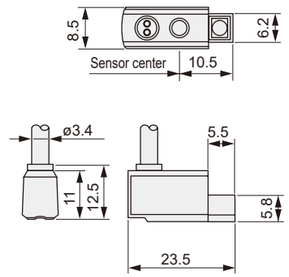
Item	Solid state 2-wire type		Solid state 3-wire type		
	M2V, M2H	M2WV (2-color indicator type)	M3H/V (NPN output type)	M3PH/V (PNP output type)	M3WV (2-color indicator type)
Applications	For programmable controller only		For programmable controller, relay, IC circuit, small solenoid valve		
Output method	–		NPN output	PNP output	NPN output
Power supply voltage	–		4.5 to 28 VDC		10 to 28 VDC
Load voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 30 mA		100 mA or less		
Current consumption	–		10 mA or less at 24 VDC	10 mA or less at 24 VDC	15 mA or less at 24 VDC
Internal voltage drop	4 V or less		0.5 V or less		
Indicator Lamp	Red LED (Lights up when ON)	Red/Green LED (Lights up when ON)	Red LED (Lights up when ON)	Yellow LED (Lights up when ON)	Red/Green LED (Lights up when ON)
Leakage current	1 mA or less		10 μA or less	0.05 mA or less	10 μA or less
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)		1 m (Oil-resistant vinyl cabtyre cord 3-core 0.15 mm²)		
Shock resistance	980 m/s²				
Insulation resistance	100 MΩ or more with 500 VDC megger				
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute				
Ambient Temperature	-10 to +60°C				
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)				
Weight	1 m: 22 g 3 m: 57 g 5 m: 93 g		1 m: 22 g 3 m: 57 g 5 m: 93 g		

Item	Reed 2-wire type			
	M0V, M0H		M5V, M5H	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (w/o indicator light), series connection	
Power supply voltage	–			
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Current consumption	–			
Internal voltage drop	3 V or less (In case of DC, when load current is 30 mA)		0.1 V or less (*4)	
Indicator Lamp	Red LED (Lights up when ON)		No Indicator Lamp	
Leakage current	0 mA			
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)			
Shock resistance	294 m/s²			
Insulation resistance	100 MΩ or more with 500 VDC megger			
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute			
Ambient Temperature	-10 to +60°C			
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)			
Contact protection circuit *5	None			
Weight	1 m: 22 g 3 m: 57 g 5 m: 93 g			

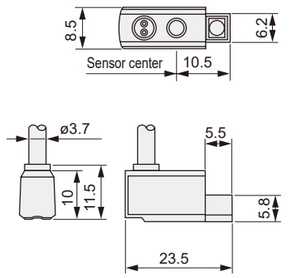
*1: M□H can be used for SRL3, SRG3, SRT3.
*2: For switch model No.s that can be mounted on the cylinder, please refer to the P. for each cylinder model.
*3: Please consult us separately for cylinder switches with connectors.
*4: Internal resistance 0.5 Ω or less
***5: For contact protection measures, see P. 899.**

Outline Dimension Drawing

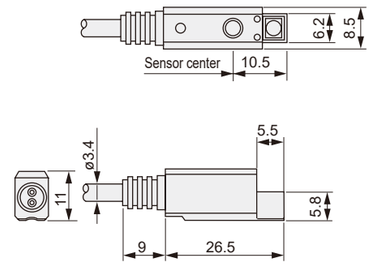
●M□V Series (L-shaped lead wire type)



●M□W series (2-color indicator type, L-shaped lead wire type)

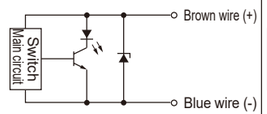


●M□H Series (Straight lead wire type)

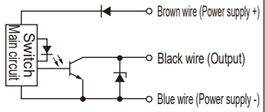


Switch internal circuit diagram

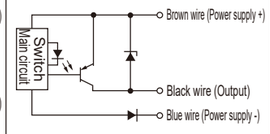
●M2V, M2H, M2WV



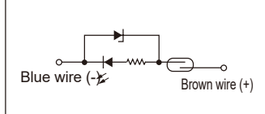
●M3V, M3H, M3WV



●M3PV, M3PH



●M0V, M0H



●M5V, M5H



R Series	Applicable Cylinders	GLC, HCA, MFC, SHC

(Excluding R1, R4)



R◇, R◇Y



R◇B

Specifications

Item	Solid state 2-wire type			Solid state 3-wire type	
	R1, R1K	R2, R2K	R2Y, R2YK (2-color indicator type)	R3, R3K	R3Y, R3YK (2-color indicator type)
Applications	Programmable controller, Relay, Small solenoid valve	For programmable controller only		For programmable controller, relay, IC circuit, solenoid valve	
Output method	–			NPN output	
Power supply voltage	–	–		4.5 to 28 VDC	
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less	30 VDC or less
Load current	5 to 100 mA	5 to 30 mA		200 mA or less	100 mA or less
Current consumption	–	–		At 24 VDC (When ON)	
				10 mA or less	16 mA or less
Internal voltage drop	10% or less of load voltage	4 V or less		0.5 V or less at 150 mA	0.5 V or less
Indicator Lamp	Red LED (Lights up when ON)		Red/Green LED (Lights up when ON)	Red LED (Lights up when ON)	Red/Green LED (Lights up when ON)
Leakage current	1 mA or less at 100 VAC, 2 mA or less at 200 VAC	1 mA or less		10 μA or less	
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)			1 m (Oil-resistant vinyl cabtyre cord 3-core 0.2 mm²)	
Shock resistance	980 m/s²				
Insulation resistance	20 MΩ or more with 500 VDC megger				
Dielectric strength	No abnormality when 1500 VAC is applied for 1 minute	No abnormality when 1000 VAC is applied for 1 minute			
Ambient Temperature	-10 to +60°C				
Protection structure	Grommet type is IEC standard IP67, JIS C0920 (Immersible type)				
Option	With terminal box R*B (Not waterproof)				
Weight	1 m: 42 g 3 m: 100 g 5 m: 158 g		1 m: 56 g 3 m: 114 g 5 m: 172 g	1 m: 42 g 3 m: 100 g 5 m: 158 g	1 m: 56 g 3 m: 114 g 5 m: 172 g

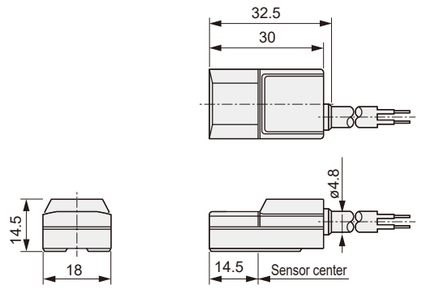
Item	Reed 2-wire type								
	R0			R4		R5			R6
Applications	For relay, programmable controller			For high capacity relay, solenoid valve		For programmable controller, relay, IC circuit (no indicator light), series connection			For programmable controller only (With DC self-holding function)
Power supply voltage	–			–		–			–
Load voltage	12/24 VDC	110 VAC	220 VAC	110 VAC	220 VAC	5/12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 50 mA	7 to 20 mA	7 to 10 mA	20 to 200 mA	10 to 200 mA	50 mA or less	20 mA or less	10 mA or less	5 to 50 mA
Current consumption	–			–		–			–
Internal voltage drop	3.0 V or less			2 V or less		0.5 V or less (*1)			5 V or less
Indicator Lamp	Red LED (Lights up when ON)			Neon lamp OFF (Lights up when OFF)		None			Red LED (Lights up when ON)
Leakage current	0 mA			1 mA or less		0 mA			0.1 mA or less
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)								
Shock resistance	294 m/s²								
Insulation resistance	20 MΩ or more with 500 VDC megger								
Dielectric strength	No abnormality when 1500 VAC is applied for 1 minute								
Ambient Temperature	-10 to +60°C								
Protection structure	Grommet type is IEC standard IP67, JIS C0920 (Immersible type)								
Contact protection circuit *2	Yes								None
Option	With terminal box R□B (Not waterproof)								
Weight	1 m: 42 g 3 m: 100 g 5 m: 158 g								

*1: Internal resistance 10Ω or less
*2: For contact protection measures, see P. 899.

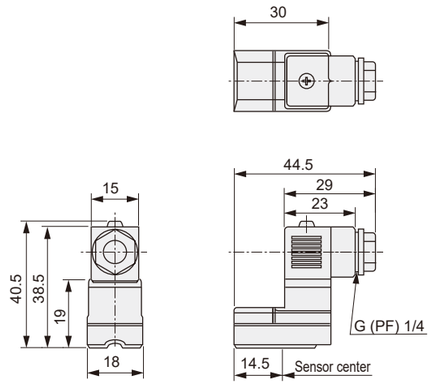
External dimension diagram / Switch internal circuit diagram

Outline Dimension Drawing

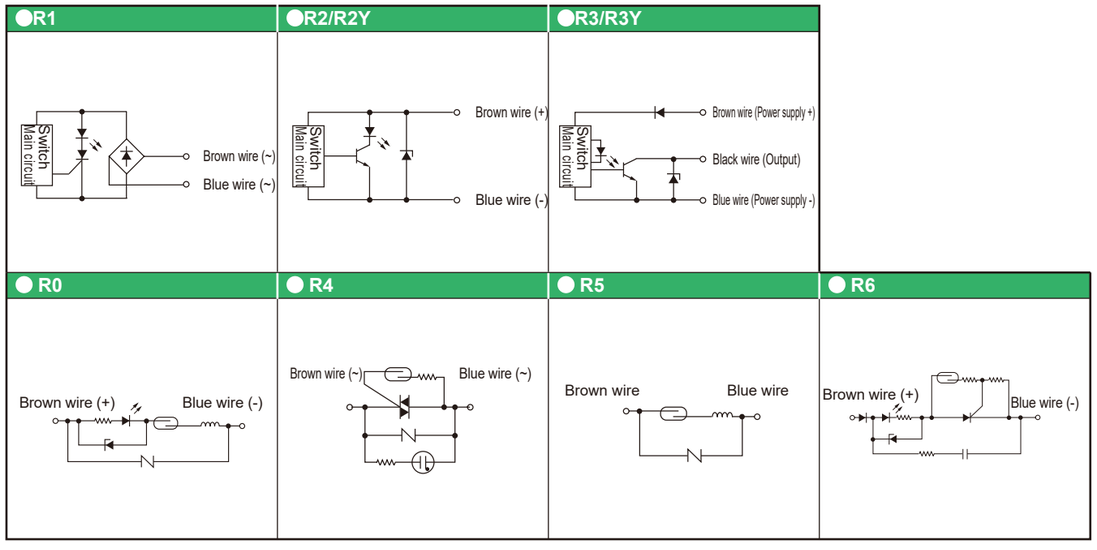
●R Series (Grommet Type)



●R Series (Terminal box R◇B type)



Switch internal circuit diagram



T Series	Applicable Cylinders	CAC4 CKV2 CMA2 CMK2 HCM JSC3 JSC4 JSG JSK2 JSM2 LCG LCR LCW LCX MRG2 MRL2 RCS2 RCC2 RRC SCA2 SCG SCM SCP□3 SCS2 SRM3 SSD SSD2 SSG STG STS/STL STK UCA2 UCAC2 ULK GripperChuck

(Excluding T1, T8)


T□H/T□WH


T□V/T□WV


T1H


T1 V


T8H/T2JH


T8V/T2JV

Specifications

Item	Solid state 2-wire type					Solid state 3-wire type		
	T1H, T1 V	T2H, T2V	T2HR3, T2VR3 (Flexible lead wire type)	T2JH, T2JV (Off-delay type)	T2WH, T2WV (2-color indicator type)	T3H, T3V	T3PH, T3PV (PNP output type)	T3WH, T3WV (2-color indicator type)
Applications	For programmable controller, relay, small solenoid valve	For programmable controller only				For programmable controller, relay		
Output method	–					NPN output	PNP output	NPN output
Power supply voltage	–					10 to 28 VDC		
Load voltage	85 to 265 VAC	10 to 30 VDC			24 VDC ±10%	30 VDC or less		
Load current	5 to 100 mA	5 to 20 mA (*1)				100 mA or less		50 mA or less
Current consumption	–	–				10 mA or less at 24 VDC	10 mA or less at 24 VDC	10 mA or less at 24 VDC
Internal voltage drop	10% or less of load voltage	4 V or less				0.5 V or less		
Off-delay time	–			200 ±50 ms	–	–		
Indicator Lamp	Red LED (Lights up when ON)				Red/Green LED (Lights up when ON)	Red LED (Lights up when ON)	Yellow LED (Lights up when ON)	Red/Green LED (Lights up when ON)
Leakage current	1 mA or less at 100 VAC, 2 mA or less at 200 VAC	1 mA or less				10 μA or less		
Lead wire length *6	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)	3 m (Flexible, oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)	1 m (Oil-resistant vinyl cabtyre cord 3-core 0.2 mm²)		1 m (Oil-resistant vinyl cabtyre cord 3-core 0.2 mm²)
Shock resistance	980 m/s²							
Insulation resistance	100 MΩ or more with 500 VDC megger	20 MΩ or more with 500 VDC megger		100 MΩ or more with 500 VDC megger	20 MΩ or more with 500 VDC megger	20 MΩ or more with 500 VDC megger		20 MΩ or more with 500 VDC megger
Dielectric strength	No abnormality when 1500 VAC is applied for 1 minute	No abnormality when 1000 VAC is applied for 1 minute						
Ambient Temperature	-10 to +60°C							
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)							
Weight	1 m: 33 g 3 m: 87 g 5 m: 142 g	1 m: 18 g 3 m: 49 g 5 m: 80 g		1 m: 33 g 3 m: 87 g 5 m: 142 g	1 m: 18 g 3 m: 49 g 5 m: 80 g	1 m: 18 g 3 m: 49 g 5 m: 80 g		1 m: 18 g 3 m: 49 g 5 m: 80 g

Item	Reed 2-wire type						
	T0H, T0V		T5H, T5V		T8H, T8V		
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator light), series connection		For programmable controller, relay		
Power supply voltage	–						
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA
Current consumption	–						
Internal voltage drop	3 V or less (In case of DC, when load current is 30 mA)		0.1 V or less (*4)		4 V or less		
Indicator Lamp	Red LED (Lights up when ON)		No Indicator Lamp		Red LED (Lights up when ON)		
Leakage current	0 mA						
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)				1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)		
Shock resistance	294 m/s²						
Insulation resistance	20 MΩ or more with 500 VDC megger				100 MΩ or more with 500 VDC megger		
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute				No abnormality when 1500 VAC is applied for 1 minute		
Ambient Temperature	-10 to +60°C						
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)						
Contact protection circuit *5	None				Yes		
Weight	1 m: 18 g 3 m: 49 g 5 m: 80 g				1 m: 33 g 3 m: 87 g 5 m: 142 g		

*1: Maximum load current for T2H, T2V, T2HR3, T2VR3: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (It will be 5 to 10 mA at 60°C.)
*2: For T2JH and T2JV switches, when mounting on SRL3 (ø32 to ø100), MRL2, LCR, UCAC2, or gripper/chuck, it will be handled as a custom product.
*3: Some cylinders have limited mountable switches. Please refer to the P. for each cylinder for details.
*4: Internal resistance 0.5Ω or less. *5: For contact protection measures, see P. 899.

T Series	For AC Magnetic Field	Applicable Cylinder	CAC4 JSC3 JSC4 JSG RCC2 RCS2 SCA2 SCG SCM SCS2 SRG3 SRL3 SRM3 SRT3 SSD SSD2 SSG STG STS/STL UCAC2 USC USSD


T2YD

Specifications

Item	Solid state 2-wire type		
	T2YD	T2YDT	T2YDU (Custom Products)
Applications	For programmable controller only		
Indicator Lamp	Red/Green LED (Lights up when ON)		
Load voltage	24 VDC ±10%		
Load current	5 to 20 mA		
Internal voltage drop	6 V or less		
Leakage current	1.0 mA or less		
Output delay time *1 (ON-delay, OFF-delay)	60 ms or less		
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord ø6, 0.5 mm² x 2 cores) *2	1 m (Flame-retardant cabtyre cord ø6, 0.5 mm² x 2 cores) *2	0.3 m (Flame-retardant vinyl cabtyre cord with M12 cable connector, AWG20, 2-core)
Insulation resistance	100 MΩ or more with 500 VDC megger		
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute		
Shock resistance	980 m/s²		
Ambient Temperature	-10 to +60°C		
Protection structure	JIS C0920 (Immersible type), IEC standard IP67		
Weight	1 m: 61 g 3 m: 166 g 5 m: 272 g		35

*1: Indicates the time from when the magnetic sensor detects the piston magnet until the switch output occurs.
*2: 3 m and 5 m lead wire lengths are available as options.
3: Since AC magnetic field switches (T2YD) are for AC welding machines, the strong magnetic field resistance performance cannot be obtained with DC welding machines.

T Series	For Cutting Oil	Applicable Cylinder	CMK2-G2/3 HRL-G2/3 SCA2-G2/3 SCG-G2/3 SSD-G2/3 SSD2-G2/3 STG-G2/3 STS/STL-G2/3

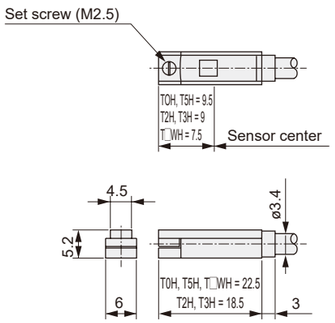

T□YLH

Specifications

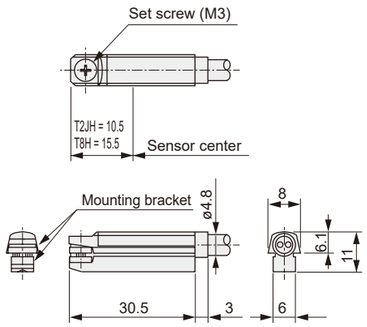
Item	Solid state 2-wire type	Solid state 3-wire type
	T2YLH, T2YLV	T3YLH, T3YLV
Applications	For programmable controller only	Programmable controller, Relay
Output method	–	NPN output
Power supply voltage	–	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less
Load current	5 to 20 mA	50 mA or less
Current consumption	–	10 mA or less at 24 VDC (When ON)
Internal voltage drop	4 V or less	0.5 V or less
Leakage current	1 mA or less	10 μA or less
Indicator Lamp	Red/Green LED (Lights up when ON)	
Lead Wire	Oil-resistant vinyl cabtyre cord 0.3 mm², 2-core 1 m	Oil-resistant vinyl cabtyre cord 0.2 mm², 3-core 1 m
Insulation resistance	100 MΩ or more with 500 VDC megger	
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute	
Shock resistance	980 m/s²	
Hysteresis	1.5 mm or less	
Ambient Temperature	-10 to +60°C	
Protection structure	IEC standard IP67, JIS C0920 (Immersible type), Oil resistant (PCB coating)	
Weight	1 m: 33 g 3 m: 87 g 5 m: 142 g	

Outline Dimension Drawing

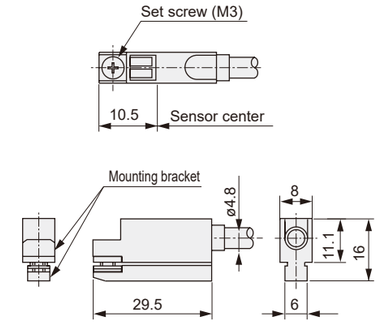
●T□H, T□WH Series
(Straight lead wire type)



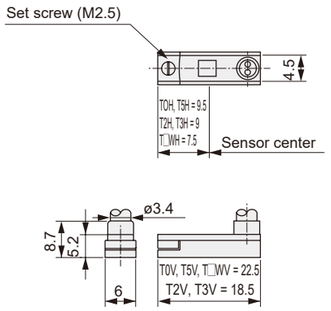
●T2JH, T8H Series
(Straight lead wire type)



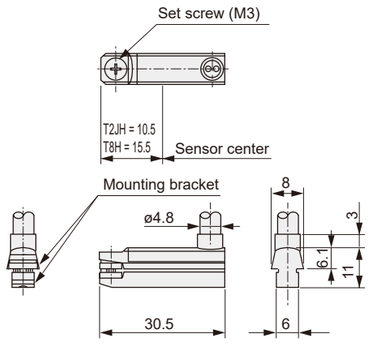
●T1H Series
(Straight lead wire type)



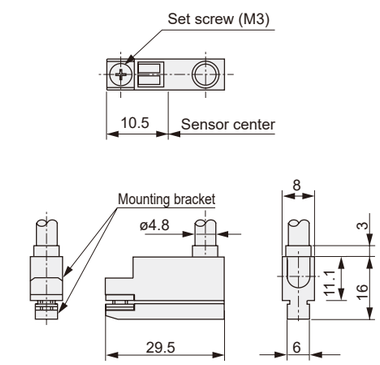
●T□V, T□WV Series
(L-shaped lead wire type)



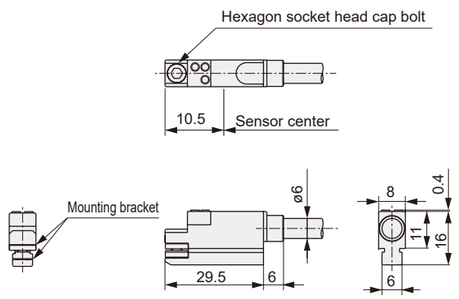
●T2JV, T8V Series
(L-shaped lead wire type)



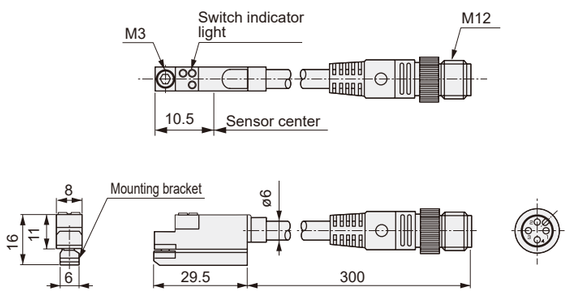
●T1 V Series
(L-shaped lead wire type)



●T2YD (AC magnetic field switch)

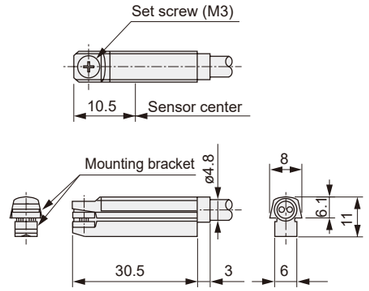


●T2YDU (Switch for AC magnetic field with M12 cable connector)

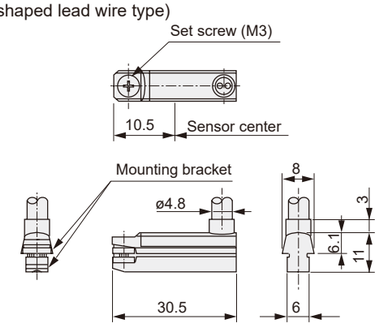


Outline Dimension Drawing

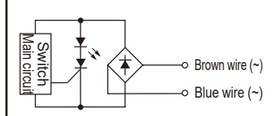
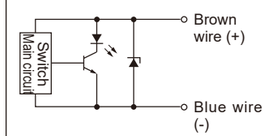
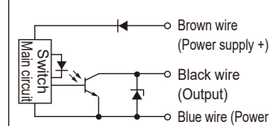
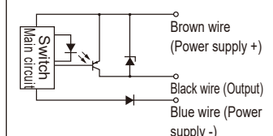
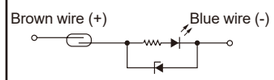
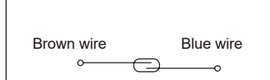
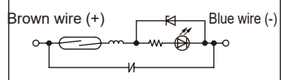
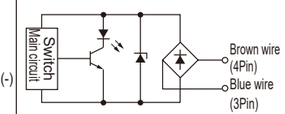
●T□YLH Series
(Straight lead wire type)



●T□YLV Series
(L-shaped lead wire type)



Switch internal circuit diagram

●T1H, T1V	●T2H, T2V, T2WH, T2WV, T2JH, T2JV, T2YLH, T2YLV	●T3H, T3V, T3WH, T3WV, T3YLH, T3YLV	●T3PH, T3PV
			
●T0H, T0V	●T5H, T5V	●T8H, T8V	●T2YD, T2YDT, T2YDU
			 This switch has no polarity. Values in ( ) are pin assignments for T2YDU. However, Pin 1 and Pin 2 are N.C. (Not Connected).

T Series	Improved Water Resistance	Applicable Cylinders										
			SCP□3	CMK2	CMA2	SCM	SCG	SCA2	SCS2	CKV2	COV□2	CAV2	SSD2
			SSG	SSD	STK	SRL3	SRG3	SRM3	SRT3	MRL2	MRG2	LCR	LCG
			LCX	STG	STS/L	HCM	CAC4	CAC-N	RCS2	RCC2	MCP	RRC	GRC



T2WLH



T2WLV

Specifications

Item	Solid state 2-wire type	
	T2WLH, T2WLV	T2WLHW, T2WLVW
Applications	For programmable controller only	
Load voltage	24 VDC ±10%	
Load current	5 to 20 mA	
Internal voltage drop	4 V or less	
Leakage current	1 mA or less	
Indicator Lamp	Red/Green LED (Lights up when ON)	
Lead wire length	1 m (PUR cord 2-core 0.2 mm²)	0.3 m (PUR cord with M8 connector)
Insulation resistance	20 MΩ or more with 500 VDC megger	
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute	
Shock resistance	980 m/s²	
Ambient Temperature	-10 to +60°C	
Protection structure	IEC standard IP67 JIS C0920 (Immersible type)	
Weight	1 m: 18 g 3 m: 49 g 5 m: 80 g	11 g

*1: Cannot be mounted on drop prevention type.
*2: For switch mountability, refer to the next page.

Model No. Notation Method

●Water-resistant Cylinder Switch

SW - T2WL H W

1 Lead Wire Extraction Direction

2 Lead wire length, connector specification

1 Lead Wire Extraction Direction

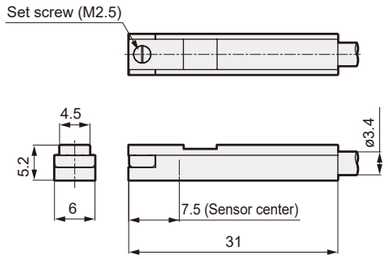
Code	Content
H	Straight lead wire type
V	L-shaped lead wire type

2 Lead wire length, connector specification

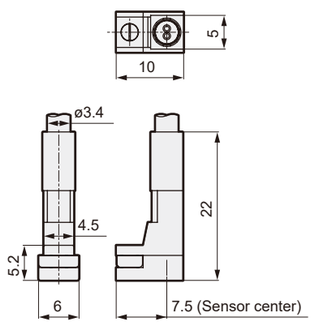
Code	Content
Blank	1 m lead wire
3	3 m lead wire
5	5 m lead wire
W	M8 connector, 1PIN (+) 4PIN (-)

Outline Dimension Drawing

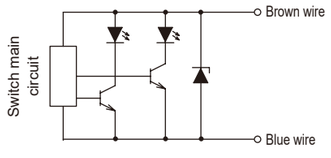
●T2WLH Series (Straight lead wire type)



●T2WLV Series (L-shaped lead wire type)



Switch internal circuit diagram



Switch applicable model list

Applicable Model		Bore size
Pencil Shaped Cylinder	SCP□3	ø6 to 16
Tight Cylinder	CMK2	ø20 to 40
Small Bore Size Cylinder	CMA2	ø20 to 40
Round shaped cylinder	SCM	ø20 to 100
Tie Rod Cylinder	SCG	ø32 to 100
Medium Bore Size Cylinder	SCA2	ø40 to 100
Large Bore Size Cylinder	SCS2	ø125 to 250
Compact cylinder with valve	CKV2	ø20 to 40
Cell Cylinder	COV□2	ø50 to 100
Cell Cylinder	CAV2	ø50 to 100
Compact Cylinder	SSD2	ø12 to 100
Guided Compact Cylinder	SSG	ø12 to 100
Compact Cylinder	SSD	ø12 to 160
Stopper Cylinder	STK	ø20 to 50
Rodless Cylinder	SRL3	ø12 to 100
Rodless Cylinder with High-Precision Guide	SRG3	ø12 to 25
Rodless Cylinder with High-Precision Guide	SRM3	ø25 to 63
Rodless Cylinder with Brake	SRT3	ø12 to 63
Super rodless cylinder with magnet	MRL2	ø6 to 32
Super rodless cylinder with magnet, high precision guide type	MRG2	ø50 to 700
Linear Slide Cylinder	LCR	ø16 to 25
Linear Slide Cylinder	LCG	ø16
Thin Linear Slide Cylinder	LCX	ø25, 32
Guided Cylinder	STG	ø12 to 100
Guided Cylinder	STS/L	ø8 to 100
High Energy Absorption Cylinder	HCM	ø20 to 63
Clamp Cylinder	CAC4	ø40 to 80
Lightweight Clamp Cylinder	CAC-N	N32, N40
Rotary Clamp Cylinder	RCS2	ø12 to 63
Rotary Clamp Cylinder	RCC2	ø16 to 63
Mechanical Power Cylinder	MCP	Size 2t, 5t
Selex Rotary	RRC	Size 8 to 63
Table Type Rotary Actuator	GRC	Size 5 to 80

T Series	Magnetized environment	Applicable Cylinders							
			CMK2	SCM	SCG	SCA2	SCS2	SSD2	SSG	SSD
			STK	STG	STS/L	JSG	JSC3	JSC4	USSD	HCM
			CAC4	UCAC2	CAC-N	UCAC-N32		RCS2	RCC2	PCC



TOY

Specifications

Item	Reed 2-wire type		
	T0Y	T0YL	T0YT
Applications	For programmable controller only		
Switch polarity	No polarity		
Load voltage	24 VDC ±10%		
Load current	5 to 20 mA		
Internal voltage drop	4.5 V or less		
Leakage current	0.5 mA or less		
Indicator Lamp	Red/Green LED (Lights up when ON)		
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)	1 m (Flame-retardant cabtyre cord 2-core 0.2 mm²) UL certified wire	1 m (Flame-retardant vinyl cabtyre cord 2-core 0.2 mm²)
Insulation resistance	20 MΩ or more with 500 VDC megger		
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute		
Shock resistance	294 m/s²		
Ambient Temperature	-10 to +60°C		
Protection structure	IEC standard IP67 JIS C0920 (Immersible type)		
Contact protection circuit	None		
Weight	1 m: 18 g 3 m: 49 g 5 m: 80 g		
Weight of connector only	M12: Connector code B/M: 10 g M8: Connector code F: 4 g		

Note: For switch mountability, please refer to the next page.

Model No. Notation Method

● Magnetized environment cylinder switch

SW- T0Y L M K

❶ Lead wire type ❸ Option

❷ Lead wire length, connector specification

❶ Lead wire type

Code	Content
Blank	Oil-resistant vinyl cabtyre cord
L	UL wire
T	Spatter-resistant wire

❸ Option

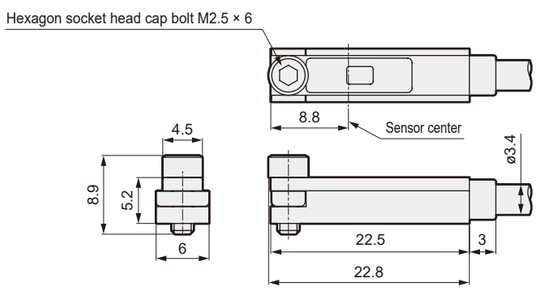
Code	Content
Blank	No option
K	With spatter adhesion prevention cover

❷ Lead wire length, connector specification

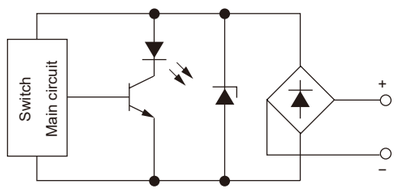
Code	Content
Blank	1 m lead wire
3	3 m lead wire
5	5 m lead wire
B	M12 connector (4PIN specification), 3-4PIN no polarity, 0.3 m lead wire
M	M12 connector (4PIN specification), 1-4PIN no polarity, 0.3 m lead wire
Note F	M8 connector (3PIN specification), 1-4PIN no polarity, 0.3 m lead wire

Note: For connector specification "F", only lead wire type "L" can be selected.

Outline Dimension Drawing



Switch internal circuit diagram



Switch applicable model list

Applicable Model		Bore size
Small bore size cylinder	CMK2	ø32, ø40
Round shaped cylinder	SCM	ø32 to 100
Tie Rod Cylinder	SCG	ø40 to 100
Medium Bore Size Cylinder	SCA2	ø40 to 100
Large Bore Size Cylinder	SCS2	ø125 to 250
Compact Cylinder	SSD2	ø32 to 200
Guided Compact Cylinder	SSG	ø32 to 100
Compact Cylinder	SSD	ø32 to 160
Stopper Cylinder	STK	ø32 to 50
Guided Cylinder	STG	ø32 to 80
Guided Cylinder	STS/L	ø32 to 100
Tie Rod Cylinder with Brake	JSG	ø40 to 100
Cell top cylinder (Medium bore)	JSC3	ø40 to 100
Cell top cylinder (Large bore)	JSC4	ø125 to 180
Compact Cylinder with Drop Prevention	USSD	ø40 to 63
High Energy Absorption Cylinder	HCM	ø32 to 63
Clamp Cylinder	CAC4	ø40 to 80
Clamp Cylinder with Fall Prevention	UCAC2	ø50, ø63
Lightweight Clamp Cylinder	CAC-N	ø32, ø40
Lightweight Clamp Cylinder	UCAC-N32	ø32, ø40
Rotary Clamp Cylinder	RCS2	ø32 to 63
Rotary Clamp Cylinder	RCC2	ø32 to 63
Pin Clamp Cylinder	PCC	(ø50)

K Series	Applicable Cylinders	SMG STR2



K□H
K3PH



K□V
K3PV



K□YH



K□YV

Specifications

Item	Solid state 2-wire type		Solid state 3-wire type		
	K2H, K2 V	K2YH, K2YV	K3H/V (NPN output type)	K3PH/V (PNP output type)	K3YH/V (2-color indicator type)
Applications	For programmable controller only		For programmable controller, relay		
Output method	–		NPN output	PNP output	NPN output
Power supply voltage	–		10 to 28 VDC		
Load voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 20 mA (*1)		50 mA or less		
Current consumption	–		10 mA or less at 24 VDC	10 mA or less at 24 VDC	10 mA or less at 24 VDC
Internal voltage drop	4 V or less		0.5 V or less		
Indicator Lamp	Red LED (Lights up when ON)	Red/Green LED (Lights up when ON)	Red LED (Lights up when ON)	Yellow LED (Lights up when ON)	Red/Green LED (Lights up when ON)
Leakage current	1 mA or less		10 μA or less		
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.3 mm²)	1 m (Oil-resistant vinyl cabtyre cord 3-core 0.2 mm²)		1 m (Oil-resistant vinyl cabtyre cord 3-core 0.2 mm²)
Shock resistance	980 m/s²				
Insulation resistance	20 MΩ or more with 500 VDC megger	100 MΩ or more with 500 VDC megger	20 MΩ or more with 500 VDC megger		100 MΩ or more with 500 VDC megger
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute				
Ambient Temperature	-10 to +60°C				
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)				
Weight	1 m: 18 g 3 m: 49 g 5 m: 80 g	1 m: 31 g 3 m: 85 g 5 m: 139 g	1 m: 18 g 3 m: 49 g 5 m: 80 g		1 m: 31 g 3 m: 85 g 5 m: 142 g

Item	Reed 2-wire type			
	K0H, K0 V		K5H, K5 V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator light), series connection	
Power supply voltage	–			
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Current consumption	–			
Internal voltage drop	3 V or less (In case of DC, when load current is 30 mA)		0.1 V or less (*2)	
Indicator Lamp	Red LED (Lights up when ON)		–	
Leakage current	0 mA			
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core 0.2 mm²)			
Shock resistance	294 m/s²			
Insulation resistance	20 MΩ or more with 500 VDC megger			
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute			
Ambient Temperature	-10 to +60°C			
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)			
Contact protection circuit *3	None			
Weight	1 m: 18 g 3 m: 49 g 5 m: 80 g			

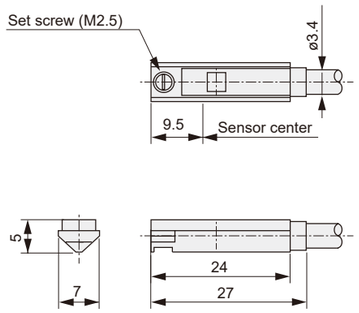
*1: Max. load current of K2H, K2V: 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (It will be 5 to 10 mA at 60°C.)
*2: Internal resistance 0.5Ω or less
*3: For contact protection measures, see P. 899.

Cylinder Switch

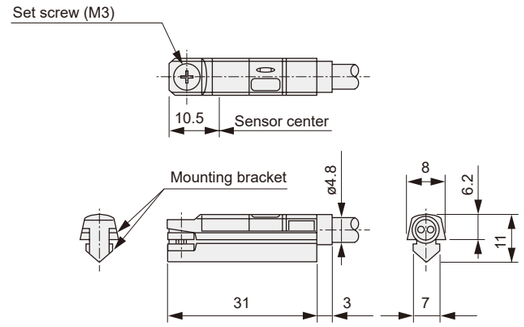
External dimension diagram / Switch internal circuit diagram

Outline Dimension Drawing

●K□H Series (Straight lead wire type)



●K□YH Series
(2-color indicator type, Straight lead wire type)

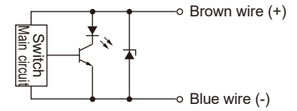


●K□V Series (L-shaped lead wire type)

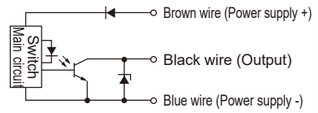
●K□YV Series
(2-color indicator type, L-shaped lead wire type)

Switch internal circuit diagram

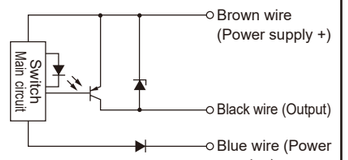
●K2H, K2V, K2YH, K2YV



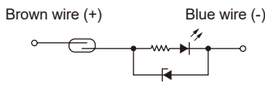
●K3H, K3V, K3YH, K3YV



●K3PH, K3PV



●K0H, K0V



●K5H, K5V



Cylinder Switch

F Series	Applicable Cylinders	CKL2, LCG, LCM, LCR, MDC2, MSD, MSDG-L, MVC, RCS2, SSD2, STM, Gripper (LSH, BSA2, LHA)

Flexible lead wires are used as standard.

*Some bore sizes cannot be combined.



F□S



F□V



F□H

F□YV
F3PV



F□YH
F3PH

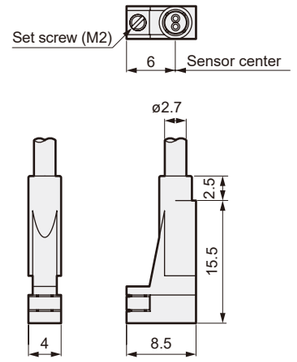
Specifications

Item	Reed 2-wire type	Solid state 2-wire type		Solid state 3-wire type		
	F0H/V	F2H/V, F2S	F2YH, F2YV	F3H/V, F3S	F3PH/V	F3YH, F3YV
Applications	For programmable controller only			For programmable controller, relay		
Output method	–			NPN output	PNP output	NPN output
Power supply voltage	–			10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	24 VDC ±10%	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA (*1)			50 mA or less		
Current consumption	–			10 mA or less at 24 VDC		
Internal voltage drop	4 V or less			0.5 V or less	0.5 V or less at 30 mA	0.5 V or less
Indicator Lamp	Yellow LED (Lights up when ON) *3		Red/Green LED (Lights up when ON)	Yellow LED *3 (Lights up when ON)	Yellow LED (Lights up when ON)	Red/Green LED (Lights up when ON)
Leakage current	1 mA or less			10 μA or less		
Lead wire length	1 m (Flexible, oil-resistant vinyl cabtyre cord 2-core 0.15 mm²)			1 m (Flexible, oil-resistant vinyl cabtyre cord 3-core 0.15 mm²)		
Shock resistance	294 m/s²	980 m/s²				
Insulation resistance	20 MΩ or more with 500 VDC megger					
Dielectric strength	No abnormality when AC1000 V is applied for 1 minute					
Ambient Temperature	-10 to +60°C					
Protection structure	IEC standard IP67, JIS C0920 (Immersible type)					
Contact protection circuit *4	None	–				
Weight	1 m: 10 g 3 m: 29 g			1 m: 10 g 3 m: 29 g		

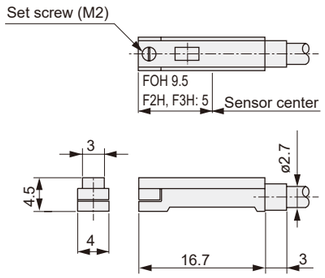
*1: The maximum load current for F2H and F2 V is 20 mA at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (It will be 5 to 10 mA at 60°C.)
*2: For F2S and F3S, when mounting two switches in one groove for both-end detection, please mount them so that the set screw parts of each switch face outward.
*3: The indicator light for F2S and F3S is red.
*4: For contact protection measures, see P. 899.
*5: Flexible lead wires are used.

Outline Dimension Drawing

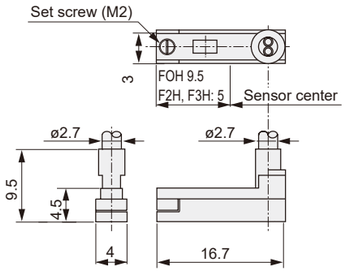
●F□S series (Lead wire vertical extraction short stroke detection type)



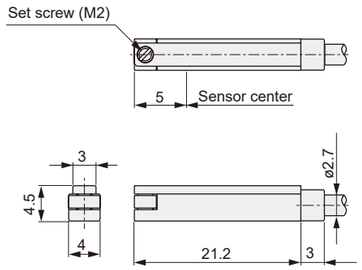
●F□H series (Straight lead wire type)



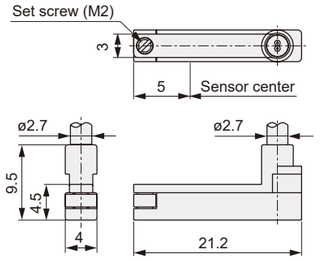
●F□V series (L-shaped lead wire type)



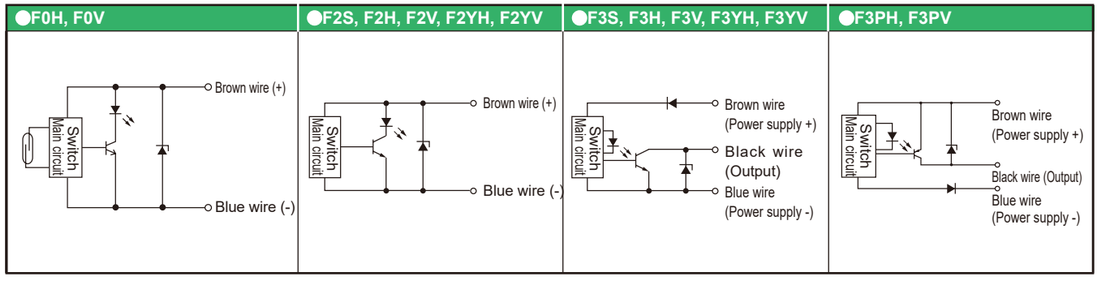
●F□YH / F3PH series (Straight lead wire type)



●F□YV / F3PV series (L-shaped lead wire type)



Switch internal circuit diagram



H Series	For strong magnetic field	Applicable Cylinders	CAC4-L2, GLC-L2, JSC3-L2, SCA2-L2, SHC-L2, UCAC2-L2, USC-L2



H0



H0Y

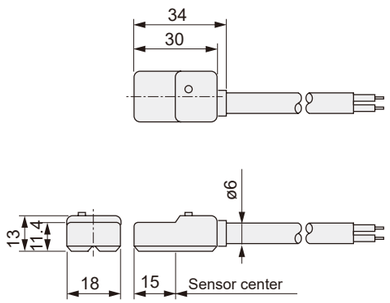
Specifications

Item	Reed 2-wire type		
	H0		H0Y (2-color indicator type)
Applications	For programmable controller, relay		For programmable controller only
Load voltage	12/24 VDC	110 VAC	24 VDC ±10%
Load current	5 to 50 mA	7 to 20 mA	5 to 20 mA
Internal voltage drop	5 V or less		6 V or less
Indicator Lamp	Green LED (Lights up when ON)		Red/Green LED (Lights up when ON)
Leakage current	0 mA		10 μA or less
Lead wire length	1 m (Flame-retardant cabtyre cord 2-core 0.5 mm²)		
Insulation resistance	100 MΩ or more with 500 VDC megger		
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute		
Shock resistance	294 m/s²		
Ambient temperature range	-10 to +60°C		
Protection structure	IEC standard IP67, JIS C0920 (Immersible type), Oil resistant		
Contact protection circuit *1	None		
Weight	1 m: 76 g 3 m: 181 g 5 m: 289 g		

*1: For contact protection measures, see P. 899.

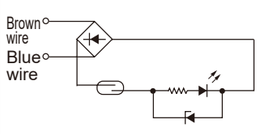
Outline Dimension Drawing

●H series (For strong magnetic field resistance)



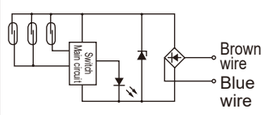
Switch internal circuit diagram

● H0



This switch has no polarity.

● H0Y



This switch has no polarity.

Cylinder Switch

Specifications / External dimension diagram / Switch internal circuit diagram

V Series	For small strong magnetic field resistance	Applicable Cylinders	SSD-L4, SSD2-L4, USSD-L4



VO

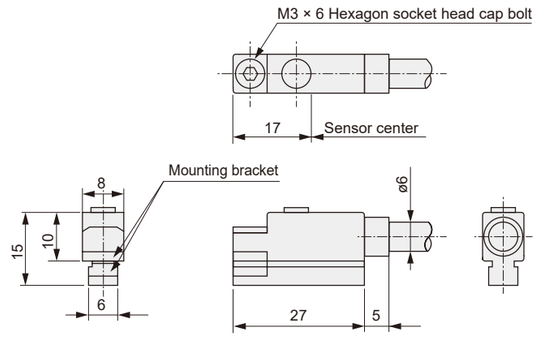
Specifications

Item	Reed 2-wire type	
	V0	
Applications	For relay, programmable controller	
Load voltage	24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Internal voltage drop	3.0 V or less (When load current is 40 mA)	
Indicator Lamp	LED (Lights up when ON)	
Leakage current	0 mA	
Lead wire length	1 m (Flame-retardant cabtyre cord 2-core 0.5 mm²)	
Insulation resistance	100 MΩ or more with 500 VDC megger	
Dielectric strength	No abnormality when 1000 VAC is applied for 1 minute	
Shock resistance	294 m/s²	
Ambient Temperature	-10 to +60°C	
Protection structure	IEC standard IP67, JIS C0920 (Immersible type), Oil resistant	
Contact protection circuit *1	None	
Weight	1 m: 63 g 3 m: 170 g 5 m: 277 m	

*1: For contact protection measures, see P. 899.

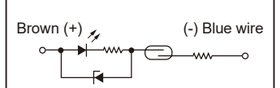
Outline Dimension Drawing

● V series (For strong magnetic field resistance)



Switch internal circuit diagram

● V0



Cylinder Switch

E Series	Heat resistant	Applicable Cylinders	SCA2-L2T (E0) SSD-T1L (ET0) SSD2-T1L (ET0)



EO



ETO

(EO is not subject to CE, UKCA)

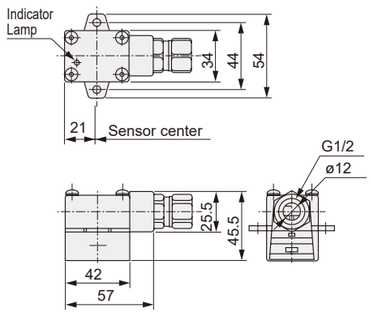
Specifications

Item	Reed 2-wire type				
	E0			ET0	
Applications	For relay, programmable controller				
Load voltage	12/24 VDC	110 VAC	220 VAC	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 50 mA	7 to 20 mA
Internal voltage drop	4 V or less			3.0 V or less	
Leakage current	0 mA				
Indicator Lamp	Red LED (Lights up when ON)			Yellow LED (Lights up when ON)	
Conduit thread	G1/2			–	
Lead wire length	–			1 m (Heat-resistant fluorine insulated cabtyre cord 2-core 0.5 mm²)	
Insulation resistance	100 MΩ or more with 500 VDC megger				
Dielectric strength	No abnormality when AC1500 V is applied for 1 minute			No abnormality when 1000 VAC is applied for 1 minute	
Shock resistance	294 m/s²				
Ambient Temperature	-10 to +120°C			-10 to +150°C	
Protection structure	IEC standard IP67, JIS C0920 (Immersible type), Oil resistant				
Contact protection circuit Note	None				
Weight	164 g			44 g	

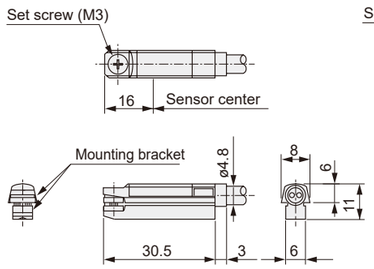
Note: For contact protection measures, refer to P. 899.

Outline Dimension Drawing

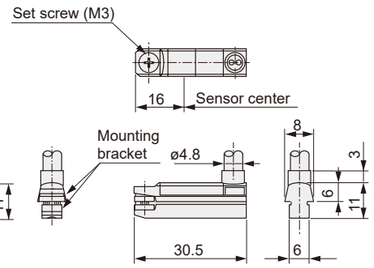
● E Series



●ET0H series (Straight lead wire type)

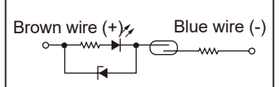


●ET0V series (L-shaped lead wire type)



Switch internal circuit diagram

● E0



● ET0H



Contact Protection Circuit Box	SKAC, SKDC



Specifications

Item	For AC circuit		For DC circuit
	SKAC		SKDC
Load voltage	100/110 VAC	200/220 VAC	24 VDC
Load current	20 mA or less	10 mA or less	50 mA or less
Lead wire length	1 m (Oil-resistant vinyl cabtyre cord 2-core, 0.2 mm²)		
Shock resistance	980 m/s²		
Insulation resistance	100MΩ or more with 500 VDC megger		
Dielectric strength	No abnormality when AC1500 V is applied for 1 minute		
Ambient Temperature	-10 to +60°C		
Protection structure	IEC standard IP67, JIS C0920 (Immersible type), Oil resistant		

Model No. Notation Method

SW-SKAC

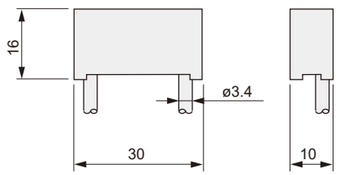
❶ Contact protection circuit

❶ Contact protection circuit

Code	Content
SKAC	For AC circuit
SKDC	For DC circuit

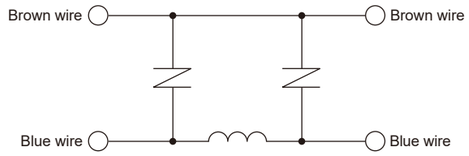
Outline Dimension Drawing

●SKAC/SKDC series



Internal circuit diagram

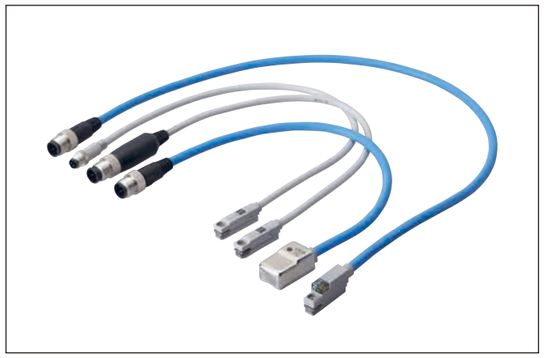
● SKAC/SKDC



*: There is no polarity on the input or output side, and either can be connected to the switch side.

Note: SKAC is exclusively for AC circuits, and SKDC is exclusively for DC circuits.

Cylinder Switch with Connector



Adopts highly versatile M8 and M12 connectors

- Compliant with Standard No. NECA4202, IEC947-5-2
- Reduction of wiring man-hours, Easy maintenance
- Protection structure is IP67
- Spatter adhesion prevention protective cover available

●For T0H



●For T2YD



Model No. Notation Method

*This is a custom order product.

● 2-wire cylinder switch

SW - T0 (1) H (2) F (3) K (4)

❶ Model	❷ Lead Wire Exit Direction		❸ 3 Connector Type, PIN Arrangement		Lead wire length		● Options *3	
T0	H	Straight type	F	M8 connector 4PIN (+) 3PIN (-) *1	Blank	0.3 m	K	Spatter adhesion prevention protective cover
T2	V	L-shaped type	M	M12 connector 1PIN (+) 4PIN (-)				
T2W			U	M12 connector 3,4PIN no polarity *2				
T2YL								
K2Y								
F2Y								

*1: Compatible only with T0, T2, T2W
*2: T2YL is not compatible. Please note that the "internal voltage drop" will be 1 V higher than the specification value described in the catalog.

*3: Applicable only to T0H□□

● 3-wire cylinder switch

SW - T3 (1) H (2) F (3)

❶ Model	❷ Lead Wire Exit Direction		❸ 3 Connector Type		Lead wire length	
T3	H	Straight type	F	M8 1PIN(+) 3PIN(-) 4PIN: (OUT)	Blank	0.3 m
T3P	V	L-shaped type				
T3W						

● Cylinder switch for strong magnetic fields

SW - H0 (1) M (2)

❶ Model	❷ Connector Types		Lead wire length	
H0	M	M12 connector 1,4PIN no polarity *4	Blank	0.3 m
H0Y	U	M12 connector 3,4PIN no polarity *5		
V0				

*4: Compatible only with H0, H0Y
*5: V0 only 4PIN (+) 3PIN (-)

● Cylinder switch exclusively for AC magnetic fields

SW - T2YD (1) G (2) K (3)

❶ Model	❷ Connector Types		Lead wire length		● Options	
T2YD	G	Spatter-resistant lead wire M12 connector 1,4PIN no polarity	Blank	0.3 m	K	Spatter adhesion prevention protective cover
	B	Spatter-resistant lead wire M12 connector 3,4PIN no polarity				
	U	Flame-retardant lead wire UL wire M12 connector 3,4PIN non-polar				
	W	Flame-retardant lead wire UL wire M12 connector 1,4PIN non-polar				

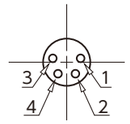
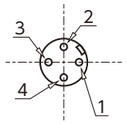
*6: The switch specifications for the cylinder are the same as the lead wire type. For details, please refer to P. 884 to 894.

Connector pin assignment

Series	Connector pin assignment					
	Code	Connector type	1PIN	2PIN	3PIN	4PIN
2-wire type	F	M8	-	-	(−)	(+)
	M	M12	(+)	-	-	(−)
	U		-	-	(±)	(±)
Exclusively for strong magnetic field AC magnetic field	M, G, W		(±)	-	-	(±)
	U, B *1		-	-	(±)	(±)
3-wire type	F	M8	(+)	-	(−)	(OUT)

*1: Only SW-V0U has polarity (4PIN (+), 3PIN (-)).

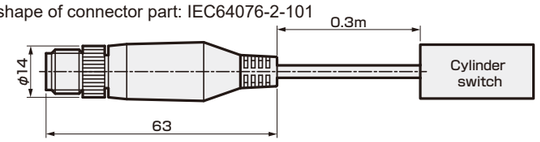
Connector specifications

Item	M8	M12
Pin assignment		
Shock resistance	294 m/s²	
Protection structure	IP67	
Insulation resistance	100MΩ with 500 VDC megger	
Dielectric strength	1000 VAC for 1 minute (Between contacts and between contact housing) Leakage current 1 mA or less	

Outline Dimension Drawing

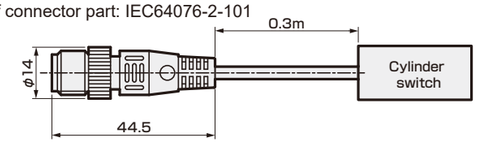
① M12 connector (Only for 2-wire cylinder switch connector type, PIN assignment symbol "U")

Standard for external shape of connector part: IEC64076-2-101



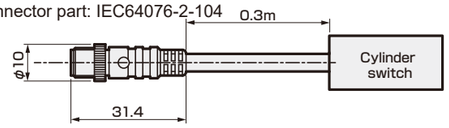
② M12 connector (M12 connectors other than ①)

Standard for external shape of connector part: IEC64076-2-101



③ M8 connector (Applicable to all models)

Standard for external shape of connector part: IEC64076-2-104



* For the external dimensions diagram of the cylinder switch, please refer to P. 886 to 898.

T-type cylinder switch with off-delay timer
T2JH/T2JV



Overview

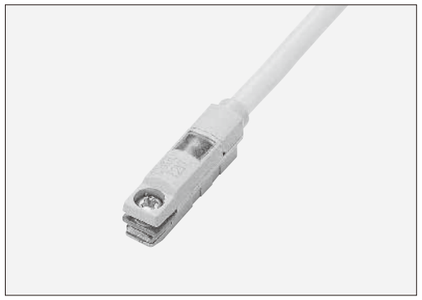
Optimal for high-speed intermediate detection of cylinders.
Ensures reliable PC input by providing an off-delay timer.

Features

· Eliminates PC input problems that tend to occur during high-speed intermediate detection of cylinders.
· Off-delay timer is 200 ±50 ms
· Can be mounted on Rodless Cylinder SRL3.
· Wide variety of mountable cylinders.

*If ordered with cylinder mounting, it will be a custom order product.
*Some cylinders have limited mountable switches. Please refer to the P. for each cylinder for details.

T-type cylinder switch for cutting oil resistance
T2YLH/V, T3YLH/V



Overview

This is a cylinder switch designed to prevent cutting oil used for machine tools in machining sites, etc., from entering the inside of the switch.

Features

· Oil resistance improved by applying a coating agent to the board. Can be used even in environments where cutting oil splashes.
· Wide variety of mountable cylinders

*If ordered with cylinder mounting, it will be a custom order product.

Water-resistant Cylinder Switch
T2WLH/V



Features

Product with improved water (coolant) resistance
· Water (coolant) resistance performance: 6 times or more compared to conventional products
· Space saving (70% down compared to conventional), Lightweight (46% down compared to conventional)
· Compatible with existing switch SW-T2YL
· Reduction of wiring space (Can be stored in T-slot)
· Protection structure IP67

Magnetic Field Resistant Cylinder Switch
T0Y

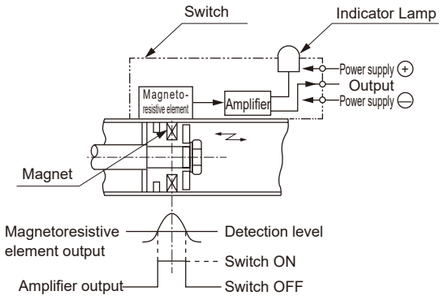


Features

Product with improved reliability in magnetized environments (Optimal for DC welding processes)
· Space saving (70% down compared to conventional products)
· Power saving (50% down compared to conventional products)
· Compatible with existing switch SW-T2YD (excluding some models and bores)
· Wide range of variations (cable material, connectors, spatter adhesion prevention cover)
· Protection structure IP67

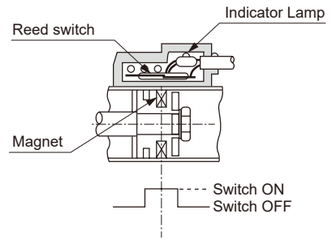
Operating Principle

Solid state switch



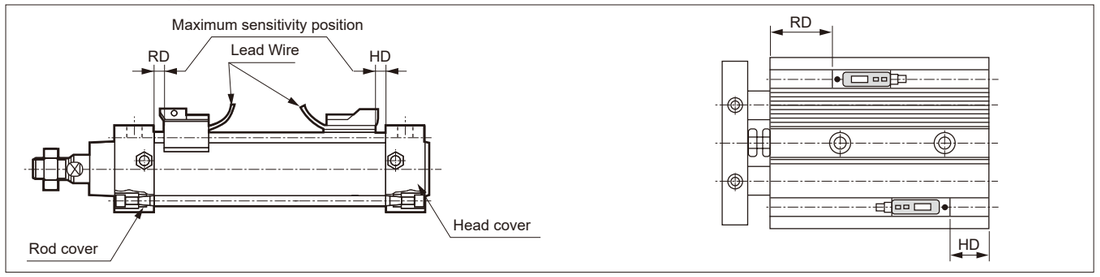
When the piston magnet approaches, a change occurs in the magnetic field, and the output voltage of the magnetoresistive element changes as shown in the figure. By amplifying this signal, a switching output as shown in the figure can be obtained.

Reed switch



When the piston magnet approaches, a magnetic field is generated, the opposing contacts of the reed switch are magnetized, an attractive force is generated, and the contacts close.

Switch mounting position



● When mounting at stroke end

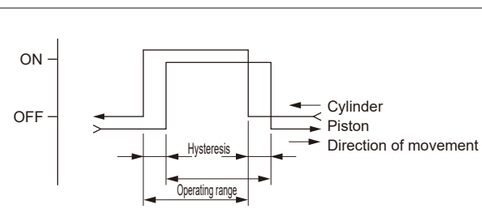
To operate the switch at the maximum sensitivity position, please mount it at the RD dimension on the rod side and the HD dimension on the head side, respectively. Note that the HD and RD dimensions vary depending on the cylinder. Please refer to the external dimension diagram for each cylinder. Also, please mount the switch with the lead wire facing inward as shown in the figure above.

● When mounting at intermediate stroke position

When detecting in the middle of the stroke, fix the piston at the stopping position and move the switch back and forth over the piston to find the position where the switch first turns ON. The midpoint between those two positions is the maximum sensitivity position at that piston position, and becomes the mounting position.

● About circumferential direction mounting

Varies depending on the mounting bracket. The band method has no restrictions in the circumferential direction. For the tie-rod method, rotation in 90° increments is possible. For rail type, circumferential rotation is not possible.



Hysteresis

●This is the distance from the position where the piston moves and the switch turns ON, to when it moves in the reverse direction and turns OFF. If the piston stops during this time, the switch operation becomes unstable and susceptible to external influences. Please be careful.

Operating range

●This refers to the range from when the piston moves and the switch turns ON, to when it moves further in the same direction and turns OFF. The center of the operating range is the maximum sensitivity position. If this position is set as the piston stop position, it will be less susceptible to disturbances and the switch operation will also be stable.

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Pencil Shaped Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T2W□,T3W□,T2WL□), Reed switches (T0□,T5□)						
SCP□3	ø6	1.5 to 4	2.5 to 5	1.5 or less	1.0 or less	4 to 6	3 or less
	ø10	1.5 to 5.5	2.5 to 6			3.5 to 7	
	ø16	2 to 6	2.5 to 6			3.5 to 7.5	
Small bore size cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□, T8□)						
CMK2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12	
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5	
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Small Bore Size Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□, T8□)						
CMA2	ø20	3 to 6	5 to 6.5	1.5 or less	1.0 or less	8.5 to 12	3 or less
	ø30	3 to 5.5	6 to 7			8 to 13	
	ø40	2.5 to 5.5	5.5 to 7.5			8.5 to 12.5	
Round shaped cylinder	●Applicable Switch: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SCM	ø20	3 to 8	4.5 to 9	1.5 or less	1.0 or less	6 to 14	3 or less
	ø25	3 to 9	5 to 9			5 to 14	
	ø32	3 to 8	5 to 9			5 to 12	
	ø40	3 to 9	5.5 to 9.5			6 to 14	
	ø50	3 to 9	6 to 10			6 to 14	
	ø63	3 to 9	6 to 10.5			7 to 15	
	ø80	4 to 10	6.5 to 11			7 to 15	
	ø100	4 to 10	7 to 11.5			9 to 15	
Tie Rod Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SCG	ø32	2 to 7	6 to 9	1.5 or less	1.0 or less	6 to 11	3 or less
	ø40	2 to 7	6.5 to 9			7 to 12	
	ø50	2 to 7	7 to 10			7.5 to 12	
	ø63	2 to 7.5	7 to 10			8.5 to 13	
	ø80	2.5 to 8	7.5 to 10.5			9 to 13.5	
	ø100	2.5 to 8	8 to 11			9 to 14	
Medium Bore Size Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SCA2	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less
	ø50	2 to 7.5	3 to 10			5.5 to 13.5	
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14	
	ø80	3 to 8	4 to 11.5			6.5 to 14.5	
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5	
Medium Bore Size Cylinder	●Applicable Switch: Reed switch for strong magnetic field (H0□) *( ) indicates HOY value.						
SCA2-L2	ø40	-		-	-	4 to 7.5 (10.5 to 13.5)	3 or less
	ø50					4 to 7.5 (11 to 14)	
	ø63					5 to 8 (11.5 to 14.5)	
	ø80					5 to 8 (10.5 to 14.5)	
	ø100					5 to 8 (10.5 to 14.5)	
Large Bore Size Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SCS2	ø125	7.5 to 14	14 to 21	1.5 or less	1.0 or less	11 to 16	3 or less
	ø140	7.5 to 14	18 to 26				
	ø160	7.5 to 14	18 to 26				
	ø180	7.5 to 14	18 to 26				
	ø200	7.5 to 14	18 to 26				

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Tie Rod Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□, T8□)						
CKV2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12	
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5	
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Tie Rod Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
CAV2-L **COVP2-L** **COVN2-L**	ø50	3.8 to 6.7	4 to 6	0.8 or less	0.7 or less	7.7 to 8.3	1 or less
	ø75	3.8 to 6.7	4 to 6			7.7 to 8.3	
	ø100	3.8 to 6.7	4 to 6			7.7 to 8.3	
Compact Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SSD2	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less
	ø16	1.5 to 4.5	3 to 7			4 to 9	
	ø20	3 to 8	4.5 to 8			6 to 14	
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
	ø80	4 to 10	6 to 10			7 to 15	
	ø100	4 to 10	6 to 10			9 to 15	
	ø125	4 to 10	8 to 10			9 to 15	
	ø140	4 to 10	8 to 10			9 to 15	
	ø160	4 to 10	8 to 10			9 to 15	
Compact Cylinder	●Applicable switches: Reed switch (ET0□)						
SSD2-T1L	ø16	-		-	-	8 to 11.5	3 or less
	ø20					9 to 13.5	
	ø25					9.5 to 14	
	ø32					9 to 13	
	ø40					9 to 14	
	ø50					11 to 16	
	ø63					13 to 18	
Compact Cylinder	●Applicable Switch: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SSG	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less
	ø16	1.5 to 4.5	3 to 7			4 to 9	
	ø20	3 to 8	4.5 to 8			6 to 14	
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			7 to 15	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
	ø80	4 to 10	6 to 10			9 to 15	
	ø100	4 to 10	6 to 10			9 to 15	

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Compact Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
SSD	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less
	ø16	1.5 to 4.5	3 to 7			4 to 9	
	ø20	3 to 8	4.5 to 8			6 to 14	
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
	ø80	4 to 10	6 to 10			7 to 15	
	ø100	4 to 10	6 to 10			9 to 15	
	ø125	4 to 10	8 to 10			9 to 15	
	ø140	4 to 10	8 to 10			9 to 15	
	ø160	4 to 10	8 to 10			9 to 15	
Compact Cylinder	●Applicable switches: Reed switch (ET0□)						
SSD-T1L	ø16	-		-	-	8 to 11.5	3 or less
	ø20					9 to 13.5	
	ø25					9.5 to 14	
	ø32					9 to 13	
	ø40					9 to 14	
	ø50					11 to 16	
	ø63					13 to 18	
Small Direct Cylinder	●Applicable switches: Solid state switches (F2□, F3□), Reed switch (F0□)						
MDC2	ø6	1.5 to 3.5	-	1.0 or less	-	3.5 to 6.0	1.0 or less
	ø8						
	ø10						
MDC2-X	ø6	2.0 to 3.5	-	1.0 or less	-	5.5 to 7.5	1.0 or less
	ø8						
	ø10						
MDC2-Y	ø6	1.5 to 3.5	-	1.0 or less	-	4.5 to 6.0	1.0 or less
	ø8						
	ø10						
Compact direct cylinder with vacuum pad	●Applicable switches: Solid state switches (F2□, F3□), Reed switch (F0□)						
MVC	ø6	1.5 to 3.5	-	1.0 or less	-	3.5 to 6.0	1.0 or less
	ø10					4.5 to 6.0	
Compact cylinder	●Applicable switches: Solid state switches (K2□, K3□, K3P□, K2Y□, K3Y□), Reed switches (K0□, K5□)						
SMG	ø6	1.5 to 7	3.5 to 7.5	2 or less	1.5 or less	3 to 9.5	3 or less
	ø10	1.5 to 7	3.5 to 7.5			3.5 to 9.5	
	ø16	1.5 to 7	4.5 to 8.5			4 to 11	
	ø20	2.5 to 9	5 to 9			5 to 12.5	
	ø25	3.5 to 11	5.5 to 9.5			6.5 to 14	
	ø32	3.5 to 11.5	1.5 to 10.5			5.5 to 14	
Compact Cylinder	●Applicable switches: Solid state switches (F2□, F3□), Reed switch (F0□)						
MSD-□L MSDG-L	ø6	1.5 to 3.0	-	1.0 or less	-	5 to 6	1.0 or less
	ø8	1.5 to 3.5	-			5.5 to 6.5	
	ø12	1.5 to 3.5	-			5.5 to 7.5	
	ø16	1.5 to 3.5	-			4.5 to 7	

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Flat Cylinder Compact Demi	●Applicable switches: Applicable switches: Solid state switches (M2V,M3V,M3PV,M2WV,M3WV), Reed switches (M0V,M5V)						
FCS-L	ø25	9 to 12	6 to 11	1.5 or less	1.0 or less	7 to 8.5	3 or less
	ø32	9 to 12	6 to 11			7 to 8.5	
	ø40	8.5 to 12	6 to 11			7 to 8.5	
	ø50	8 to 12	6 to 11			6.5 to 8.5	
	ø63	8 to 12	6 to 11			6.5 to 8.5	
FCH-L FCD-L FCD-DL FCD-KL	ø25	6 to 12	5 to 11	1.5 or less	1.0 or less	7 to 12	3 or less
	ø32	6 to 12	5 to 11			7 to 12	
	ø40	6 to 12	5 to 11			7 to 12	
	ø50	6 to 12	5 to 11			7 to 12	
	ø63	6 to 12	5 to 11			7 to 12	
Stopper Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□, T8□)						
STK	ø20	3 to 8	4.5 to 8	1.5 or less	1.5 or less	6 to 14	3 or less
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
Brake Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
ULK	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12	
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5	
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Brake Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
JSK2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12	
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5	
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Brake Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
JSM2	ø20	3 to 6	5 to 6.5	1.5 or less	1.0 or less	8.5 to 12	3 or less
	ø30	3 to 5.5	6 to 7			8 to 13	
	ø40	2.5 to 5.5	5.5 to 7.5			8.5 to 12.5	
Tie Rod Cylinder with Brake	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
JSG	ø32	2 to 7	6 to 9	1.5 or less	1.0 or less	6 to 11	3 or less
	ø40	2 to 7	6.5 to 9			7 to 12	
	ø50	2 to 7	7 to 10			7.5 to 12	
	ø63	2 to 7.5	7 to 10			8.5 to 13	
	ø80	2.5 to 8	7.5 to 10.5			9 to 13.5	
	ø100	2.5 to 8	8 to 11			9 to 14	

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Brake Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
JSC3 (Medium bore)	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less
	ø50	2 to 7.5	3 to 10			5.5 to 13.5	
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14	
	ø80	3 to 8	4 to 11.5			6.5 to 14.5	
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5	
Brake Cylinder	●Applicable switches: Reed switch for strong magnetic field (H0□)					Note: ( ) indicates H0Y value.	
JSC3-L2 (Medium bore)	ø40	-		-		4 to 7.5 (10.5 to 13.5)	3 or less
	ø50					4 to 7.5 (11 to 14)	
	ø63					5 to 8 (11.5 to 14.5)	
	ø80					5 to 8 (10.5 to 14.5)	
	ø100					5 to 8 (10.5 to 14.5)	
Brake Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
JSC4 (Large bore)	ø125	7.5 to 14	14 to 21	1.5 or less	1.0 or less	11 to 16	3 or less
	ø140	7.5 to 14	18 to 26			11 to 16	
	ø160	7.5 to 14	18 to 26			11 to 16	
	ø200	7.5 to 14	18 to 26			11 to 16	
Compact Cylinder with Drop Prevention	● Applicable Switch: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
USSD	ø20	3 to 8	4.5 to 8	1.5 or less	1.0 or less	6 to 14	3 or less
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
Flat Cylinder with Free Position Drop Prevention	● Applicable Switch: Solid state switches (M2□, M3□, M3P□, M2W□, M3W□), Reed switches (M0□, M5□)						
UFCD	ø25	6 to 12	5 to 11	1.5 or less	1.0 or less	7 to 12	3 or less
	ø32	6 to 12	5 to 11			7 to 12	
	ø40	6 to 12	5 to 11			7 to 12	
	ø50	6 to 12	5 to 11			7 to 12	
	ø63	6 to 12	5 to 11			7 to 12	
Medium Bore Size Cylinder with Free Position Fall Prevention	● Applicable Switch: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
USC	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less
	ø50	2 to 7.5	3 to 10			5.5 to 13.5	
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14	
	ø80	3 to 8	4 to 11.5			6.5 to 14.5	
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5	
Medium Bore Size Cylinder with Free Position Fall Prevention	● Applicable Switch: Reed switch for strong magnetic field (H0□)					Note: ( ) indicates H0Y value.	
USC-L2	ø40	-		-	-	4 to 7.5 (10.5 to 13.5)	3 or less
	ø50					4 to 7.5 (11 to 14)	
	ø63					5 to 8 (11.5 to 14.5)	
	ø80					5 to 8 (10.5 to 14.5)	
	ø100					5 to 8 (10.5 to 14.5)	
Guided Cylinder	●Applicable switches: Proximity switch (F2□, F3□, F2Y□, F3Y□)						
STM	ø10	2.5 to 4.5	2.5 to 5.5	1.5 or less	1.5 or less	-	-
	ø16	2.5 to 4.5	2.5 to 5.5				

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Guided Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
STG	ø12	1.5 to 4.5	4 to 6	1.5 or less	1.5 or less	6 to 10	3 or less
	ø16	1.5 to 4.5	4 to 6			4 to 9	
	ø20	3 to 8	5 to 8.5			6 to 14	
	ø25	3 to 9	5 to 8.5			5 to 14	
	ø32	3 to 9	5 to 9			5 to 12	
	ø40	3 to 9	6 to 10			6 to 14	
	ø50	3 to 9	6 to 10			6 to 14	
	ø63	3 to 9	6 to 10			7 to 15	
	ø80	4 to 10	7 to 10			7 to 15	
Guided Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
STS/L	ø8	1.5 to 3.5	4 to 6	1.5 or less	1.5 or less	5 to 9	3 or less
	ø12	1.5 to 4.5	4 to 6			6 to 10	
	ø16	1.5 to 4.5	4 to 6			4 to 9	
	ø20	3 to 8	5 to 8.5			6 to 14	
	ø25	3 to 9	5 to 8.5			5 to 14	
	ø32	3 to 8	5 to 9			5 to 12	
	ø40	3 to 9	6 to 10			6 to 14	
	ø50	3 to 9	6 to 10			6 to 14	
	ø63	3 to 9	6 to 10			7 to 15	
	ø80	4 to 10	7 to 10			7 to 15	
	ø100	2 to 9	7 to 10			7 to 15	
Linear Slide Cylinder	●Applicable switches: Proximity switch (F2□, F3□, F2Y□, F3Y□)						
LCW	ø12	3.5 to 6.5	4.5 to 6.5	1.0 or less	1.0 or less	-	-
Linear Slide Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T2W□,T3W□), Reed switches (T0□,T5□)						
LCW	ø16	3 to 5	4 to 5.5	1.0 or less	1.0 or less	6.5 to 9.5	3.0 or less
	ø20	4.5 to 6.5	5.5 to 6.5			8 to 12	
Linear Slide Cylinder	●Applicable switches: Proximity switch (F2□, F3□, F2Y□, F3Y□)						
LCR	ø6	2 to 4	2.5 to 5.5	1.0 or less	1.0 or less	-	-
	ø8		3.5 to 6				
	ø12		3 to 4.5				
Linear Slide Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T3P□,T2W□,T3W□,T2WL□,T1□), Reed switches (T0□,T5□)						
LCR	ø16	2 to 4	3 to 4.5	1.0 or less	1.0 or less	5 to 9	1.0 or less
	ø20	2 to 5.5	4 to 5.5			6.5 to 11	
	ø25	2.5 to 6	3.5 to 6			8 to 12	
Linear Slide Cylinder	●Applicable switches: Proximity switch (F2□, F3□, F2Y□, F3Y□)						
LCG	ø6	2 to 4	2.5 to 5.5	1.0 or less	1.0 or less	-	-
	ø8		3.5 to 6				
	ø12		3 to 4.5				
Linear Slide Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T3P□,T2W□,T3W□,T2WL□,T1□), Reed switches (T0□,T5□)						
LCG	ø16	2 to 4	3 to 4.5	1.0 or less	1.0 or less	5 to 9	1.0 or less
	ø20	2 to 5.5	4 to 5.5			6.5 to 11	
	ø25	2.5 to 6	3.5 to 6			8 to 12	
Linear Slide Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T3P□,T2W□,T3W□,T2WL□,T1□), Reed switches (T0□,T5□)						
LCX	ø25	0.5 to 6	1.0 to 5.5	2 or less	2 or less	2 to 10.5	3.5 or less
	ø32	1.0 to 5.5	0.5 to 5.0			1 to 11	

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Linear Slide Cylinder	● Applicable switches: Proximity switch (F2□, F3□, F2Y□, F3Y□)						
LCM	ø4.5	1 to 3	2 to 4	1.0 or less	1.0 or less	-	-
	ø6						
	ø8						
Twin Rod Cylinder	● Applicable switches: Solid state switches (K2□, K3□, K3P□, K2Y□, K3Y□), Reed switches (K0□, K5□)						
STR2	ø6	1 to 6	4 to 7.5	2.0 or less	1.5 or less	4 to 9 (STR2-M)	3.0 or less
	ø10	1 to 5.5	4 to 7.5			4 to 9 (STR2-M)	
	ø16	1.5 to 7.5	4.5 to 9			5 to 12.5	
	ø20	3 to 9	5.5 to 10			6.5 to 14.5	
	ø25	3.5 to 10.5	6.5 to 10.5			8 to 14.5	
	ø32	-	-			-	
Unit Cylinder	● Applicable switches: Solid state switches (T2□,T3□), Reed switches (T0□,T5□)						
UCA2-□L	ø10	1.5 to 4	-	1.5 or less	-	4.5 to 8	3.0 or less
	ø16						
	ø25						
	ø32						
High Energy Absorption Cylinder	● Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
HCM	ø20	3 to 8	4.5 to 9	1.5 or less	1.0 or less	6 to 14	3 or less
	ø25	3 to 9	5 to 9			5 to 14	
	ø32	3 to 8	5 to 9			5 to 12	
	ø40	3 to 9	5.5 to 9.5			6 to 14	
	ø50	3 to 9	6 to 10			6 to 14	
	ø63	3 to 9	6 to 10.5			7 to 15	
High Speed Cylinder	● Applicable switches: Solid state switches (R1, R2, R3, R2Y, R3Y), Reed switches (R0, R4, R5, R6)						
HCA	ø20	6 to 14	11 to 18	1.5 or less	1.0 or less	7 to 14	3.0 or less
	ø25	6 to 14	11 to 18			8 to 13	
	ø32	6 to 14	11 to 18			9 to 14	
	ø50	6 to 14	11 to 18			9 to 14	
Rodless Cylinder	● Applicable switches: Solid state switches (M2□, M3□, M3P□, M2WV, M3WV), Reed switches (M0□, M5□)						
SRL3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less
	ø16	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	
	ø20	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	
	ø25	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	8.5 to 13.5	3.5 or less
	ø32	7.5 to 15	8 to 14	2.0 or less	1.5 or less	7 to 13.5	
	ø40	11.5 to 17.5	10 to 16.5	2.0 or less	1.5 or less	10 to 16	
	ø50	11 to 24	17 to 27	2.5 or less	1.5 or less	17 to 27	3.0 or less
	ø63	11 to 24	17 to 27	2.5 or less	1.5 or less	17 to 27	
	ø80	26.5 to 45.5	16.5 to 40	5.0 or less	3.0 or less	20.5 to 41	
	ø100	25.5 to 40.5	21.5 to 36	3.0 or less	2.5 or less	24 to 37	
Rodless Cylinder	● Applicable switches: Proximity switch (T2W□, T3W□, T2WL□, T2YD)						
SRL3	ø12	-	2 to 7	-	1.0 or less	-	-
	ø16	-	2 to 7				
	ø20	-	3 to 8	-	1.5 or less		
	ø25	-	3 to 10				
	ø32	-	3 to 10				
	ø40	-	4 to 11				
	ø50	-	9 to 16				
	ø63	-	9 to 16				
	ø80	-	10 to 24	-	2.0 or less		
	ø100	-	10 to 24				

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Rodless Cylinder with High-Precision Guide	● Applicable Switch: Solid state switches (M2□, M3□, M3P□, M2WV, M3WV), Reed switches (M0□, M5□)						
SRG3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less
	ø16	4 to 13	4 to 12			3 to 11	
	ø20	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	3 to 11	
	ø25	9.5 to 15.5	9 to 14			8.5 to 13.5	3.5 or less
Rodless Cylinder with High-Precision Guide	● Applicable switches: Proximity switch (T2W□, T3W□, T2WL□, T2YD)						
SRG3	ø12	-	2 to 7	-	1.0 or less	-	-
	ø16	-	2 to 7				
	ø20	-	3 to 8	-	1.5 or less		
	ø25	-	3 to 10				
Rodless Cylinder with High-Precision Guide	● Applicable Switch: Solid state switches (T2WL□,T2W□,T3W□,T2YD), Reed switches (T0□, T5□, T8□)						
SRM3	ø25	-	6 to 9	-	1.0 or less	5.5 to 11	2.0 or less
	ø32	-	6.5 to 9			5.5 to 10	
	ø40	-	7.5 to 10.5			5.5 to 9	
	ø63	-	8 to 11			5.5 to 10	
Rodless Cylinder with Brake	● Applicable switches: Solid state switches (M2□, M3□, M3P□, M2WV, M3WV), Reed switches (M0□, M5□)						
SRT3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less
	ø16	4 to 13	4 to 12			3 to 11	
	ø20	4 to 13	4 to 12			3 to 11	
	ø25	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	8.5 to 13.5	3.5 or less
	ø32	7.5 to 15	8 to 14			7 to 13.5	
	ø40	11.5 to 17.5	10 to 16.5			10 to 16	
	ø50	16.5 to 24	14 to 21			14.5 to 21.5	
	ø63	16 to 24	14 to 21			14 to 21.5	
Rodless Cylinder	● Applicable switches: Proximity switch (T2W□, T3W□, T2WL□, T2YD)						
SRT3	ø12	-	2 to 7	-	1.0 or less	-	-
	ø16	-	2 to 7				
	ø20	-	3 to 8	-	1.5 or less		
	ø25	-	3 to 10				
	ø32	-	3 to 10				
	ø40	-	4 to 11				
	ø50	-	9 to 16				
	ø63	-	9 to 16				
Magnet Type Rodless Cylinder	● Applicable switches: Solid State Switch (T2□, T3□, T3P□, T2W□, T3W□, T2WL□, T1□)						
MRL2	ø6	2 to 5	5.5 to 6.5	1.0 or less	1.0 or less	-	-
	ø10	2.5 to 5.5	6 to 7.5				
	ø16	2 to 5	5.5 to 7				
	ø20	2 to 5	6 to 5.5				
	ø25	2 to 5	6 to 5.5				
	ø32	2 to 4.5	5.5 to 6.5				
Magnet type super rodless cylinder high precision guide	● Applicable switches: Solid state switches (T2□, T3□, T3P□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□)						
MRG2	ø10	2 to 4.5	5.5 to 7	0.5 or less	0.5 or less	6.5 to 7.5	1 or less
	ø16	2 to 5	6 to 7.5			7 to 8	2 or less
	ø25	2 to 5	6 to 7			7.5 to 8	2 or less

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Clamp Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
CAC4	ø40	2 to 6.5	5.7 to 6.5	1.5 or less	1.0 or less	6.7 to 10.8	3 or less
	ø50	2.5 to 6.0	5.9 to 6.8			7.8 to 11.3	
	ø63	2.5 to 6	6.1 to 6.8			8.2 to 11.4	
	ø80	3 to 7	7.7 to 8.5			9 to 10.9	
Clamp Cylinder	●Applicable switches: Reed switch for strong magnetic field (H0□)						
CAC4-L2	ø40	-		-	-	6.7 to 10.8	3 or less
	ø50					7.8 to 11.3	
	ø63					8.2 to 11.4	
	ø80					6.6 to 7.5	
Clamp Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
UCAC2	ø50	2.5 to 6.0	5.9 to 6.8	1.5 or less	1.0 or less	7.8 to 11.3	3 or less
	ø63	2.5 to 6.5	6.1 to 6.8			8.2 to 11.4	
Clamp Cylinder	●Applicable switches: Reed switch for strong magnetic field (H0□)						
UCAC2-L2	ø50	-		-	-	7.8 to 11.3	3 or less
	ø63					8.2 to 11.4	
Lightweight Clamp Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
CAC	ø32	2.5 to 6	3.5 to 8	1.5 or less	1.0 or less	6.5 to 11.5	3 or less
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Lightweight clamp cylinder with fall prevention	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
UCAC	ø32	2.5 to 6	3.5 to 8	1.5 or less	1.0 or less	6.5 to 11.5	3 or less
	ø40	3 to 7	4 to 9			7.5 to 13.5	
Rotary Clamp Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T2YD, T1□), Reed switches (T0□, T5□, T8□)						
RCS2	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less
	ø16	1.5 to 4.5	3 to 7			4 to 9	
	ø20	3 to 8	4.5 to 8			6 to 14	
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
Rotary Clamp Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T3P□,T2W□,T3W□,T2WL□,T2YD), Reed switches (T0□,T5□)						
RCC2	ø16	2 to 5	3 to 7	1.5 or less	1.0 or less	4 to 9	3 or less
	ø20	3 to 8	4.5 to 8			6 to 14	
	ø25	3 to 9	4.5 to 8			5 to 14	
	ø32	3 to 8	4.5 to 8			5 to 12	
	ø40	3 to 9	5 to 8.5			6 to 14	
	ø50	3 to 9	5.5 to 9.5			6 to 14	
	ø63	3 to 9	5.5 to 9.5			7 to 15	
Rotary Clamp Cylinder	●Applicable switches: Solid state switches (T2□,T3□,T2W□,T3W□), Reed switches (T0□,T5□)						
RCS	ø16	2 to 5	3 to 7	1.5 or less	1.0 or less	4 to 9	3 or less

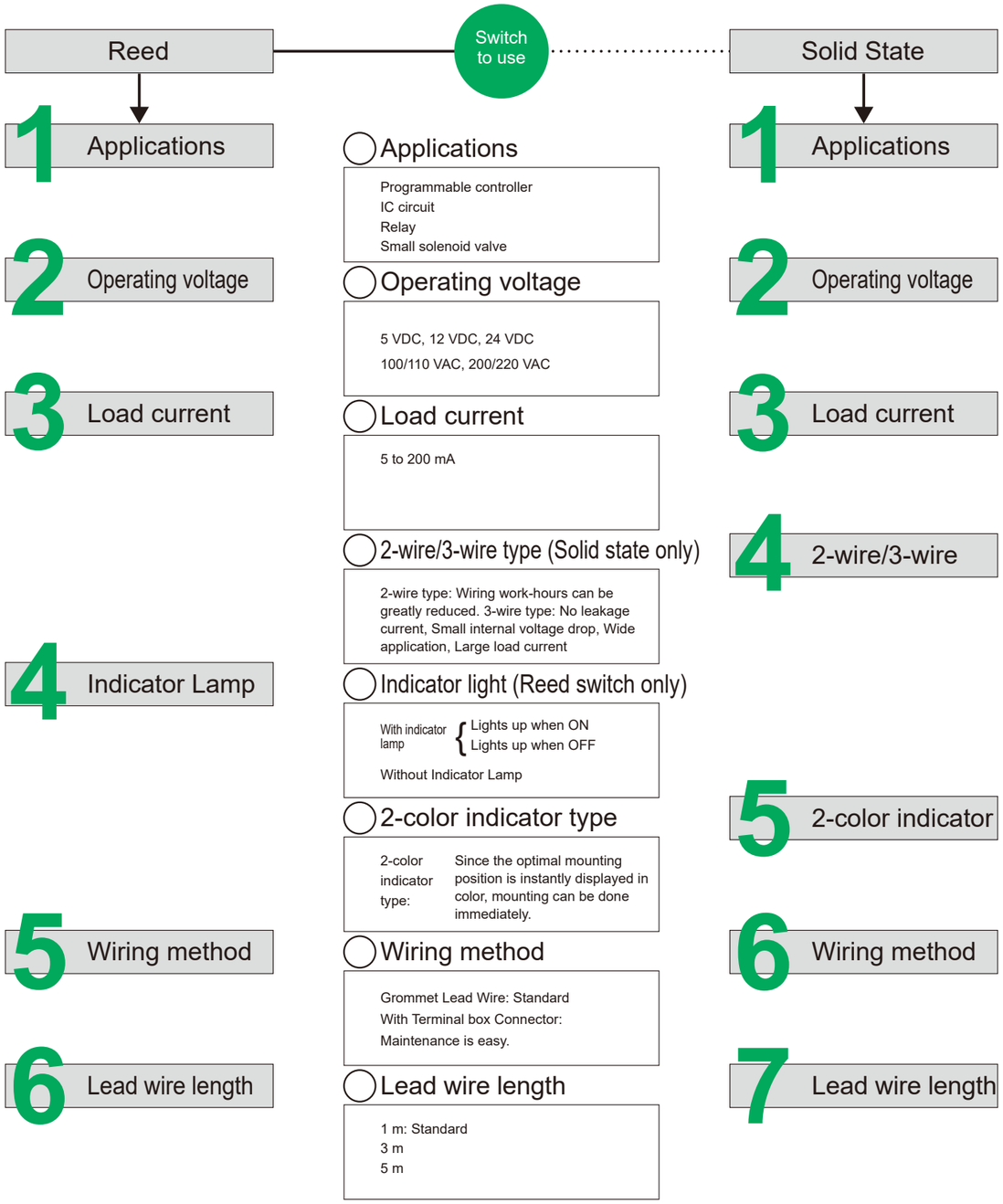
Operating range and hysteresis of each cylinder model with switch

Model No.	Bore Size (mm)	Solid state switch				Reed switch	
		Operating range		Hysteresis		Operating range	Hysteresis
		1-color type	2-color type	1-color type	2-color type		
Mechanical Power Cylinder	●Applicable switches: Solid state switches (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2WL□, T1□), Reed switches (T0□, T5□, T8□)						
MCP-S	2t	4 to 10	6 to 10	1.5 or less	1.0 or less	7 to 15	3 or less
	5t	4 to 10	8 to 10			9 to 15	
MCP-W (Fast feed part)	2t	3.5 to 6.0	4.6 to 9.2	1.5 or less	1.0 or less	7.6 to 12.8	3 or less
	5t	4.0 to 8	5.5 to 11.9			8.9 to 14.1	
Guideless Cylinder	●Applicable switches: Solid state switches (R1, R2, R3, R2Y, R3Y), Reed switches (R0, R4, R5, R6)						
GLC	ø40	7 to 17		1.5 or less		11.5 to 16.5	3.0 or less
	ø50	9 to 17				13 to 18	
	ø63	10 to 18				15 to 20	
	ø80	8 to 19				15 to 20	
	ø100	11 to 20.5				13.5 to 19	
Guideless Cylinder	●Applicable switches: Reed switch (H0)						
GLC-L2	ø40	-		-		4 to 9	3.0 or less
	ø50					4 to 9	
	ø63					4 to 10	
	ø80					5 to 11	
	ø100					5 to 11	
Selex Rotary	●Applicable switches: Solid state switches (T2□,T3□,T2W□,T3W□,T2WL□,T1□), Reed switches (T0□, T5□, T8□)						
RRC	8	15° to 60°	20° to 70°	-	-	70° to 90°	-
	32	10° to 30°	10° to 30°			30° to 40°	
	63	10° to 30°	10° to 30°			30° to 40°	
Table Type Rotary Actuator	●Applicable switches: Proximity switch (T2□,T3□,T2W□,T3W□,T2WL□,T1□)						
GRC	5	10° to 35°	30° to 40°	-	-	-	-
	10	5° to 30°	20° to 30°				
	20	10° to 35°	25° to 35°				
	30	5° to 25°	15° to 25°				
	50	5° to 25°	15° to 25°				
	80	5° to 25°	15° to 25°				
Compact Selex Rotary	●Applicable switches: Proximity switch (SR-□)						
RV3□	3	15° ±7°	-	3° or less	-	-	-
	10	15° ±7°	-				
	20	15° ±7°	-				
	30	15° ±7°	-				
Compact Selex Rotary	●Applicable switches: Proximity switch (FR-□)						
RV3□	3	23° ±7°	-	2° or less	-	-	-
	10	23° ±7°	-				
	20	23° ±7°	-				
	30	23° ±7°	-				
Large Selex Rotary	●Applicable switches: Applicable switches: Solid state switches (M2V,M3V,M3PV), Reed switches (M0V,M5V)						
RV3□	50	Approx. 40°	-		-	Approx. 25°	-
	150	Approx. 25°	-			Approx. 15°	
	300	Approx. 25°	-			Approx. 15°	
	800	Approx. 25°	-			Approx. 15°	

Selection method

When selecting a cylinder switch, first check whether it is a reed type or solid state type, and then select the appropriate switch according to the order of the selection chart below.

Cylinder switch selection chart



MEMO

Troubleshooting and countermeasures in case of failure [Cylinder switch] ①

Malfunction phenomenon	Cause	Factor	Countermeasure
Remains ON, remains outputting *Load · Programmable controller · Relay · Other	Load was short-circuited	Internal circuit damage of the switch	① Replace the cylinder switch and reselect one where the maximum rating of the cylinder switch matches the rating of the load
	Load current exceeding the catalog value was applied		
	Load voltage or power supply voltage exceeding the catalog value was applied		
	Wiring is incorrect	Malfunction due to incorrect wiring	① Correct the wiring
		Internal circuit damage due to incorrect wiring (AC, DC, polarity, etc.)	① Replace the cylinder switch and correct the wiring
	Wiring length is long (Refer to catalog page 924)	Internal circuit damage of the switch	① Replace the cylinder switch and wire the protection circuit (Refer to catalog pages 924, 926)
	Surge voltage is generated due to connection of inductive load (relay, solenoid valve)	Internal circuit damage of the switch	① Replace the cylinder switch and wire the protection circuit (Refer to catalog pages 924, 926)
	In solid state switches, there are noise sources such as servo motors or robots in the same facility	Noise is being applied	① Add a noise filter or replace with a reed switch
	Power lines and signal lines are wired together		② Separate power lines and signal lines
	Using the same power supply as the noise source		③ Separate power supplies
	The mounting position of the cylinder switch does not match the piston stop position	Position adjustment is incorrect	① Readjust the position
		Mounting position is misaligned due to loose screws	① Tighten within the specified tightening torque range
		Cylinder switch mounting direction is reversed	① Correct to the normal orientation
	Ambient temperature is -10°C or less	The magnetic force of the piston magnet built into the cylinder has become stronger	① Raise the ambient temperature to -10°C or higher
	Water, oil, etc. splashed on the cylinder switch	Water or oil infiltrated the cylinder switch, causing internal circuit destruction	① Replace the standard cylinder switch with a cutting oil resistant specification T□YL (T-type switch only) ② Replace the cylinder switch and install a shielding plate, etc. to prevent excessive splashing of water or oil
	Water or oil infiltrated the lead wire junction box; water or oil splashed on the load terminal part.	Malfunction due to infiltration of water/oil	① Install a shielding plate to prevent water or oil from splashing on the junction box, or place it inside a waterproof box
	There are objects that generate magnetic fields in the vicinity · Spot welder · Magnetizing equipment, etc.	Cylinder switch is reacting to external magnetic field	① Change to a strong magnetic field cylinder switch (Cylinder body also needs to be changed for strong magnetic field) ② Prevent magnetic field from being applied a Move the source of the magnetic field away b Install a shielding plate made of magnetic material between the source of the magnetic field ③ Apply magnetic shielding
	There are magnetic materials in the vicinity	There are iron bolts in the vicinity	① Replace with stainless steel bolts ② Move the cylinder switch to a mounting surface away from iron bolts
		There are magnetic materials around the cylinder switch	① Move the cylinder switch away from the magnetic material to the catalog recommended distance ② Move the cylinder switch to a mounting surface away from magnetic materials ③ Change the material of the magnetic body to a non-magnetic material such as stainless steel, aluminum, or copper
		Iron powder has accumulated around the cylinder switch	① Remove iron powder
	External force was applied to the cylinder switch	Internal circuit damage of the switch	① Replace the cylinder switch and prevent external force from being applied to the cylinder switch

Troubleshooting and countermeasures in case of failure [Cylinder switch] ②

Malfunction phenomenon	Cause	Factor	Countermeasure
Cylinder switch turns ON-OFF, but the load remains ON	The leakage current of the cylinder switch and the input specification of the load is Leakage current > OFF current. in someone's relationship	Load is reacting to leakage current	① Change the cylinder switch from □2 type to □0 type or □ type 3 ② Change to a load with a larger OFF current value ③ Wire a bleeder resistor
		Leakage current is increasing due to parallel connection (Refer to catalog page 925)	
Output turns ON-OFF normally, but the indicator light does not turn ON	Wiring polarity (plus, minus) is reversed (Only when using reed switch □0 with DC)	Malfunction due to incorrect wiring	① Correct to normal wiring

* Please select a programmable controller or relay that will not malfunction due to the leakage current from the solid-state switch.
* For the load's input specifications, please check the model No. and contact the respective manufacturer or CKD.

Troubleshooting and countermeasures in case of failure [Cylinder switch] ③

Malfunction phenomenon	Cause	Factor	Countermeasure
Cylinder switch does not turn ON Non-outputting load does not react *Load · Programmable controller · Relay · Other	Applied voltage is incorrect	Internal circuit damage of the switch	① Replace the cylinder switch and change to the regular voltage ② Replace with a cylinder switch of the regular voltage
	Load was short-circuited	Internal circuit damage of the switch	① Replace the cylinder switch and reselect one where the maximum rating of the cylinder switch matches the rating of the load
	Load current exceeding the catalog value was applied		
	Load voltage or power supply voltage exceeding the catalog value was applied		
	Wiring is incorrect	Switch is not operating due to incorrect wiring	① Correct the wiring
		Internal circuit damage due to incorrect wiring (AC, DC, polarity, etc.)	① Replace the cylinder switch and correct the wiring
	Excessive bending was applied to the lead wire	Lead wire breakage	① Replace the cylinder switch and ensure a sufficient bending radius (9 mm or more) for the lead wire to prevent excessive bending at one point ② Change the cylinder switch to T2□R with flexible cable specification (T-type switch only)
	Excessive pulling force was applied to the lead wire	Lead wire breakage	① Replace the cylinder switch and take measures to prevent excessive pulling force
	Wiring length is long (Refer to catalog page 924)	Internal circuit damage of the switch	① Replace the cylinder switch and wire the protection circuit (Refer to catalog pages 924, 926)
	Surge voltage is generated due to connection of inductive load (relay, valve)	Internal circuit damage of the switch	① Replace the cylinder switch and wire the protection circuit (Refer to catalog pages 924, 926)
	In solid state switches, there are noise sources such as servo motors or robots in the same facility	Noise is being applied	① Add a noise filter or replace with a reed switch
	Power lines and signal lines are wired together		② Separate power lines and signal lines
	Using the same power supply as the noise source		③ Separate power supplies
	The mounting position of the cylinder switch does not match the piston stop position	Position adjustment is incorrect	① Readjust the position
		Mounting position is misaligned due to loose screws	① Tighten within the specified tightening torque range
		Cylinder switch mounting direction is reversed	① Correct to the normal orientation
	Ambient temperature exceeds 60°C	The magnetic force of the piston magnet built into the cylinder has weakened	① Lower the ambient temperature to 60°C or less ② Replace with a heat-resistant cylinder switch (Limited models: Refer to catalog)
	Water, oil, etc. splashed on the cylinder switch	Water or oil infiltrated the cylinder switch, causing internal circuit destruction	① Replace the standard cylinder switch with a cutting oil resistant specification T□YL (T-type switch only) ② Replace the cylinder switch and install a shielding plate, etc. to prevent excessive splashing of water or oil
	Water or oil infiltrated the lead wire junction box; water or oil splashed on the load terminal part.	Internal circuit abnormality due to infiltration of water/oil	① Install a shielding plate to prevent water or oil from splashing on the junction box, or place it inside a waterproof box
	There are objects that generate magnetic fields in the vicinity · Spot welder · Magnetizing equipment, etc.	Cylinder switch does not react due to the influence of the surrounding magnetic field	① Change to a strong magnetic field cylinder switch (Cylinder body also needs to be changed for strong magnetic field) ② Prevent magnetic field from being applied a Move the source of the magnetic field away b Install a shielding plate made of magnetic material between the source of the magnetic field ③ Apply magnetic shielding
	There are magnetic materials in the vicinity	There are iron bolts in the vicinity	① Replace with stainless steel bolts ② Move the cylinder switch to a mounting surface away from iron bolts
		There are magnetic materials around the cylinder switch	① Move the cylinder switch away from the magnetic material to the catalog recommended distance ② Move the cylinder switch to a mounting surface away from magnetic materials ③ Change the material of the magnetic body to a non-magnetic material such as stainless steel, aluminum, or copper
		Iron powder has accumulated around the cylinder switch	① Remove iron powder
	External force was applied to the cylinder switch	Internal circuit damage of the switch	① Replace the cylinder switch and prevent external force from being applied to the cylinder switch

Troubleshooting and countermeasures in case of failure [Cylinder switch] ④

Malfunction phenomenon	Cause	Factor	Countermeasure
The cylinder switch indicator light turns ON, but the load does not operate	The relationship between the voltage drop of the cylinder SW and the input specification of the load is (Power supply voltage - Internal voltage drop) < Minimum operating voltage in someone's relationship	Load and cylinder switch do not match	① Replace the cylinder switch with a model with a smaller internal voltage drop value □2 type → □0 type → □3 type → □5 type ② Replace the load with one that has a smaller minimum operating voltage
		Generation of internal voltage drop due to series connection (Refer to catalog page 925)	
	In the case of 3-wire type, the input specifications (source input, sink input) of the programmable controller (PLC) do not match	Does not accept cylinder switch signal	① Source input --- Select NPN output □3 type (NPN output is standard type) ② Sink input --- Select PNP output □3P type (Only for T, K, M, F type switches) ③ Change the cylinder switch to a 2-wire type
	The output of the cylinder switch is used in the middle of the air cylinder stroke	Cylinder speed is fast and load does not react	① Change to T2J with OFF-delay specification (T-type switch only) ② Connect multiple cylinder switches in parallel to widen the operating range. ③ Connect a sensor controller, etc. between the cylinder SW and the load and change to a signal time suitable for the load performance Example: Omron S3D2 ④ Slow down the cylinder speed

To Use This Product Safely

Be sure to read this before use.

Individual Precautions: Cylinder Switch

During Design / Selection

⚠Warning

■Using outside the specified range of application, load current, voltage, temperature, impact, environment, etc. may cause damage or malfunction. Therefore, use correctly within the specified range.

■Never use in an explosive gas atmosphere. The cylinder switch does not have an explosion-proof structure. If used in an explosive gas atmosphere, it may cause an explosion disaster, so never use it.

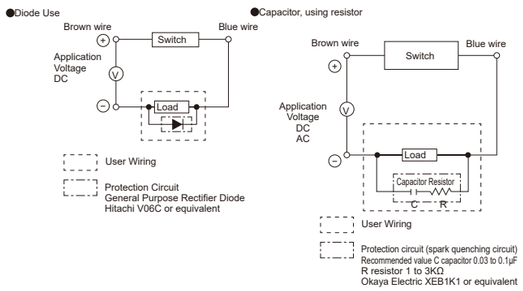
⚠Caution

■Please be careful when using in an interlock circuit.
When using a cylinder switch for an interlock signal that requires high reliability, please implement a double interlock system, such as providing a mechanical protection function in case of failure, or using another switch (sensor) in addition to the cylinder switch. Also, inspect regularly and confirm that it operates normally.

■Please pay attention to the contact capacity.
Do not use a load that exceeds the voltage and current of the switch specifications. This will cause a malfunction.

■Please pay attention to the contact protection circuit. (Reed switch)

● When connecting and using inductive loads (relays, solenoid valves, etc.), surge voltage will occur when the switch is OFF, so always install a contact protection circuit.



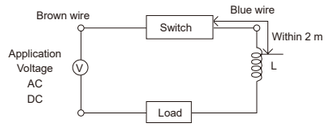
● When connecting and using capacitive loads (capacitors), inrush current will occur when the switch is ON, so always install a contact protection circuit.

● If the wiring becomes long, it becomes a wiring capacitance, and inrush current occurs, causing damage to the switch or reduction in lifespan. Therefore, if the wiring length exceeds Table 1, install a contact protection circuit. When T8 is used with 200 VAC, the usable wiring length will be shorter, so please consult us.

Table 1

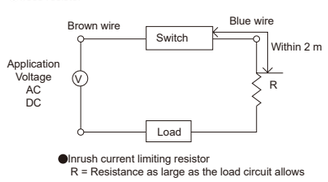
Switch	Voltage	Wiring length
M, T, K, H, V, F, ETO type	DC	50 m
M, T, K, H, V, ETO type	AC	10 m
RO, 5, 6, EO type	DC	100 m
RO, 5, EO type	AC	10 m
R4 type	AC	50 m

● Using choke coil



● Choke Coil
L = Several hundred μH to several mH
With excellent high-frequency characteristics

●Uses resistor



●Inrush current limiting resistor
R = Resistance as large as the load circuit allows

For specifications of the contact protection circuit, see P. 899.

■Avoid using in environments where water is constantly splashing.

● May cause malfunction due to insulation failure, etc.

■Avoid using in oily or chemical environments.

● Using in environments with various oils, coolants, cleaning solutions, or chemicals may adversely affect the cylinder switch (insulation failure, malfunction due to swelling of potting resin, hardening of lead wire coating, etc.), so please consult us.

● For cutting oil resistant cylinder switches, refer to the "Cutting Oil Resistant Pneumatic Equipment Guide" (No. CC-N-375), which is available separately.

■Do not use in environments with large impacts.
For reed switches, if a large impact (294 m/s² or more) is applied during use, there is a possibility of malfunction where the contact momentarily (1 ms or less) connects or disconnects. It may also be necessary to use a solid state switch depending on the operating environment, so please consult us.

■Do not use in locations where surge sources exist.
If there is equipment that generates large surges (electromagnetic lifters, high-frequency induction furnaces, motors, etc.) around the cylinder with a solid state switch, it may cause deterioration or damage to the switch internal circuit elements, so consider surge countermeasures at the source.

■Be careful about the accumulation of iron powder and close proximity to magnetic materials.
If a large amount of iron powder such as cutting chips or welding spatter accumulates around a cylinder with a cylinder switch, or if a magnetic material (something attracted to a magnet) is in close contact, the magnetic force within the cylinder may be lost, potentially causing the cylinder switch to stop operating. Please be careful.

■Pay attention to the proximity of cylinders, etc.

● When using two or more cylinders with switches in close proximity and parallel, use them at the allowable cylinder tube spacing indicated for each cylinder series. The switches may malfunction due to mutual magnetic interference.

■Pay attention to the magnetic environment.

● In environments with strong magnetic fields or large currents (large magnets, spot welding machines, etc.), use strong magnetic field resistant switches. (HO, HOY, T2YD)
If a magnetic body moves very close to the cylinder, they may interfere with each other and affect detection accuracy.

■At the stroke intermediate position, pay attention to the ON time of the cylinder switch.

● If the cylinder switch is set at the stroke intermediate position and the load is driven when the piston passes, if the speed is too high, the cylinder switch will operate, but the operating time will be short, and the load may not be able to respond completely, so please be careful. The maximum detectable piston speed is

$$V\ (mm/s) = \frac{\text{Cylinder Switch Operating Range (mm)}}{\text{Load Operating Time (s)}}$$

If the piston speed is high, please use an off-delay output type cylinder switch T2JH/V (limited to compatible models).

■Be careful with series connection methods.

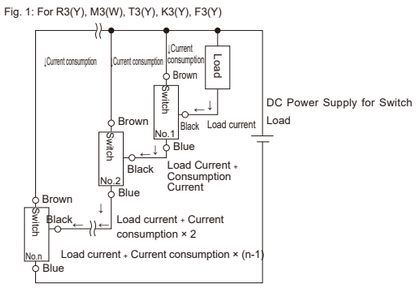
● When connecting multiple 2-wire switches in series, the voltage drop across the switches is the sum of the voltage drops of all connected switches. The voltage applied to the load side will be the power supply voltage minus the voltage drop across the switches. Check the load specifications before deciding on the number of units to connect.

● If 2-wire solid-state switches are connected in series, there is a possibility of malfunction, so please contact us. Use with reed switches is recommended.

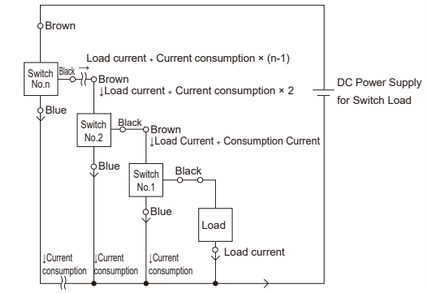
● When connecting multiple 3-wire solid-state switches in series, the voltage drop across the switches is the sum of the voltage drops of all connected switches, similar to the 2-wire type. Also, the current flowing through the switches will be the sum of the current consumption of the connected switches and the load current, as shown in the upper right diagram. Check the load specifications to ensure the maximum load current of the switch is not exceeded before deciding on the number of units to connect.

● The indicator lamp will only light up when all switches are ON.

Fig. 1: For R3(Y), M3(W), T3(Y), K3(Y), F3(Y)



For T3P, K3P, M3P



■Be careful with parallel connection methods.

● When connecting multiple 2-wire switches in parallel, the leakage current increases by the number of connected units. Therefore, confirm the load specifications and decide the number of connected units.

● For 2-wire solid-state switches, from the time one switch turns ON until it turns OFF, the voltage across the terminals of parallel-connected switches drops to the internal voltage drop value when the switch is ON, falling below the load voltage range, so other switches will not turn ON. Therefore, check the input specifications of the connected load, such as a programmable controller, before use.

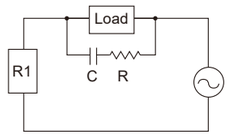
● For 3-wire solid-state switches, the leakage current is very small (10 μA or less), so there is no problem in normal use.

● The indicator lamp of the switch may become dim or not light up.

■Output Circuit Protection (Solid State Switch)

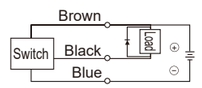
● When connecting and using an inductive load (relay, solenoid valve, etc.), a surge voltage will occur when the switch is turned OFF, so be sure to provide a protection circuit as shown in the diagram below.

R1



● Capacitor
C = 0.03 to 0.1 μF
● Resistor
R = 1 to 3 kΩ
Okaya Electric
XEB1K1 or equivalent

R3 (Y), M3 (W), T3 (Y), K3 (Y), F3 (Y)



● Diode
D = Hitachi
V06C or equivalent

Example of using a surge absorber with an inductive load.

● When connecting and using a capacitive load (capacitor), an inrush current will occur when the switch is turned ON, so be sure to provide a protection circuit as shown in the diagram below.

R3 (Y), M3 (W), T3 (Y), K3 (Y), F3 (Y)



Use a resistor R (Ω) with the following formula or more at this time.

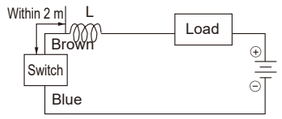
$\frac{V}{0.15}$ =R (Ω) (R3 (Y), M3 (W))

$\frac{V}{0.05}$ =R (Ω) (T3 (Y), K3 (Y), F3 (Y))

● If the lead wire length exceeds 10 m, be sure to provide a protection circuit as shown in the diagram below.

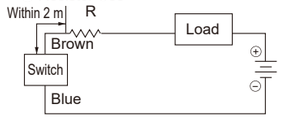
R1, R2 (Y), M2 (W), T2 (Y/J), K2 (Y), F2

● Choke Coil Use



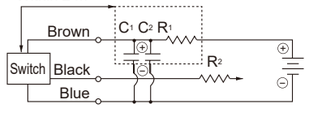
● Choke Coil
L = Several hundred μH to several mH
With excellent high-frequency characteristics

● Resistor Use



● Inrush Current Limiting Resistor
R = Resistance as large as the load circuit allows

● Resistor Use
Within 2 m



Power Supply Noise Absorption Circuit
C_1 = 20 to 50 μF
Electrolytic capacitor (withstand voltage 50 V or more)
C_2 = 0.01 to 0.1μF
Ceramic capacitor
Inrush Current Limiting Resistor
R_1 = 20 to 30Ω
R_2 = Use a resistor as large as the load side circuit allows.

■Pay attention to the lifespan of reed switches.

● The service life of a reed switch varies depending on operating conditions, but is typically several million cycles. If the equipment is used for continuous or high-frequency operation, the contact life will be reached quickly. In such cases, please use a solid state switch, which has no mechanical contacts.

■When special quality and reliability are required, such as when connecting to a customer-dedicated circuit board, a solid-state switch is recommended.

In addition, please be sure to thoroughly check the compatibility judgment by yourself.

During Use

⚠Caution

■Do not drop or strike.

When handling, do not drop, strike, or apply excessive impact (reed switch 294 m/s² or more, solid state switch 980 m/s² or more). Even if the switch case body is not damaged, the switch internals may be damaged, potentially leading to malfunction.

■Do not carry the cylinder by the switch's lead wire.

This can not only cause lead wire breakage but also apply stress to the inside of the switch, potentially damaging internal switch elements. Absolutely do not do this.

■Do not use the same wiring as power lines or high-voltage lines.

Avoid parallel wiring or using the same conduit as power lines/high-voltage lines; use separate wiring. Control circuits including cylinder switches may malfunction due to noise.

■Do not short-circuit the load.

If turned ON in a load short-circuited state, overcurrent will flow and the switch will be instantaneously damaged.

■Be careful when connecting lead wires.

Turn off the power to the equipment on the connected electrical circuit side before performing wiring work. Working with the power on can cause electric shock or accidents due to unexpected operation.

●Reed switch

Do not connect the switch lead wires directly to the power supply; always connect a load in series. Also, for RO, MO, TO, KO, EO, FO, ETO, pay attention to ① and ② below.

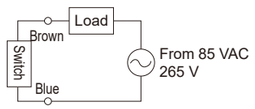
① When using for DC, connect so that the brown wire is the + side and the blue wire is the - side. If connected in reverse, the switch will operate, but the indicator light will not turn on. (HO has no polarity.)

② When connecting to AC relays or programmable controller inputs, if those circuits perform half-wave rectification, the indicator light may not turn on. In that case, reversing the polarity of the switch lead wire connection will turn on the indicator light.

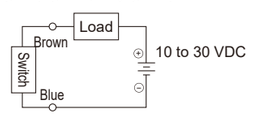
●Solid state switch

Connect correctly according to the lead wire color coding in the diagram on the right. Incorrect wiring may cause damage. Please be careful.

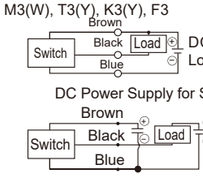
● R1



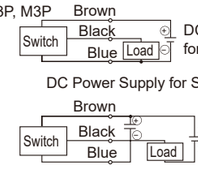
● R2(Y), M2(W), T2(Y), T2J, K2(Y), F2 (T2YD has no polarity)



● R3(Y), M3(W), T3(Y), K3(Y), F3



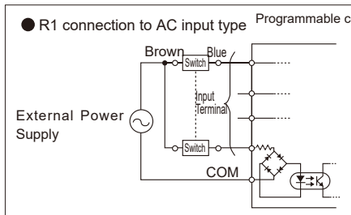
● T3P, K3P, M3P



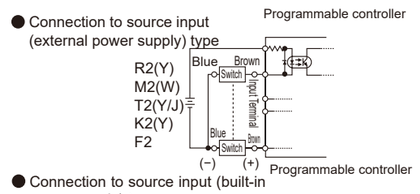
(Connection to Programmable Logic Controller (PLC))

●Connection method varies depending on the type of programmable controller. Connect according to the input specifications.

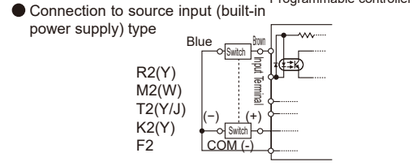
● R1 connection to AC input type



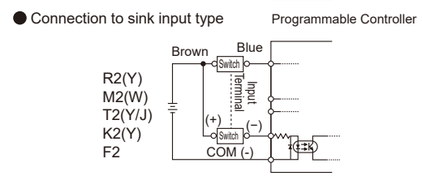
● Connection to source input (external power supply) type



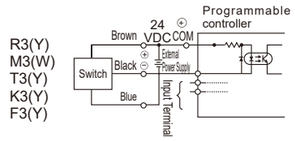
● Connection to source input (built-in power supply) type



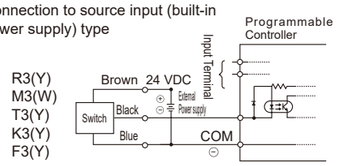
● Connection to sink input type



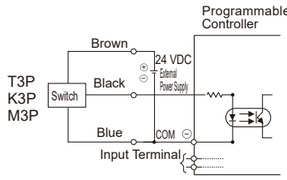
● Connection to source input (external power supply) type



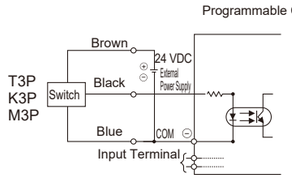
●Connection to source input (built-in power supply) type



●Example of connection to sink input (external power supply) type



●Example of connection to sink input (built-in power supply) type



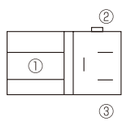
■Set the switch to the center of its operating range.

Adjust the mounting position of the cylinder switch so that the piston stops at the center of the operating range (the range where it is ON). (The mounting position described in the catalog indicates the optimal position at the stroke end.) If set to the end of the operating range (near the ON/OFF boundary line), operation may become unstable.

■Install the switch while adhering to the tightening torque.

If tightened beyond the maximum tightening torque, the set screw, mounting bracket, switch, etc., may be damaged.
Also, if tightened below the minimum tightening torque, the switch mounting position may shift.
(For switch mounting method, moving method, tightening torque, etc., refer to P. 930-932.)

■Pay attention to wiring for terminal box types.



Model \ Terminal	①	②	③
R0 (DC), R2, R2Y, R6		+	−
R0 (AC), R1, R4, R5		±	±
R3, R3Y	OUT	+	−

■Lead wire protection

The minimum bending radius of the lead wire should be 9 mm or more (when fixed). Ensure that repeated bending stress and tensile force are not applied to the lead wire during wiring. For moving parts, please connect and use T2H/VR3 cylinder switch with flex-resistant lead wire specification for higher flexibility (limited to compatible models).

■Relay

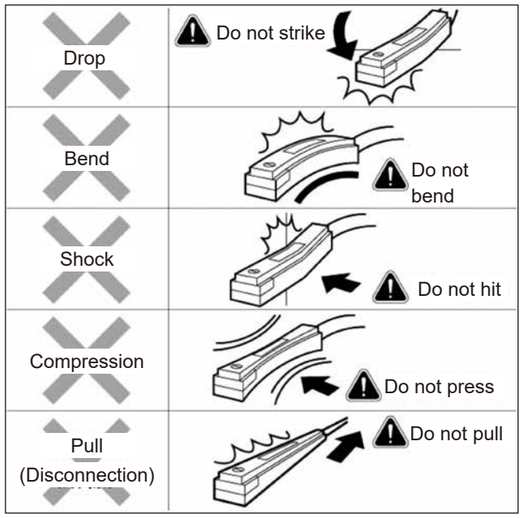
Use the following equivalent relays.

○Omron.....MY type
○Fuji Electric.....HH5 type
○Tokyo Denki.....MPM type
○Panasonic.....HC type

1. Notes on "External Force"

⚠Caution

■Especially for reed switch types, the reed switch (glass tube) may be damaged or its sensitivity may decrease.
Example: T0□ T5□ T8□ type

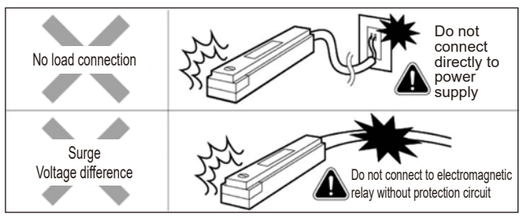


2. Notes on "Overcurrent/Overvoltage"

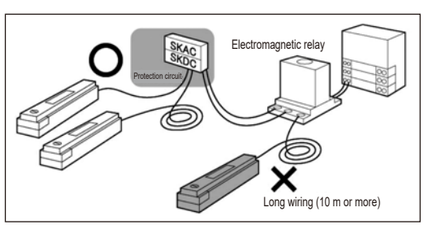
⚠Caution

■Do not connect directly to the power supply.

■Do not connect to an electromagnetic relay without a protection circuit.



■For electromagnetic relays and long wiring, install a "protection circuit."



During Use

⚠Warning

■Do not flow overcurrent.

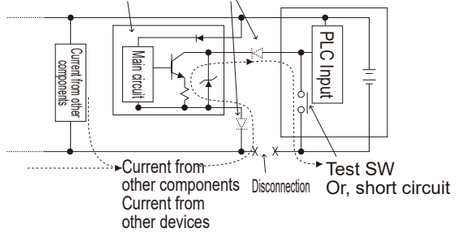
If overcurrent flows through the cylinder switch due to a load short circuit, etc., not only will the cylinder switch be damaged, but there is also a risk of fire. If necessary, install an overcurrent protection circuit such as a fuse on the output and power lines.

⚠Caution

■Be careful about reverse current due to wire breakage or wiring resistance.

● If other devices, including cylinder switches, are connected to the same power supply as the cylinder switch, shorting the output wire and the negative power supply wire, or if the negative power supply wire is disconnected, reverse current may flow into the cylinder switch's output circuit, causing damage. This is done to confirm the operation of the control panel's input device.

Cylinder switch Reverse current prevention diode Control panel



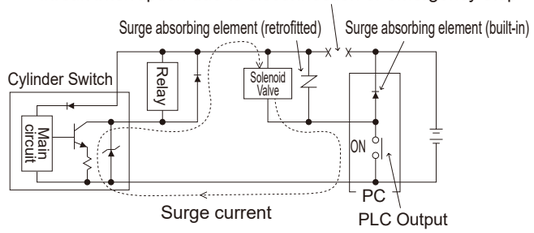
●To prevent damage due to reverse current, take the following measures.

① Avoid concentrating current on the power lines, especially the - side power line, and make the wiring as thick as possible.
② Limit the equipment connected to the same power supply as the cylinder switch.
③ Insert a diode in series with the cylinder switch output line to prevent reverse current flow.
④ Insert a diode in series on the negative side of the cylinder switch's power wire to prevent reverse current.

■Be careful about surge current bypass.

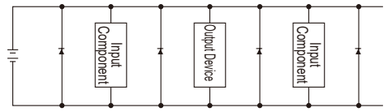
● If the power supply for inductive loads that generate surges, such as cylinder switches and solenoid valves/ relays, is shared, and the circuit is interrupted while the inductive load is operating, surge current may flow into the output circuit and cause damage, depending on the mounting position of the surge absorption element.

Circuit interruption due to disconnection or emergency stop



● To prevent damage from surge current bypass, take the following measures.

① Separate the power supplies for the output system with inductive loads such as solenoid valves and relays, and the input system such as cylinder switches.
② If separate power supplies cannot be used, directly install surge absorbing elements for all inductive loads. Consider surge absorbing elements connected to PLCs, etc., as protecting only that equipment.
③ Furthermore, connect surge absorbing elements at various points in the power supply wiring as shown in the diagram below to prepare for disconnection at unspecified locations.



Furthermore, if equipment is connected with connectors, disconnecting the connector while power is on may cause the output circuit to be damaged due to the above phenomenon. Always turn off the power before connecting or disconnecting connectors.

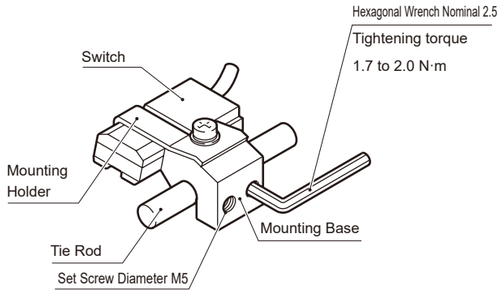
Cylinder Switch

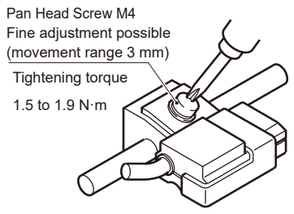
⚠Caution: Switch Mounting Method

Tie Rod Mount Type

Loosening the set screws (2 screws) for fixing the mounting base by 1/2 to 3/4 turn allows axial movement without detachment. For fixing after adjustment, lightly press the holder so that the switch is fixed to the tube, and then tighten the set screws. Tightening torque is 1.7 to 2.0 N·m. As a guide, it is sufficient if the hex wrench begins to deflect.

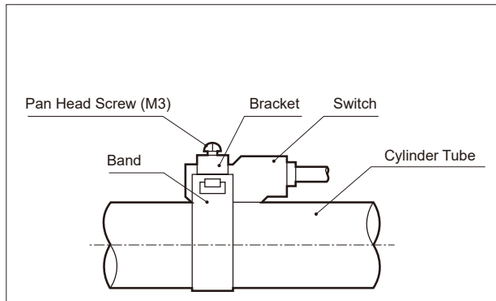
●Movement and tightening diagram





Band Mount Type

Loosen the tightening screw (pan head screw), move the switch body and band along the cylinder tube, and tighten at the specified position. For fine adjustment, fix the band position and move only the switch body. Tightening torque is 0.5 to 0.7 N·m. The tightening torque for HCA ø80, ø100 is 1.0 to 1.5 N·m.

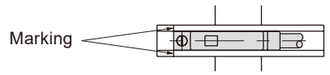


Band Mount Type

① When moving the switch position in the stroke direction

●The 1-color indicator switch can be finely adjusted by about ±3 mm from the mounting position at the time of shipment. If the adjustment range exceeds ±3 mm, or when finely adjusting the position of the 2-color indicator switch, move the band position.

●The switch rail has a marking 4 mm from the end face of the rail. Use this as a guide for the mounting position when replacing the switch. The marking on the switch rail is set to the switch's highest sensitivity position at the time of factory shipment. If the type of switch changes or if the band is moved, the maximum sensitivity position will change, so adjust the position each time.

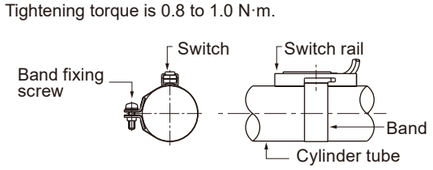


② When moving the switch position in the circumferential direction

●Loosen the band fixing screw, move the switch rail circumferentially, and tighten it at the specified position. Tightening torque is 0.8 to 1.0 N·m.

③ When moving the band position

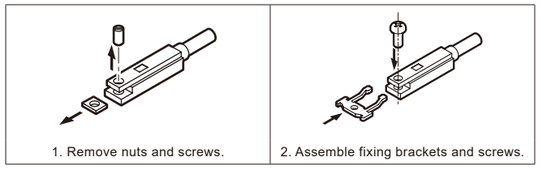
●Loosen the band fixing screw, move the switch rail and band along the cylinder tube, and tighten them at the specified position. Tightening torque is 0.8 to 1.0 N·m.



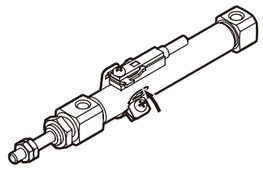
Band Mount Type

Install T-type switches as shown in the diagram below.

When using standard T-type switch (SW-T☐)



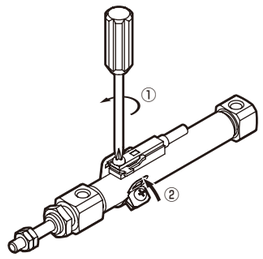
① Insert the square hole of the band into the fixing bracket and attach it to the cylinder.



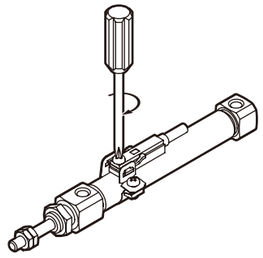
●If it is difficult to install, follow the steps below.

① Loosen the screw on the switch side.

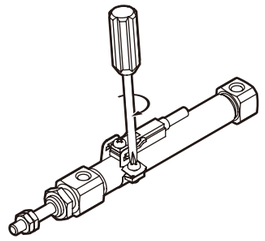
② Insert the square hole of the band into the fixing bracket.



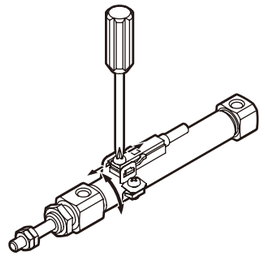
② Tighten the screw on the switch side.
Tightening torque: 0.1 to 0.15 N·m



③ Tighten the screw on the band side.
Tightening torque: 0.1 to 0.15 N·m



④ For switch mounting position adjustment
Loosen the screw on the switch side, adjust the position, and tighten the screw to fix it at the optimal position.
Tightening torque: 0.1 to 0.15 N·m



Switch Groove Mount Type

Loosen the tightening screw (set screw), move the switch body along the switch groove, and tighten at the specified position. For T2, T2W, T3, T3W, T0, T5, K2, K3, K0, K5, use a flat-blade screwdriver (watchmaker's screwdriver, precision screwdriver, etc.) with a grip diameter of 5 to 6 mm, tip width of 2.4 mm or less, and thickness of 0.3 mm or less to tighten the switch fixing screw with a tightening torque of 0.1 to 0.2 N·m. For T☐C, T2J, T2Y, T3Y, K2Y, K3Y, T2YD, T1, T8, T2YL, T3YL, ET0, tighten with a torque of 0.5 to 0.7 N·m. For F2☐, F3☐, F2Y☐, F3Y☐, tighten with a torque of 0.03 to 0.08 N·m.

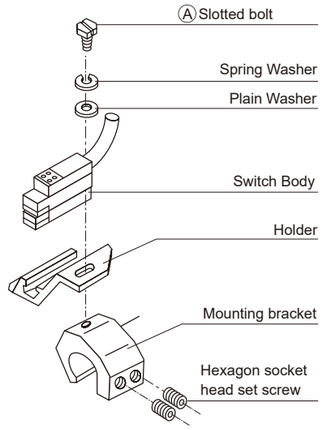
T2YD Tie Rod Mount Type

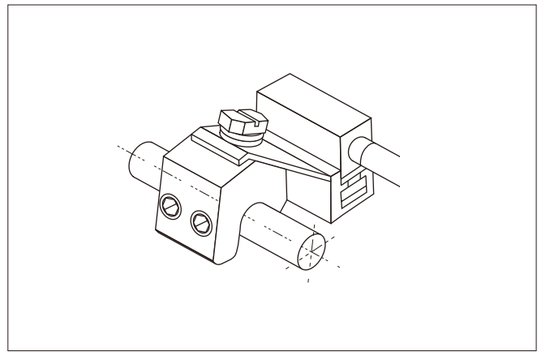
① Fine adjustment

Loosen the slotted hex bolt (A), move only the switch body, and tighten it at the specified position. Tightening torque is 0.5 to 0.7 N·m.

② Coarse adjustment

Loosen all slotted bolts (A) and set screws, move the entire mounting bracket to the specified position, and then tighten the slotted bolt (A). Tightening torque is 0.5 to 0.7 N·m. Then tighten the set screws. Tightening torque is 1.7 to 2.0 N·m.





⚠ Caution

Contact protection circuit (SKAC, SKDC)

If you are using a reed switch and the circuit configuration with the load falls under the following, the contact life may be reduced (may remain ON). Connect a contact protection circuit within 2 m of the switch.

●When the operating load is an inductive load (relays, valves, etc. (coil-driven loads)) or a capacitive load (programmable controllers, etc. (loads containing capacitors))

●When the lead wire wiring length is as follows

12 VDC : 100 m or more
24 VDC : 50 m or more
100 VAC : 20 m or more
200 VAC : 10 m or more

●When there are other factors that cause overvoltage or overcurrent

For details on the contact protection circuit, refer to P. 899.

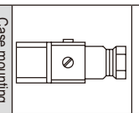
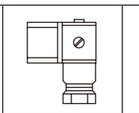
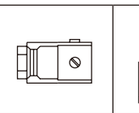
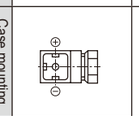
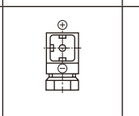
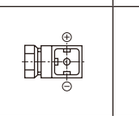
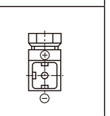
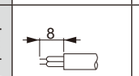
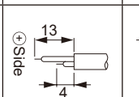
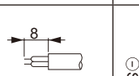
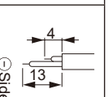
Mounting method to R□B terminal box

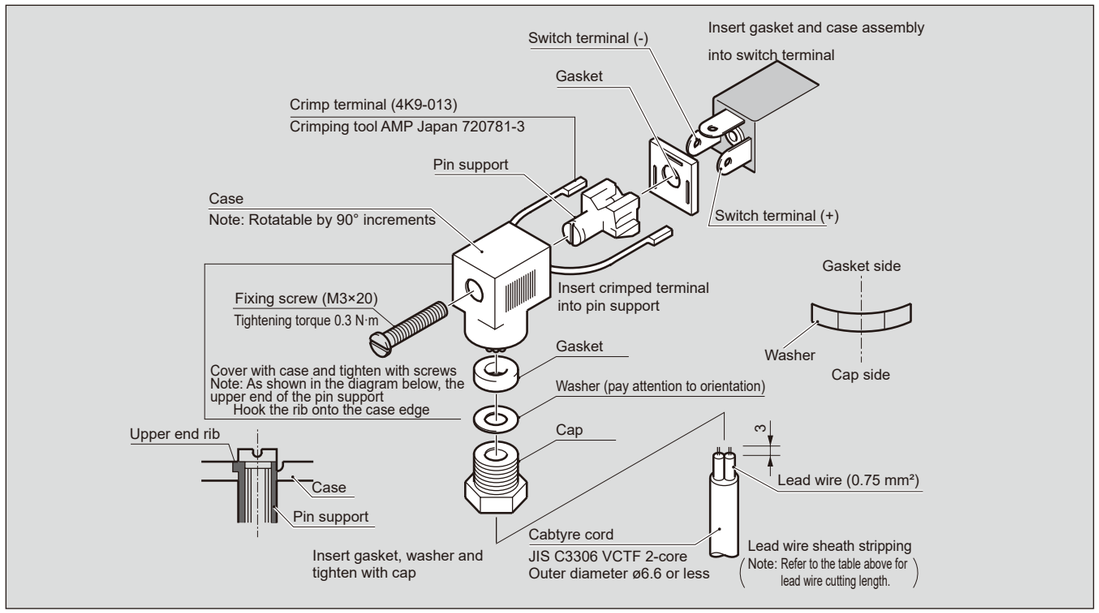
Connection to the R*B terminal box should be done according to the following procedure, referring to the diagram below.

① After completely removing the fixing screws, pull the terminal box out from the switch.
② From the top of the case, push out the pin support to separate the case and pin support.
③ Remove the cap, and take out the washer and gasket.
④ Determine the lead wire exit direction of the terminal box.
⑤ Referring to the top view of the case mounting direction, cut the lead wire to match the exit direction, and strip the seal/sheath.
⑥ Crimp the included terminal.
⑦ Pass the lead wire through the cap, washer, gasket, and case in that order, paying attention to the orientation. Pass the lead wire through the case and pull it out with needle-nose pliers.
⑧ While inserting the terminal into the pin support, push it into the case, paying attention to the orientation. Push until the upper end rib of the pin support comes out to the top surface of the case.
⑨ Insert the fixing screws into the case/pin support.
⑩ Insert the gasket and washer into the case and tighten with the cap.
⑪ Insert the case into the switch terminal and fix it with the fixing screws.

●Lead wire cutting length

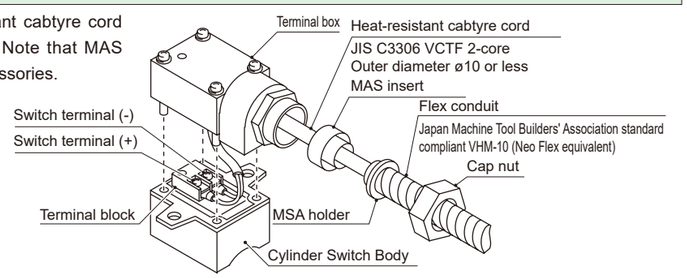
The lead wire cutting length varies depending on the case mounting direction. Please refer to the table below.
For 3-wire type, please consult us.

Case mounting direction Top View				
Case mounting direction Bottom View				
Lead wire length				



Mounting method to E0 terminal box

For wiring to the terminal box, prepare heat-resistant cabtyre cord and flex conduit, and refer to the diagram below. Note that MAS insert, MAS holder, and cap nut are included as accessories.



For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual

Clevis dimension list

Page

Single Knuckle Dimension List (by Model Type) Ending 2

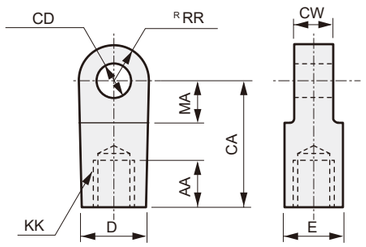
Single Knuckle Dimension List (by Thread Diameter) Ending 4

Double Knuckle Dimension List (by Model Type) Ending 6

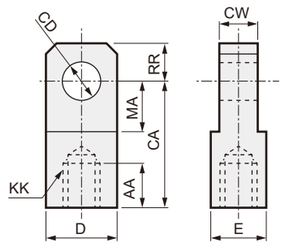
Double Knuckle Dimension List (by Thread Diameter) Ending 8

Single Knuckle

Pad Shape Code: A



Pad Shape Code: B



Model	Shape Code	Model No.	Applicable bore size (ø)	AA	CA	CD	CW	D	E	KK	MA	RR
CMK2	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	25, 32	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12
CMA2	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	30	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12
CKV2	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	25, 32	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12
CAV2 COV2	A	CAV2-50-I	50	25	50	14 H10	20 0 -0.3	26	26	M16 × 1.5	20	15
		CAV2-75-I	75.100	30	65	20 H10	28 0 -0.3	38	35	M22 × 1.5	28	22.5
HCA	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	25, 32	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
	A	S1-I-40	40	20	50	12 H10	18 -0.1 -0.4	(27)	27	M14 × 1.5	21	16
		S1-I-50	50	21	50	12 H10	18 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-63	63	21	50	14 H10	20 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-80	80	30	70	20 H10	28 -0.1 -0.4	(46)	41	M22 × 1.5	30	25
		S1-I-100	100	30	70	20 H10	28 -0.1 -0.4	(46)	41	M26 × 1.5	30	25
JSG	B	SCG-I-40	40	19	40	10 H10	14 -0.1 -0.3	ø22	ø22	M14 × 1.5	19	10
		SCG-I-50	50, 63	24	50	14 H10	20 -0.1 -0.3	ø28	ø28	M18 × 1.5	24	14
		SCG-I-80	80	26	60	22 H10	30 -0.1 -0.3	ø40	ø40	M22 × 1.5	34	20
		SCG-I-100	100	26	60	22 H10	30 -0.1 -0.3	ø40	ø40	M26 × 1.5	34	20
JSM2	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	30	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12
JSK2	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	25, 32	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12
JSC3	A	S1-I-40	40	20	50	12 H10	18 -0.1 -0.4	(27)	27	M14 × 1.5	21	16
		S1-I-50	50	21	50	12 H10	18 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-63	63	21	50	14 H10	20 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-80	80	30	70	20 H10	28 -0.1 -0.4	(46)	41	M22 × 1.5	30	25
		S1-I-100	100	30	70	20 H10	28 -0.1 -0.4	(46)	41	M26 × 1.5	30	25
JSC4	B	SCS2-125-I	125	50	85	25 H10	32 -0.1 -0.4	ø55	ø55	M30 × 1.5	32	27.5
		SCS2-140-I	140	50	90	28 H10	36 -0.1 -0.4	ø60	ø60	M30 × 1.5	35	30
		SCS2-160-I	160	60	105	32 H10	40 -0.1 -0.4	ø70	ø70	M36 × 1.5	40	35
		SCS2-180-I	180	65	115	40 H10	50 -0.1 -0.4	ø85	ø85	M40 × 1.5	47.5	42.5
SCP□3	B	P2-I-10	10	8	21	3.2 H10	3.1 0 -0.1	12	12	M4	9	7
		P2-I-16	16	8	25	5 H10	6.4 0 -0.1	12	12	M5	14	7

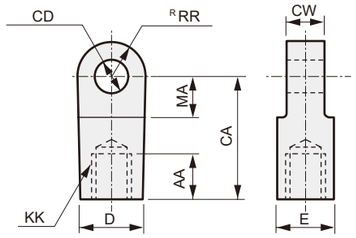
Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

Single Knuckle

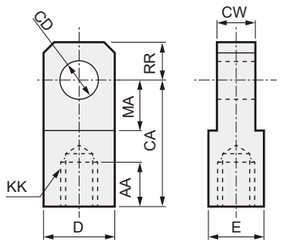
Model	Shape Code	Model No.	Applicable bore size (ø)	AA	CA	CD	CW	D	E	KK	MA	RR
SCA2	A	S1-I-40	40	20	50	12 H10	18 -0.1 -0.4	(27)	27	M14 × 1.5	21	16
		S1-I-50	50	21	50	12 H10	18 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-63	63	21	50	14 H10	20 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		S1-I-80	80	30	70	20 H10	28 -0.1 -0.4	(46)	41	M22 × 1.5	30	25
		S1-I-100	100	30	70	20 H10	28 -0.1 -0.4	(46)	41	M26 × 1.5	30	25
SCG	B	SCG-I-32	32	14	30	10 H10	14 -0.1 -0.3	ø20	ø20	M10 × 1.25	16	10
		SCG-I-40	40	19	40	10 H10	14 -0.1 -0.3	ø22	ø22	M14 × 1.5	19	10
		SCG-I-50	50, 63	24	50	14 H10	20 -0.1 -0.3	ø28	ø28	M18 × 1.5	24	14
		SCG-I-80	80	26	60	22 H10	30 -0.1 -0.3	ø40	ø40	M22 × 1.5	34	20
		SCG-I-100	100	26	60	22 H10	30 -0.1 -0.3	ø40	ø40	M26 × 1.5	34	20
SCS2	B	SCS2-125-I	125	50	85	25 H10	32 -0.1 -0.4	ø55	ø55	M30 × 1.5	32	27.5
		SCS2-140-I	140	50	90	28 H10	36 -0.1 -0.4	ø60	ø60	M30 × 1.5	35	30
		SCS2-160-I	160	60	105	32 H10	40 -0.1 -0.4	ø70	ø70	M36 × 1.5	40	35
		SCS2-180-I	180	65	115	40 H10	50 -0.1 -0.4	ø85	ø85	M40 × 1.5	47.5	42.5
		SCS2-200-I	200	75	125	40 H10	50 -0.1 -0.4	ø85	ø85	M45 × 1.5	47.5	42.5
		SCS2-250-I	250	88	150	50 H10	63 -0.1 -0.4	ø105	ø105	M56 × 2	57.5	52.5
SCM	B	SCM-I-20	20	8.5	25	8 H10	8 -0.2 -0.4	16	16	M8	11.5	9
		SCM-I-25	25, 32	10.5	30	10 H10	10 -0.2 -0.4	20	20	M10 × 1.25	14	11
	A	SCM-I-40	40	14	30	10 H10	18 -0.3 -0.5	22	22	M14 × 1.5	14	12
		SCM-I-50	50, 63	18	40	14 H10	22 -0.3 -0.5	28	28	M18 × 1.5	20	16
		SCM-I-80	80	21	50	18 H10	28 -0.3 -0.5	38	38	M22 × 1.5	27	21
		SCM-I-100	100	21	55	22 H10	32 -0.3 -0.5	44	44	M26 × 1.5	31	24
SSD2	B	SSD2-I-12	12	6	16	5 H10	5 -0.2 -0.4	10	10	M5 × 0.8	7	5.5
		SSD2-I-16	16	8	25	5 H10	6.5 -0.2 -0.4	12	12	M6×1	14	7
		SSD2-I-20	20	8.5	25	8 H10	8 -0.2 -0.4	16	16	M8 × 1.25	11.5	9
		SSD2-I-25	25	10.5	30	10 H10	10 -0.2 -0.4	20	20	M10 × 1.25	14	11
	A	SSD2-I-32	32, 40	14	30	10 H10	18 -0.3 -0.5	ø22	ø22	M14 × 1.5	14	12
		SSD2-I-50	50, 63	18	40	14 H10	22 -0.3 -0.5	ø28	ø28	M18 × 1.5	20	16
		SSD2-I-80	80	21	50	18 H10	28 -0.3 -0.5	ø38	ø38	M22 × 1.5	27	21
		SSD2-I-100	100	21	55	22 H10	32 -0.3 -0.5	ø44	ø44	M26 × 1.5	31	24
SSD	B	P2-I-16	12	8	25	5 H10	6.4 0 -0.1	12	12	M5	14	10
	A	SSD-I-16	16	8	25	5 H10	6.5 -0.1 -0.2	12	12	M6	14	10
	B	SSD-I-20	20	13.5	30	10 H10	8 -0.1 -0.2	19	19	M8	13	10
		M1-I-30	25	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		SSD-I-32	32	15	36	12 H10	10 -0.1 -0.2	25	19	M14	16	12
	A	SSD-I-40	40	20	50	12 H10	18 -0.1 -0.4	27	27	M14 × 1.5	21	16
		SSD-I-50	50	21	50	12 H10	18 -0.1 -0.4	27	27	M18 × 1.5	21	16
		SSD-I-63	63	21	50	14 H10	20 -0.1 -0.4	(27)	27	M18 × 1.5	21	16
		SSD-I-80	80	30	70	20 H10	28 -0.1 -0.4	46	41	M22 × 1.5	30	25
		SSD-I-100	100	30	70	20 H10	28 -0.1 -0.4	46	41	M26 × 1.5	30	25
	B	SCS-125-I	125, 140	50	85	25 H10	32 -0.1 -0.4	55	55	M30 × 1.5	32	27.5
		SCS-160-I	160	60	105	32 H10	40 -0.1 -0.4	70	70	M36 × 1.5	40	35
ULK	B	M1-I-20	20	14	30	10 H10	8 -0.1 -0.2	19	19	M8 × 1.0	13	10
		M1-I-30	25, 32	14	36	12 H10	10 -0.1 -0.2	25	19	M10 × 1.25	16	12
		M1-I-40	40	14	36	12 H10	10 -0.1 -0.2	25	19	M12 × 1.5	16	12

Single Knuckle (by thread size)

Pad Shape Code: A



Pad Shape Code: B



Thread size KK	Model No.	Pad Shape Code	Applicable Model	Applicable bore size (ø)	AA	CA	CD	CW	D	E	MA	RR
M4	P2-I-10	B	SCP□3	10	8	21	3.2 ^{H10}	3.1 $^{0}_{-0.1}$	12	12	9	7
M5	P2-I-16	B	SCP□3	16	8	25	5 ^{H10}	6.4 $^{0}_{-0.1}$	12	12	14	7
			SSD	12								
	SSD2-I-12	B	SSD2	12	6	16	5 ^{H10}	5 $^{-0.2}_{-0.4}$	10	10	7	5.5
M6	SSD-I-16	A	SSD	16	8	25	5 ^{H10}	6.5 $^{-0.1}_{-0.2}$	12	12	14	10
	SSD2-I-16	B	SSD2	16	8	25	5 ^{H10}	6.5 $^{-0.2}_{-0.4}$	12	12	14	7
M8 × 1.0	M1-I-20	B	CKV2, CMA2, CMK2 HCA, JSK2, JSM2 ULK	20	14	30	10 ^{H10}	8 $^{-0.1}_{-0.2}$	19	19	13	10
M8	SCM-I-20	B	SCM	20	8.5	25	8 ^{H10}	8 $^{-0.2}_{-0.4}$	16	16	11.5	9
	SSD-I-20	B	SSD	20	13.5	30	10 ^{H10}	8 $^{-0.1}_{-0.2}$	19	19	13	10
	SSD2-I-20	B	SSD2	20	8.5	25	8 ^{H10}	8 $^{-0.2}_{-0.4}$	16	16	11.5	9
M10 × 1.25	SCG-I-32	B	SCG	32	14	30	10 ^{H10}	14 $^{-0.1}_{-0.3}$	ø20	ø20	16	10
	M1-I-30	B	CMA2, CMK2, HCA JSK2, JSM2, ULK, SSD	25, 30, 32	14	36	12 ^{H10}	10 $^{-0.1}_{-0.2}$	25	19	16	12
	SCM-I-25	B	SCM	25, 32	10.5	30	10 ^{H10}	10 $^{-0.2}_{-0.4}$	20	20	14	11
	SSD2-I-25	B	SSD2	25	10.5	30	10 ^{H10}	10 $^{-0.2}_{-0.4}$	20	20	14	11
M12 × 1.5	M1-I-40	B	CKV2, CMA2, CMK2 JSK2, JSM2, ULK	40	14	36	12 ^{H10}	10 $^{-0.1}_{-0.2}$	25	19	16	12
M14 × 1.5	SCG-I-40	B	SCG, JSG	40	19	40	10 ^{H10}	14 $^{-0.1}_{-0.3}$	ø22	ø22	19	10
	SSD2-I-32	A	SSD2	32, 40	14	30	10 ^{H10}	18 $^{-0.3}_{-0.5}$	ø22	ø22	14	12
	S1-I-40	A	HCA, JSC3 SCA2, SSD	40	20	50	12 ^{H10}	18 $^{-0.1}_{-0.4}$	(27)	27	21	16
	SCM-I-40	A	SCM	40	14	30	10 ^{H10}	18 $^{-0.3}_{-0.5}$	22	22	14	12
M14	SSD-I-32	B	SSD	32	15	36	12	10 $^{-0.1}_{-0.2}$	25	19	16	12
M16 × 1.5	CAV2-50-I	A	CAV2, COV2	50	25	50	14 ^{H10}	20 $^{0}_{-0.3}$	26	26	20	15
M18 × 1.5	SCG-I-50	B	SCG, JSG	50, 63	24	50	14 ^{H10}	20 $^{-0.1}_{-0.3}$	ø28	ø28	24	14
	SSD2-I-50	A	SSD2	50, 63	18	40	14 ^{H10}	22 $^{-0.3}_{-0.5}$	ø28	ø28	20	16
	S1-I-50	A	HCA, JSC3, SCA2	50	21	50	12 ^{H10}	18 $^{-0.1}_{-0.4}$	(27)	27	21	16
	SSD-I-50		SSD									
	S1-I-63	A	HCA, JSC3, SCA2	63	21	50	14 ^{H10}	20 $^{-0.1}_{-0.4}$	(27)	27	21	16
	SSD-I-63		SSD									
	SCM-I-50	A	SCM	50, 63	18	40	14 ^{H10}	22 $^{-0.3}_{-0.5}$	28	28	20	16
M22 × 1.5	SCG-I-80	B	SCG, JSG	80	26	60	22 ^{H10}	30 $^{-0.1}_{-0.3}$	ø40	ø40	34	20
	CAV2-75-I	A	CAV2, COV2	75.100	30	65	20 ^{H10}	28 $^{0}_{-0.3}$	38	35	28	22.5
	S1-I-80	A	HCA, JSC3, SCA2	80	30	70	20 ^{H10}	28 $^{-0.1}_{-0.4}$	(46)	41	30	25
	SSD-I-80		SSD									
	SCM-I-80	A	SCM	80	21	50	18 ^{H10}	28 $^{-0.3}_{-0.5}$	38	38	27	21
	SSD2-I-80	A	SSD2	80	21	50	18 ^{H10}	28 $^{-0.3}_{-0.5}$	ø38	ø38	27	21
M26 × 1.5	SCG-I-100	B	SCG, JSG	100	26	60	22 ^{H10}	30 $^{-0.1}_{-0.3}$	ø40	ø40	34	20
	S1-I-100	A	HCA, JSC3, SCA2	100	30	70	20 ^{H10}	28 $^{-0.1}_{-0.4}$	(46)	41	30	25
	SSD-I-100		SSD									
	SCM-I-100	A	SCM	100	21	55	22 ^{H10}	32 $^{-0.3}_{-0.5}$	44	44	31	24

Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

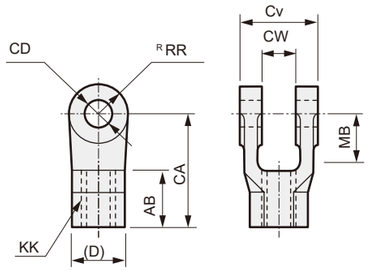
Single Knuckle (by thread size)

Thread size KK	Model No.	Pad Shape Code	Applicable Model	Applicable bore size (ø)	AA	CA	CD	CW	D	E	MA	RR
M26 × 1.5	SSD2-I-100	A	SSD2	100	21	55	22 ^{H10}	32 $^{-0.3}_{-0.5}$	ø44	ø44	31	24
M30 × 1.5	SCS2-125-I	B	JSC4, SCS2	125	50	85	25 ^{H10}	32 $^{-0.1}_{-0.4}$	ø55	ø55	32	27.5
			SSD	125, 140								
	SCS2-140-I	B	JSC4, SCS2	140	50	90	28 ^{H10}	36 $^{-0.1}_{-0.4}$	ø60	ø60	35	30
M36 × 1.5	SCS2-160-I	B	JSC4, SCS2, SSD	160	60	105	32 ^{H10}	40 $^{-0.1}_{-0.4}$	ø70	ø70	40	35
M40 × 1.5	SCS2-180-I	B	JSC4, SCS2	180	65	115	40 ^{H10}	50 $^{-0.1}_{-0.4}$	ø85	ø85	47.5	42.5
M45 × 1.5	SCS2-200-I	B	SCS2	200	75	125	40 ^{H10}	50 $^{-0.1}_{-0.4}$	ø85	ø85	47.5	42.5
M56 × 2	SCS2-250-I	B	SCS2	250	88	150	50 ^{H10}	63 $^{-0.1}_{-0.4}$	ø105	ø105	57.5	52.5

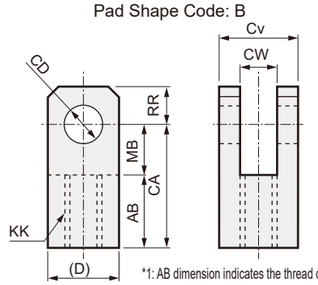
Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

Double Knuckle (by series)

Pad Shape Code: A



Pad Shape Code: B



*1: AB dimension indicates the thread depth.
*2: The MB dimension represents the CW dimension effective length.

Model	Shape Code	Model No.	Applicable bore size (ø)	AB	CA	CW	CD	Cv	D	KK	MB	RR
CMK2	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	25, 32	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12
CMA2	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	30	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12
CKV2	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	25, 32	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12
CAV2 COV2	A	CAV2-50-Y	50	25	50	20 $^{+0.3}_{0}$	14 H10	42	(23)	M16 × 1.5	18	15
		CAV2-75-Y	75.100	30	65	28 $^{+0.3}_{0}$	20 H10	60	(35)	M22 × 1.5	28	22.5
HCA	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	25, 32	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
	A	S1-Y-40	40	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M14 × 1.5	19	16
		S1-Y-50	50	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M18 × 1.5	19	16
		S1-Y-63	63	24	50	20 $^{+0.4}_{+0.1}$	14 H10	40	(27)	M18 × 1.5	19	16
		S1-Y-80	80	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M22 × 1.5	30	25
		S1-Y-100	100	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M26 × 1.5	30	25
JSG	A	SCG-Y-40	40	21	40	14 $^{+0.3}_{+0.1}$	10 H10	28	(22)	M14 × 1.5	19	11
		SCG-Y-50	50, 63	26	50	20 $^{+0.3}_{+0.1}$	14 H10	40	(28)	M18 × 1.5	24	14
		SCG-Y-80	80	31	65	30 $^{+0.3}_{+0.1}$	22 H10	60	(40)	M22 × 1.5	34	20
		SCG-Y-100	100	31	65	30 $^{+0.3}_{+0.1}$	22 H10	60	(40)	M26 × 1.5	34	20
JSM2	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	30	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12
JSK2	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	25, 32	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12
JSC3	A	S1-Y-40	40	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M14 × 1.5	19	16
		S1-Y-50	50	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M18 × 1.5	19	16
		S1-Y-63	63	24	50	20 $^{+0.4}_{+0.1}$	14 H10	40	(27)	M18 × 1.5	19	16
		S1-Y-80	80	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M22 × 1.5	30	25
		S1-Y-100	100	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M26 × 1.5	30	25
JSC4	A	SCS2-125-Y	125	50	85	32 $^{+0.4}_{+0.1}$	25 H10	64	(46)	M30 × 1.5	35	27.5
		SCS2-140-Y	140	50	90	36 $^{+0.4}_{+0.1}$	28 H10	72	(46)	M30 × 1.5	40	30
		SCS2-160-Y	160	60	105	40 $^{+0.4}_{+0.1}$	32 H10	80	(55)	M36 × 1.5	45	35
		SCS2-180-Y	180	65	115	50 $^{+0.4}_{+0.1}$	40 H10	100	(60)	M40 × 1.5	50	42.5
SCP□3	B	P2-Y-10	10	8	21	3.2 $^{+0.2}_{+0.1}$	3.2 H10	12	12	M4	10	7
		P2-Y-16	16	11	21	6.5 $^{+0.2}_{+0.1}$	5 H10	12	12	M5	10	7

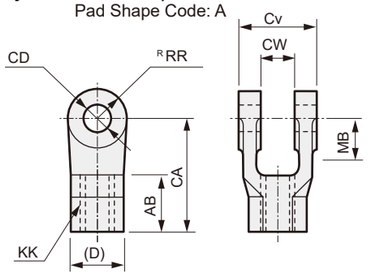
Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

Double Knuckle (by series)

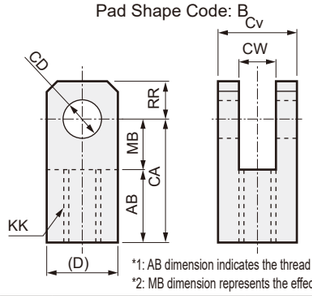
Model	Shape Code	Model No.	Applicable bore size (ø)	AB	CA	CW	CD	Cv	D	KK	MB	RR
SCG	A	SCG-Y-32	32	14	30	14 $^{+0.3}_{+0.1}$	10 H10	28	(20)	M10 × 1.25	16	10
		SCG-Y-40	40	21	40	14 $^{+0.3}_{+0.1}$	10 H10	28	(22)	M14 × 1.5	19	11
		SCG-Y-50	50, 63	26	50	20 $^{+0.3}_{+0.1}$	14 H10	40	(28)	M18 × 1.5	24	14
		SCG-Y-80	80	31	65	30 $^{+0.3}_{+0.1}$	22 H10	60	(40)	M22 × 1.5	34	20
		SCG-Y-100	100	31	65	30 $^{+0.3}_{+0.1}$	22 H10	60	(40)	M26 × 1.5	34	20
SCA2	A	S1-Y-40	40	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M14 × 1.5	19	16
		S1-Y-50	50	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M18 × 1.5	19	16
		S1-Y-63	63	24	50	20 $^{+0.4}_{+0.1}$	14 H10	40	(27)	M18 × 1.5	19	16
		S1-Y-80	80	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M22 × 1.5	30	25
		S1-Y-100	100	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M26 × 1.5	30	25
SCS2	A	SCS2-125-Y	125	50	85	32 $^{+0.4}_{+0.1}$	25 H10	64	(46)	M30 × 1.5	35	27.5
		SCS2-140-Y	140	50	90	36 $^{+0.4}_{+0.1}$	28 H10	72	(46)	M30 × 1.5	40	30
		SCS2-160-Y	160	60	105	40 $^{+0.4}_{+0.1}$	32 H10	80	(55)	M36 × 1.5	45	35
		SCS2-180-Y	180	65	115	50 $^{+0.4}_{+0.1}$	40 H10	100	(60)	M40 × 1.5	50	42.5
		SCS2-200-Y	200	75	125	50 $^{+0.4}_{+0.1}$	40 H10	100	(70)	M45 × 1.5	50	42.5
		SCS2-250-Y	250	88	150	63 $^{+0.4}_{+0.1}$	50 H10	126	(85)	M56 × 2	62	52.5
SCM	B	SCM-Y-20	20	13.5	25	8 $^{+0.4}_{+0.2}$	8 H10	16	16	M8	11.5	9
		SCM-Y-25	25, 32	16	30	10 $^{+0.4}_{+0.2}$	10 H10	20	20	M10 × 1.25	14	11
	A	SCM-Y-40	40	16	30	18 $^{+0.5}_{+0.3}$	10 H10	36	22	M14 × 1.5	14	12
		SCM-Y-50	50, 63	20	40	22 $^{+0.5}_{+0.3}$	14 H10	44	28	M18 × 1.5	20	16
		SCM-Y-80	80	23	50	28 $^{+0.5}_{+0.3}$	18 H10	56	38	M22 × 1.5	27	21
		SCM-Y-100	100	24	55	32 $^{+0.5}_{+0.3}$	22 H10	64	44	M26 × 1.5	31	24
SSD	B	P2-Y-16	12	11	21	6.5 $^{+0.2}_{+0.1}$	5 H10	12	12	M5	10	7
	A	SSD-Y-16	16	11	21	6.5 $^{+0.2}_{+0.1}$	5 H10	12	12	M6	10	10
	B	SSD-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8	13	10
		M1-Y-30	25	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		SSD-Y-32	32	15	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M14	16	12
	A	SSD-Y-40	40	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M14 × 1.5	19	16
		SSD-Y-50	50	24	50	18 $^{+0.4}_{+0.1}$	12 H10	36	(27)	M18 × 1.5	19	16
		SSD-Y-63	63	24	50	20 $^{+0.4}_{+0.1}$	14 H10	40	(27)	M18 × 1.5	19	16
		SSD-Y-80	80	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M22 × 1.5	30	25
		SSD-Y-100	100	35	70	28 $^{+0.4}_{+0.1}$	20 H10	56	(41)	M26 × 1.5	30	25
	B	SCS2-125-Y	125, 140	50	85	32 $^{+0.4}_{+0.1}$	25 H10	64	(46)	M30 × 1.5	35	27.5
		SCS2-160-Y	160	60	105	40 $^{+0.4}_{+0.1}$	32 H10	80	(55)	M36 × 1.5	45	35
SSD2	B	SSD2-Y-12	12	6	16	5 $^{+0.4}_{+0.2}$	5 H10	10	10	M5 × 0.8	7	5.5
		SSD2-Y-16	16	11	21	6.5 $^{+0.4}_{+0.2}$	5 H10	12	12	M6×1	10	7
		SSD2-Y-20	20	13.5	25	8 $^{+0.4}_{+0.2}$	8 H10	16	16	M8 × 1.25	11.5	9
		SSD2-Y-25	25	16	30	10 $^{+0.4}_{+0.2}$	10 H10	20	20	M10 × 1.25	14	11
	A	SSD2-Y-32	32, 40	16	30	18 $^{+0.5}_{+0.3}$	10 H10	36	ø22	M14 × 1.5	14	12
		SSD2-Y-50	50, 63	20	40	22 $^{+0.5}_{+0.3}$	14 H10	44	ø28	M18 × 1.5	20	16
		SSD2-Y-80	80	23	50	28 $^{+0.5}_{+0.3}$	18 H10	56	ø38	M22 × 1.5	27	21
		SSD2-Y-100	100	24	55	32 $^{+0.5}_{+0.3}$	22 H10	64	ø44	M26 × 1.5	31	24
ULK	B	M1-Y-20	20	17	30	8 $^{+0.3}_{+0.1}$	10 H10	19	19	M8 × 1.0	13	10
		M1-Y-30	25, 32	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M10 × 1.25	16	12
		M1-Y-40	40	20	36	10 $^{+0.3}_{+0.1}$	12 H10	25	25	M12 × 1.5	16	12

Double-knuckle (by thread size)

Pad Shape Code: A



Pad Shape Code: B



*1: AB dimension indicates the thread depth.
*2: MB dimension represents the effective length of CW dimension.

Thread size KK	Model No.	Shape Code	Compatible model	Applicable Bore (ø)	AB	CA	CW	CD	Cv	D	MB	RR
M4	P2-Y-10	B	SCP□3	10	8	21	3.2 $^{+0.2}_{0}$	3.2 ^{H10}	12	12	10	7
M5	P2-Y-16	B	SCP□3	16	11	21	6.5 $^{+0.2}_{0}$	5 ^{H10}	12	12	10	7
			SSD	12								
	SSD2-Y-12	B	SSD2	12	6	16	5 $^{+0.4}_{+0.2}$	5 ^{H10}	10	10	7	5.5
M6	SSD-Y-16	A	SSD	16	11	21	6.5 $^{+0.2}_{+0.1}$	5	12	12	10	10
	SSD2-Y-16	B	SSD2	16	11	21	6.5 $^{+0.4}_{+0.2}$	5 ^{H10}	12	12	10	7
M8 × 1.0	M1-Y-20	B	CKV2, CMA2, CMK2 HCA, JSK2, JSM2 ULK	20	17	30	8 $^{+0.3}_{+0.1}$	10 ^{H10}	19	19	13	10
M8	SCM-Y-20	B	SCM	20	13.5	25	8 $^{+0.4}_{+0.2}$	8 ^{H10}	16	16	11.5	9
	SSD-Y-20	B	SSD	20	17	30	8 $^{+0.3}_{+0.1}$	10	19	19	13	10
M8 × 1.25	SSD2-Y-20	B	SSD2	20	13.5	25	8 $^{+0.4}_{+0.2}$	8 ^{H10}	16	16	11.5	9
M10 × 1.25	SCG-Y-32	A	SCG	32	14	30	14 $^{+0.3}_{+0.1}$	10 ^{H10}	28	(20)	16	10
	M1-Y-30	B	CKV2, CMA2, CMK2 HCA, JSK2, JSM2 ULK, SSD	25, 30, 32	20	36	10 $^{+0.3}_{+0.1}$	12 ^{H10}	25	25	16	12
	SCM-Y-25	B	SCM	25, 32	16	30	10 $^{+0.4}_{+0.2}$	10 ^{H10}	20	20	14	11
	SSD2-Y-25	B	SSD2	25	16	30	10 $^{+0.4}_{+0.2}$	10 ^{H10}	20	20	14	11
M12 × 1.5	M1-Y-40	B	CKV2, CMA2, CMK2 JSK2, JSM2, ULK	40	20	36	10 $^{+0.3}_{+0.1}$	12 ^{H10}	25	25	16	12
M14 × 1.5	SCG-Y-40	A	SCG, JSG	40	21	40	14 $^{+0.3}_{+0.1}$	10 ^{H10}	28	(22)	19	11
	S1-Y-40	A	HCA, JSC3 SCA2, SSD	40	24	50	18 $^{+0.4}_{+0.1}$	12 ^{H10}	36	(27)	19	16
	SCM-Y-40	A	SCM	40	16	30	18 $^{+0.5}_{+0.3}$	10 ^{H10}	36	22	14	12
M14	SSD-Y-32	B	SSD	32	15	36	10 $^{+0.3}_{+0.1}$	12	25	25	16	12
M14 × 1.5	SSD2-Y-32	A	SSD2	32, 40	16	30	18 $^{+0.5}_{+0.3}$	10 ^{H10}	36	ø22	14	12
M16 × 1.5	CAV2-50-Y	A	CAV2, COV	50	25	50	20 $^{+0.3}_{0}$	14 ^{H10}	42	(23)	18	15
M18 × 1.5	SCG-Y-50	A	SCG, JSG	50, 63	26	50	20 $^{+0.3}_{+0.1}$	14 ^{H10}	40	(28)	24	14
	S1-Y-50	A	HCA, JSC3, SCA2	50	24	50	18 $^{+0.4}_{+0.1}$	12 ^{H10}	36	(27)	19	16
	SSD-Y-50		SSD									
	S1-Y-63	A	HCA, JSC3, SCA2	63	24	50	20 $^{+0.4}_{+0.1}$	14 ^{H10}	40	(27)	19	16
	SSD-Y-63		SSD									
	SCM-Y-50	A	SCM	50, 63	20	40	22 $^{+0.5}_{+0.3}$	14 ^{H10}	44	28	20	16
	SSD2-Y-50	A	SSD2	50, 63	20	40	22 $^{+0.5}_{+0.3}$	14 ^{H10}	44	ø28	20	16
M22 × 1.5	SCG-Y-80	A	SCG, JSG	80	31	65	30 $^{+0.3}_{+0.1}$	22 ^{H10}	60	(40)	34	20
	CAV2-75-Y	A	CAV2, COV2	75.100	30	65	28 $^{+0.3}_{0}$	20 ^{H10}	60	(35)	28	22.5
	S1-Y-80	A	HCA, JSC3, SCA2	80	35	70	28 $^{+0.4}_{+0.1}$	20 ^{H10}	56	(41)	30	25
	SSD-Y-80		SSD									
	SCM-Y-80	A	SCM	80	23	50	28 $^{+0.5}_{+0.3}$	18 ^{H10}	56	38	27	21
	SSD2-Y-80	A	SSD2	80	23	50	28 $^{+0.5}_{+0.3}$	18 ^{H10}	56	ø38	27	21
M26 × 1.5	SCG-Y-100	A	SCG, JSG	100	31	65	30 $^{+0.3}_{+0.1}$	22 ^{H10}	60	(40)	34	20
	S1-Y-100	A	HCA, JSC3, SCA2	100	35	70	28 $^{+0.4}_{+0.1}$	20 ^{H10}	56	(41)	30	25
	SSD-Y-100		SSD									
	SCM-Y-100	A	SCM	100	24	55	32 $^{+0.5}_{+0.3}$	22 ^{H10}	64	44	31	24

Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

Double-knuckle (by thread size)

Thread size KK	Model No.	Shape Code	Compatible model	Applicable Bore (ø)	AB	CA	CW	CD	Cv	D	MB	RR
M26 × 1.5	SSD2-Y-100	A	SSD2	100	24	55	32 $^{+0.5}_{+0.3}$	22 ^{H10}	64	ø44	31	24
M30 × 1.5	SCS2-125-Y	A	JSC4, SCS2	125	50	85	32 $^{+0.4}_{+0.1}$	25 $^{+0.084}_{0}$	64	(46)	35	27.5
			SSD	125, 140								
	SCS2-140-Y	A	JSC4, SCS2	140	50	90	36 $^{+0.4}_{+0.1}$	28 $^{+0.084}_{0}$	72	(46)	40	30
M36 × 1.5	SCS2-160-Y	A	JSC4, SCS2, SSD	160	60	105	40 $^{+0.4}_{+0.1}$	32 $^{+0.100}_{0}$	80	(55)	45	35
M40 × 1.5	SCS2-180-Y	A	JSC4, SCS2	180	65	115	50 $^{+0.4}_{+0.1}$	40 $^{+0.100}_{0}$	100	(60)	50	42.5
M45 × 1.5	SCS2-200-Y	A	SCS2	200	75	125	50 $^{+0.4}_{+0.1}$	40 $^{+0.100}_{0}$	100	(70)	50	42.5
M56 × 2	SCS2-250-Y	A	SCS2	250	88	150	63 $^{+0.4}_{+0.1}$	50 $^{+0.100}_{0}$	126	(85)	62	52.5

Note: The A and B figures are a guide only. For details, refer to the accessories and dimensions diagrams of each model.

Ending

Custom Products

	Page
■ Rod End Shape Modification	
Model No. Indication Method	Ending 12
• Rod End Female Thread (with Undercut) "N1"	Ending 13
• Rod End Female Thread "N11"	Ending 14
• Rod End No Thread "N12"	Ending 15
• Rod End Male Thread "N13"	Ending 16
• Rod End Spherical Radius "N14"	Ending 17
• Rod End Male Thread (with Undercut) "N15"	Ending 18
• Rod End Single Knuckle Shape "N2"	Ending 19
• Rod End Double Knuckle Shape "N21"	Ending 20
• Rod End with Groove "N3"	Ending 21
• Rod End with Groove and Spherical Radius "N31"	Ending 22

Rod End Shape Modification (N**)

For detailed specifications, dimensions, price, and delivery, please contact us.

Model No. Notation Method

SCM - 00 - 40 B - 200 - N13 A23 WF25

Model No.

Applicable Model

Model No.	Name
SCG	Tie Rod Cylinder
JSG	Tie Rod Cylinder with Brake
SCP□3	Pencil Shaped Cylinder
CMK2	Small bore size cylinder
SCA2	Medium Bore Size Cylinder
SCS2	Medium Bore Size Cylinder
SCP□3-V	Ultra Compact Cell Cylinder
MDC2	Small Direct Cylinder
SSD	Compact Cylinder
SCM	Round shaped cylinder
ULK	Brake Cylinder
JSC3/JSC4	Brake Cylinder
FC□	Flat Cylinder Compact Demi

Model No.

Please refer to the model number indication method for each model.

Rod End Patterns

Code	Contents
N1	Rod End Female Thread (with Undercut)
N11	Rod end female thread
N12	Rod end without thread
N14	Rod End Spherical Radius
N13	Rod end male thread
N15	Rod End Male Thread (with Undercut)
N2	Rod End Single Knuckle Shape
N21	Rod End Double Clevis Shape
N3	Rod End with Groove
N31	Rod End with Groove and Spherical Radius

Custom dimension

Refer to the external dimensions list.

* Please enter only when different from the basic dimensions.

Precautions for Changing Rod End Shape

1. Depending on the specified dimensions, the same strength as the standard product may not be guaranteed.
2. Please leave dimensions, tolerances, and finishes not specified on the drawing to CKD's discretion.

Notes for model No. Selection

1. When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.
2. When specifying multiple items, specify them in order from the left dimension code in the outline dimension table.

(Example) Model No.-N13KKM18×1.5A40WF20

3. If a thread size is specified, the rod end nut is not included.
4. The basic dimensions for N11 are the same as the dimensions for the female thread specification of each model.

The basic dimensions for N13 are the same as the dimensions for the male thread specification of each model.

If specified dimensions are not required for both N11 and N13, follow the model number indication method for each model.

(Incorrect) (Correct)

(Example) SCM-00-40B-200-N13 -> SCM-00-40B-200 (Symbol not required as N13 is standard)

SSD-50-50-N11 -> SSD-50-50 (Symbol not required as N11 is standard)

SSD-50-50-N13 -> SSD-50-50-N (Because "N" exists as the female thread code)

For models that do not have a code for male or female threads in their model number indication method, follow the rod end patterns on this page.

5. Even when there are accessories, etc., enter the codes after the rod end pattern at the very end of the model number.

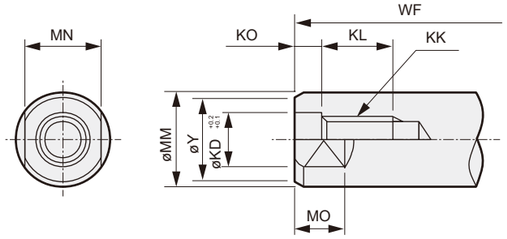
(Incorrect) (Correct)

(Example) SSD-50-50-N13KKM8-CB -> SSD-50-50-CB-N13KKM8

6. This custom model number is for ordering purposes and may differ from the official model number.
7. For double rod types and back-to-back types, please consult with us separately regarding the model number indication.

Rod End Female Thread (with Undercut) (Pattern Code "N1")

Outline Dimension Drawing



When manufacturing with the dimensions in the dimension table, please specify pattern code "N1". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.

(Example) SCM-00-40B-200-N1WF25

WF standard dimension is 20, but this is available at 25.

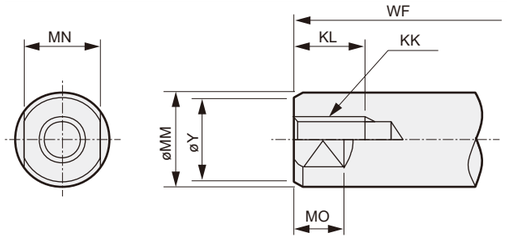
When specifying multiple items, specify them in order from the left code.

*1: CMK2-G2/G3 dimensions are shown in ( ).
*2: For CMA2-E, use the dimensions shown in parentheses.
*3: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*4: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*5: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	KK	øKD	KO	KL	øY	MN	MO	WF
CMK2	20	10	M5 × 0.8	5	2.5	10	8	8	5	24
CKV2	25	12	M6×1	6	3	10	10	10	5	23 (28)
ULK	32	12	M6×1	6	3	10	10	10	5	23 (28)
*1	40	14	M8 × 1.25	8	4	14	12	12	6	23 (28)
CMA2	20	10	M5 × 0.8	5	2.5	10	8	8	5	24 (11)
JSM2	30	12	M6×1	6	3	10	10	10	5	23 (7)
*2	40	14	M8 × 1.25	8	4	14	12	12	6	23 (6)
SCG	32	12	M6×1	6	3	10	10	10	5	25
SCG	40	16	M8 × 1.25	8	4	14	14	14	6	21
JSG	50	20	M10×1.5	10	5	16	18	17	8	23
	63	20	M10×1.5	10	5	16	18	17	8	23
	80	25	M12×1.75	12	5.5	18	22	22	11	32
	100	30	M16×2	16	6	24	27	27	13	32
SCA2	40	16	M8 × 1.25	8	4	14	14	14	8	33.5
	50	20	M10×1.5	10	5	16	18	17	8	37
	63	20	M10×1.5	10	5	16	18	17	8	35
	80	25	M12×1.75	12	5.5	18	22	22	11	48
	100	30	M16×2	16	6	24	27	27	13	53
SCS2	125	32	M18×2.5	18	7.5	26	29	27	14	65
	140	32	M18×2.5	18	7.5	26	29	27	14	67
	160	40	M20×2.5	20	7.5	28	36	36	15	71
	180	45	M22×2.5	22	7.5	30	41	41	17	78
	200	50	M24×3	24	9	32	46	46	20	88
	250	60	M30×3.5	30	10.5	36	56	55	22	94
JSC3	40	16	M8 × 1.25	8	4	14	14	14	8	30
	50	20	M10×1.5	10	5	16	18	17	8	34
	63	20	M10×1.5	10	5	16	18	17	8	30
	80	25	M12×1.75	12	5.5	18	22	22	11	43.5
	100	30	M16×2	16	6	24	27	27	13	48
JSC4	125	35	M18×2.5	18	7.5	26	32	30	14	55
	140	35	M18×2.5	18	7.5	26	32	30	14	57
	160	40	M20×2.5	20	7.5	28	36	36	16	71.5
	180	45	M22×2.5	22	7.5	30	41	41	18	78.5
SSD	12	6	M3×0.5	3	2	6	5	5	3.5	3.5
*3	16	8	M4×0.7	4	2.5	8	7	6	3.5	3.5 (8.5)
*4	20	10	M5 × 0.8	5	2.5	7	8	8	4.5	4.5 (9.5)
	25	12	M6×1	6	3	12	10	10	5	5 (10)
	32	16	M8 × 1.25	8	4	13	14	14	7	7 (12)
	40	16	M8 × 1.25	8	4	13	14	14	7	7 (12)
	50	20	M10 × 1.5	10	4.5	15	18	17	8	8 (13)
	63	20	M10 × 1.5	10	4.5	15	18	17	8	8 (13)
	80	25	M16 × 2	16	6	21	22	22	10	10 (15)
	100	30	M20 × 2.5	20	7.5	27	27	27	12	12 (17)
	125	35	M22 x 2.5	22	7.5	30	33	30	11	16
	140	35	M22 x 2.5	22	7.5	30	33	30	11	16
	160	40	M24 x 3	24	9	33	38	36	14	17
FCD	25	12	M5 × 0.8	5	2.5	9	10	10	5	5
	32	16	M6×1	6	3	11	14	14	7	7
	40	16	M8 × 1.25	8	4	13	14	14	7	8
	50	20	M8 × 1.25	8	4	13	18	17	8	9.5
	63	20	M10 × 1.5	10	5	15	18	17	8	9.5
SCM	20	8	M4×0.7	4	2.5	8	7	6	4	17 (9)
*5	25	10	M5 × 0.8	5	2.5	10	8	8	5	18 (10)
	32	12	M6×1	6	3	10	10	10	5.5	18 (10)
	40	16	M8 × 1.25	8	4	14	14	14	6	20 (9)
	50	20	M10 × 1.5	10	5	16	18	17	8	23 (10)
	63	20	M10 × 1.5	10	5	16	18	17	8	23 (10)
	80	25	M12 × 1.75	12	5.5	18	22	22	11	31
	100	30	M16 × 2	16	6	24	27	27	13	31

Rod End Female Thread (Pattern Code "N11")

Outline Dimension Drawing



*1: The Y dimension may change slightly.

When manufacturing with the dimensions in the dimension table, please specify pattern code "N11". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.

(Example) SCM-00-40B-200-N11WF25

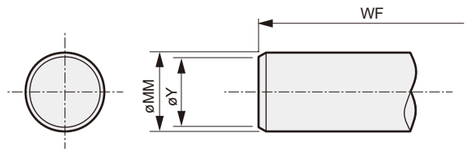
WF standard dimension is 20, but this is available at 25.

*2: CMK2-G2/G3 dimensions are shown in ( ).
*3: For CMA2-E, use the dimensions shown in parentheses.
*4: SSD-G2/G3/KG2/KG3 are the dimensions in ( ).
*5: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*6: For SCM-LD, use the dimensions shown in parentheses.
*7: "WF" is not listed in the MDC2 catalog. The dimension labeled (O) should be taken as "WF".

Series	Bore Size	øMM	KK	KL	øY	MN	MO	WF
CMK2 CKV2 ULK *2	20	10	M5 × 0.8	10	8	8	5	24
	25	12	M6×1	10	10	10	5	23 (28)
	32	12	M6×1	10	10	10	5	23 (28)
	40	14	M8 × 1.25	14	12	12	6	23 (28)
CMA2 JSM2 *3	20	10	M5 × 0.8	10	8	8	5	24 (11)
	30	12	M6×1	10	10	10	5	23 (7)
	40	14	M8 × 1.25	14	12	12	6	23 (6)
SCG	32	12	M6×1	10	10	10	5	25
SCG JSG	40	16	M8 × 1.25	14	14	14	6	21
	50	20	M10 × 1.5	16	18	17	8	23
	63	20	M10 × 1.5	16	18	17	8	23
	80	25	M12 × 1.75	18	22	22	11	32
	100	30	M16 × 2	24	27	27	13	32
SCA2	40	16	M8 × 1.25	14	14	14	8	33.5
	50	20	M10 × 1.5	16	18	17	8	37
	63	20	M10 × 1.5	16	18	17	8	35
	80	25	M12 × 1.75	18	22	22	11	48
	100	30	M16 × 2	24	27	27	13	53
SCS2	125	32	M18 × 2.5	26	29	27	14	65
	140	32	M18 × 2.5	26	29	27	14	67
	160	40	M20 × 2.5	28	36	36	15	71
	180	45	M22 x 2.5	30	41	41	17	78
	200	50	M24 x 3	32	46	46	20	88
	250	60	M30×3.5	36	56	55	22	94
JSC3	40	16	M8 × 1.25	14	14	14	8	30
	50	20	M10 × 1.5	16	18	17	8	34
	63	20	M10 × 1.5	16	18	17	8	30
	80	25	M12 × 1.75	18	22	22	11	43.5
	100	30	M16 × 2	24	27	27	13	48
JSC4	125	35	M18 × 2.5	26	32	30	14	55
	140	35	M18 × 2.5	26	32	30	14	57
	160	40	M20 × 2.5	28	36	36	16	71.5
	180	45	M22 x 2.5	30	41	41	18	78.5
SSD *4 *5	12	6	M3×0.5	6	5	5	3.5	3.5
	16	8	M4×0.7	8	7	6	3.5	3.5 (8.5)
	20	10	M5 × 0.8	7	8	8	4.5	4.5 (9.5)
	25	12	M6×1	12	10	10	5	5 (10)
	32	16	M8 × 1.25	13	14	14	7	7 (12)
	40	16	M8 × 1.25	13	14	14	7	7 (12)
	50	20	M10 × 1.5	15	18	17	8	8 (13)
	63	20	M10 × 1.5	15	18	17	8	8 (13)
	80	25	M16 × 2	21	22	22	10	10 (15)
	100	30	M20 × 2.5	27	27	27	12	12 (17)
	125	35	M22 x 2.5	30	33	30	11	16
	140	35	M22 x 2.5	30	33	30	11	16
	160	40	M24 x 3	33	38	36	14	17
FCD	25	12	M5 × 0.8	9	10	10	5	5
	32	16	M6×1	11	14	14	7	7
	40	16	M8 × 1.25	13	14	14	7	8
	50	20	M8 × 1.25	13	18	17	8	9.5
	63	20	M10 × 1.5	15	18	17	8	9.5
SCM *6	20	8	M4×0.7	8	7	6	4	17 (9)
	25	10	M5 × 0.8	10	8	8	5	18 (10)
	32	12	M6×1	10	10	10	5.5	18 (10)
	40	16	M8 × 1.25	14	14	14	6	20 (9)
	50	20	M10 × 1.5	16	18	17	8	23 (10)
	63	20	M10 × 1.5	16	18	17	8	23 (10)
	80	25	M12 × 1.75	18	22	22	11	31
	100	30	M16 × 2	24	27	27	13	31
MDC2 *7	6	4	M2.5×0.45	4	3.5	3.5	2.5	3
	8	5	M3×0.5	5	4.5	4.5	2.5	3
	10	6	M3×0.5	5	5	5	2.5	3

Rod End No Thread (Pattern Code "N12")

Outline Dimension Drawing



*1: "WF" is not listed in the SCP*3 catalog. The "13 mm" dimension should be taken as "WF".
*2: CMK2-G2/G3 dimensions are shown in ( ).
*3: For CMA2-E, use the dimensions shown in parentheses.
*4: This pattern cannot be specified for SSD-KU, SCM-U, or SCA2-U (low-friction cylinders).
*5: The same applies to SCP*3-V.
*6: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*7: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*8: For SCM-LD, use the dimensions shown in parentheses.
*9: "WF" is not listed in the MDC2 catalog. The dimension labeled (O) should be taken as "WF".

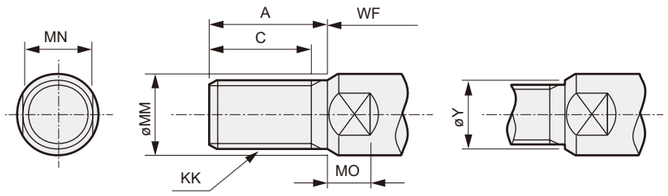
When manufacturing with the dimensions in the dimension table, please specify pattern code "N12". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.

Example
SCM-00-40B-200-N12WF25
WF standard dimension is 20, but this is available at 25.

Series	Bore Size	øMM	øY	WF
SCP□3 *1	6	3	2.5	13
	10	4	3.5	13
	16	5	4.5	13
CMK2	20	10	8	24
CKV2	25	12	10	23 (28)
ULK	32	12	10	23 (28)
*2	40	14	12	23 (28)
CMA2	20	10	8	24 (11)
JSM2	30	12	10	23 (7)
*3	40	14	12	23 (6)
SCG	32	12	10	25
SSG	40	16	14	21
	50	20	18	23
	63	20	18	23
	80	25	22	32
	100	30	27	32
SCA2	40	16	14	33.5
*4	50	20	18	37
	63	20	18	35
	80	25	22	48
	100	30	27	53
SCS2	125	32	29	65
	140	32	29	67
	160	40	36	71
	180	45	41	78
	200	50	46	88
	250	60	56	94
JSC3	40	16	14	30
	50	20	18	34
	63	20	18	30
	80	25	22	43.5
	100	30	27	48
JSC4	125	35	32	55
	140	35	32	57
	160	40	36	71.5
	180	45	41	78.5
SCP□3-V *5	10	4	3.5	13
	16	5	4.5	13
SSD *4 *6 *7	12	6	5	3.5
	16	8	7	3.5 (8.5)
	20	10	8	4.5 (9.5)
	25	12	10	5 (10)
	32	16	14	7 (12)
	40	16	14	7 (12)
	50	20	18	8 (13)
	63	20	18	8 (13)
	80	25	22	10 (15)
	100	30	27	12 (17)
	125	35	33	16
	140	35	33	16
	160	40	38	17
FCD	25	12	10	5
	32	16	14	7
	40	16	14	8
	50	20	18	9.5
	63	20	18	9.5
SCM *4 *8	20	8	7	17 (9)
	25	10	8	18 (10)
	32	12	10	18 (10)
	40	16	14	20 (9)
	50	20	18	23 (10)
	63	20	18	23 (10)
	80	25	22	31
	100	30	27	31
MDC2 *9	4	2	1.5	3
	6	4	3.5	3
	8	5	4.5	3
	10	6	5	3

Rod End Male Thread (Pattern Code "N13")

Outline Dimension Drawing



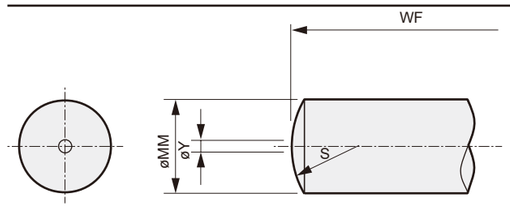
*1: "WF" is not listed in the SCP□3 catalog. The "13 mm" dimension should be taken as "WF".
*2: CMK2-G2/G3 dimensions are shown in ( ).
*3: For CMA2-E, use the dimensions shown in parentheses.
*4: The same applies to SCP□3-V.
*5: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*6: For SSD, the WF dimension is different when LB2 or FA is selected.Please consult us separately.
*7: For SCM-LD, use the dimensions shown in parentheses.
*8: If a thread size is specified, the rod end nut is not included. Additionally, the Y dimension may change slightly.

When manufacturing with the dimensions in the dimension table, please specify pattern code "N13". When it is necessary to change some dimensions, enter the pattern code “N13” followed by the dimension code, then the specified dimension.
(Example) SCM-00-40B-200-N13A23WF27
The standard WF dimension is 20, but it will be manufactured as 27. The standard A dimension is 30, but it will be manufactured as 23. If the C dimension is not specified, it will be manufactured with the standard (A-C) dimensional difference.

Series	Bore Size	øMM	KK	C	A	øY	MN	MO	WF
SCP□3 *1	6	3	M3×0.5	15	–	–	–	–	13
	10	4	M4×0.7	15	–	–	–	–	13
	16	5	M5 × 0.8	15	–	–	–	–	13
CMK2 CKV2 ULK *2	20	10	M8 x 1	18	20	8	8	5	24
	25	12	M10 × 1.25	20	23	10	10	5	23 (28)
	32	12	M10 × 1.25	20	23	10	10	5	23 (28)
	40	14	M12 × 1.5	22	25	12	12	6	23 (28)
CMA2 JSM2 *3	20	10	M8 x 1	18	20	8	8	5	24 (11)
	30	12	M10 × 1.25	20	23	10	10	5	23 (7)
	40	14	M12 × 1.5	22	25	12	12	6	23 (6)
SCG	32	12	M10 × 1.25	19.5	22	10	10	5.5	25
SCG JSG	40	16	M14 × 1.5	27	30	14	14	6	21
	50	20	M18 × 1.5	32	35	18	17	8	23
	63	20	M18 × 1.5	32	35	18	17	8	23
	80	25	M22 × 1.5	37	40	22	22	11	32
	100	30	M26 × 1.5	37	40	26	27	13	32
SCA2	40	16	M14 × 1.5	20	22	14	14	8	33.5
	50	20	M18 × 1.5	26	28	18	17	8	37
	63	20	M18 × 1.5	26	28	18	17	8	35
	80	25	M22 × 1.5	34	36	22	22	11	48
	100	30	M26 × 1.5	43	45	26	27	13	53
SCS2	125	32	M30 × 1.5	47	50	30	27	14	65
	140	32	M30 × 1.5	47	50	30	27	14	67
	160	40	M36 × 1.5	53	56	36	36	15	71
	180	45	M40 × 1.5	60	63	40	41	17	78
	200	50	M45 × 1.5	69	72	45	46	20	88
	250	60	M56 × 2	84	88	56	55	22	94
JSC3	40	16	M14 × 1.5	20	22	14	14	8	30
	50	20	M18 × 1.5	26	28	18	17	8	34
	63	20	M18 × 1.5	26	28	18	17	8	30
	80	25	M22 × 1.5	34	36	22	22	11	43.5
	100	30	M26 × 1.5	43	45	26	27	13	48
JSC4	125	35	M30 × 1.5	47	50	30	30	14	55
	140	35	M30 × 1.5	47	50	30	30	14	57
	160	40	M36 × 1.5	53	56	36	36	16	71.5
	180	45	M40 × 1.5	60	63	40	41	18	78.5
SCP□3-V *4	10	4	M4×0.7	15	–	–	–	–	13
	16	5	M5 × 0.8	15	–	–	–	–	13
SSD *5 *6	12	6	M5 × 0.8	9	10.5	5	5	3.5	3.5
	16	8	M6×1	10	12	6	6	3.5	3.5 (8.5)
	20	10	M8 × 1.25	12	14	8	8	4.5	4.5 (9.5)
	25	12	M10 × 1.25	15	17.5	10	10	5	5 (10)
	32	16	M14 × 1.5	20.5	23.5	14	14	5	5 (10)
	40	16	M14 × 1.5	20.5	23.5	14	14	5	5 (10)
	50	20	M18 × 1.5	26	28.5	18	17	5	5 (10)
	63	20	M18 × 1.5	26	28.5	18	17	5	5 (10)
	80	25	M22 × 1.5	32.5	35.5	22	22	8	8 (13)
	100	30	M26 × 1.5	32.5	35.5	26	27	8	8 (13)
	125	35	M30 × 1.5	42	45	30	30	11	13
	140	35	M30 × 1.5	42	45	30	30	11	13
	160	40	M36 × 1.5	47	50	36	36	11	14
FCD	25	12	M10 × 1.25	20	22	10	10	4	5
	32	16	M14 × 1.5	20	22	14	14	6	7
	40	16	M14 × 1.5	20	22	14	14	6	7
	50	20	M18 × 1.5	26	28	18	17	8	8
	63	20	M18 × 1.5	26	28	18	17	8	8
SCM *7	20	8	M8 × 1.25	16	18	–	6	4	17 (9)
	25	10	M10 × 1.25	20	22	–	8	5	18 (10)
	32	12	M10 × 1.25	20	22	10	10	5.5	18 (10)
	40	16	M14 × 1.5	27	30	14	14	6	20 (9)
	50	20	M18 × 1.5	32	35	18	17	8	23 (10)
	63	20	M18 × 1.5	32	35	18	17	8	23 (10)
	80	25	M22 × 1.5	37	40	22	22	11	31
	100	30	M26 × 1.5	37	40	26	27	13	31
MDC2 *8	6	4	M3×0.5	6	8	3.5	3.5	2.5	3
	8	5	M4×0.7	7	9	4.5	4.5	2.5	3
	10	6	M5 × 0.8	9	11	5	5	2.5	3

Rod End Spherical Radius (Pattern Code "N14")

Outline Dimension Drawing



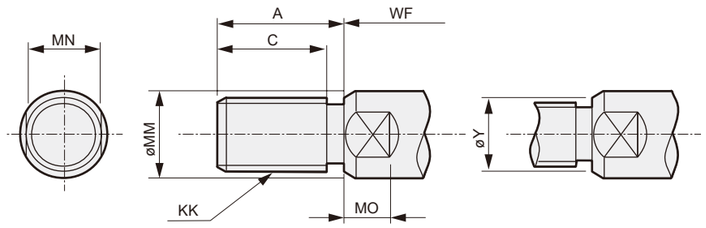
*1: "WF" is not listed in the SCP□3 and SCP□3-V catalogs. The "13 mm" dimension should be taken as "WF".
*2: CMK2-G2/G3 dimensions are shown in ( ).
*3: This pattern cannot be specified for SSD-KU, SCM-U, or SCA2-U (low-friction cylinders).

When manufacturing with the dimensions in the dimension table, please specify pattern code "N14". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.
(Example) SCM-00-40B-200-N14WF25
WF standard dimension is 20, but this is available at 25.
*4: SSD-G2/G3/KG2/KG3 are the dimensions in ( ).
*5: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*6: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	øY	S	WF
SCP□3 *1	6	3	0.3	3	13
	10	4	0.3	4	13
	16	5	0.3	5	13
CMK2 CKV2 ULK *2	20	10	0.5	10	24
	25	12	0.5	12	23 (28)
	32	12	0.5	12	23 (28)
	40	14	0.5	14	23 (28)
SCG	32	12	0.5	12	25
SCG JSG	40	16	1	16	21
	50	20	1	20	23
	63	20	1	20	23
	80	25	1	25	32
	100	30	1	30	32
SCA2 *3	40	16	1	16	33.5
	50	20	1	20	37
	63	20	1	20	35
	80	25	1	25	48
	100	30	1	30	53
SCS2	125	32	2	32	65
	140	32	2	32	67
	160	40	2	40	71
	180	45	2	45	78
	200	50	2	50	88
	250	60	2	60	94
JSC3	40	16	1	16	30
	50	20	1	20	34
	63	20	1	20	30
	80	25	1	25	43.5
	100	30	1	30	48
JSC4	125	35	2	35	55
	140	35	2	35	57
	160	40	2	40	71.5
	180	45	2	45	78.5
SCP□3-V *1	10	4	0.3	4	13
	16	5	0.3	5	13
SSD *3 *4 *5	12	6	0.5	6	3.5
	16	8	0.5	8	3.5 (8.5)
	20	10	0.5	10	4.5 (9.5)
	25	12	0.5	12	5 (10)
	32	16	1	16	7 (12)
	40	16	1	16	7 (12)
	50	20	1	20	8 (13)
	63	20	1	20	8 (13)
	80	25	1	25	10 (15)
	100	30	1	30	12 (17)
	125	35	2	35	16
	140	35	2	35	16
	160	40	2	40	17
SCM *3 *6	20	8	0.5	8	17 (9)
	25	10	0.5	10	18 (10)
	32	12	0.5	12	18 (10)
	40	16	1	16	20 (9)
	50	20	1	20	23 (10)
	63	20	1	20	23 (10)
	80	25	1	25	31
	100	30	1	30	31

Rod End Male Thread (with Undercut) (Pattern Code "N15")

Outline Dimension Drawing



*1: If a thread size is specified, the rod end nut is not included. Additionally, the Y dimension may change slightly.

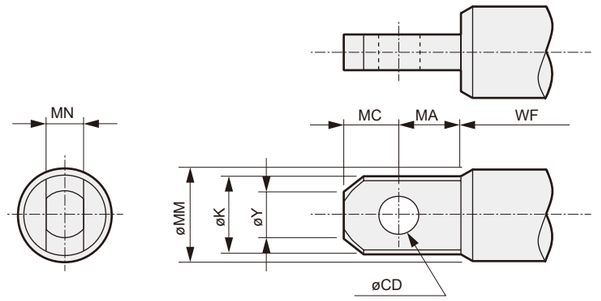
When manufacturing with the dimensions in the dimension table, please specify pattern code "N15".
When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.
(Example) SCM-00-40B-200-N15C20A23
The standard C dimension is 27, but it will be manufactured as 20. The standard A dimension is 30, but it will be manufactured as 23. If the C dimension is not specified, it will be manufactured with the standard (A-C) dimensional difference.

*2: CMK2-G2/G3 dimensions are shown in ( ).
*3: For CMA2-E, use the dimensions shown in parentheses.
*4: SSD-G2/G3/KG2/KG3 are the dimensions in ( ).
*5: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*6: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	KK	C	A	øY	MN	MO	WF
CMK2 CKV2 ULK *2	20	10	M8 x 1	18	20	8	8	5	24
	25	12	M10 × 1.25	20	23	10	10	5	23 (28)
	32	12	M10 × 1.25	20	23	10	10	5	23 (28)
	40	14	M12 × 1.5	22	25	12	12	6	23 (28)
CMA2 JSM2 *3	20	10	M8 x 1	18	20	8	8	5	24 (11)
	30	12	M10 × 1.25	20	23	10	10	5	23 (7)
	40	14	M12 × 1.5	22	25	12	12	6	23 (6)
SCG	32	12	M10 × 1.25	19.5	22	10	10	5	25
SCG JSG	40	16	M14 × 1.5	27	30	14	14	6	21
	50	20	M18 × 1.5	32	35	18	17	8	23
	63	20	M18 × 1.5	32	35	18	17	8	23
	80	25	M22 × 1.5	37	40	22	22	11	32
	100	30	M26 × 1.5	37	40	26	27	13	32
SCA2	40	16	M14 × 1.5	20	22	14	14	8	33.5
	50	20	M18 × 1.5	26	28	18	17	8	37
	63	20	M18 × 1.5	26	28	18	17	8	35
	80	25	M22 × 1.5	34	36	22	22	11	48
	100	30	M26 × 1.5	43	45	26	27	13	53
SCS2	125	32	M30 × 1.5	47	50	30	27	14	65
	140	32	M30 × 1.5	47	50	30	27	14	67
	160	40	M36 × 1.5	53	56	36	36	15	71
	180	45	M40 × 1.5	60	63	40	41	17	78
	200	50	M45 × 1.5	69	72	45	46	20	88
	250	60	M56 × 2	84	88	56	55	22	94
JSC3	40	16	M14 × 1.5	20	22	14	14	8	30
	50	20	M18 × 1.5	26	28	18	17	8	34
	63	20	M18 × 1.5	26	28	18	17	8	30
	80	25	M22 × 1.5	34	36	22	22	11	43.5
	100	30	M26 × 1.5	43	45	26	27	13	48
JSC4	125	35	M30 × 1.5	47	50	30	30	14	55
	140	35	M30 × 1.5	47	50	30	30	14	57
	160	40	M36 × 1.5	53	56	36	36	16	71.5
	180	45	M40 × 1.5	60	63	40	41	18	78.5
SSD *4 *5	12	6	M5 × 0.8	9	10.5	5	5	3.5	3.5
	16	8	M6×1	10	12	6	6	3.5	3.5 (8.5)
	20	10	M8 × 1.25	12	14	8	8	4.5	4.5 (9.5)
	25	12	M10 × 1.25	15	17.5	10	10	5	5 (10)
	32	16	M14 × 1.5	20.5	23.5	14	14	5	5 (10)
	40	16	M14 × 1.5	20.5	23.5	14	14	5	5 (10)
	50	20	M18 × 1.5	26	28.5	18	17	5	5 (10)
	63	20	M18 × 1.5	26	28.5	18	17	5	5 (10)
	80	25	M22 × 1.5	32.5	35.5	22	22	8	8 (13)
	100	30	M26 × 1.5	32.5	35.5	26	27	8	8 (13)
	125	35	M30 × 1.5	42	45	30	30	11	13
	140	35	M30 × 1.5	42	45	30	30	11	13
	160	40	M36 × 1.5	47	50	36	36	11	14
FCD	25	12	M10 × 1.25	20	22	10	10	4	5
	32	16	M14 × 1.5	20	22	14	14	6	7
	40	16	M14 × 1.5	20	22	14	14	6	7
	50	20	M18 × 1.5	26	28	18	17	8	8
	63	20	M18 × 1.5	26	28	18	17	8	8
SCM *6	20	8	–	–	–	–	–	–	–
	25	10	–	–	–	–	–	–	–
	32	12	M10 × 1.25	20	22	10	10	5.5	18 (10)
	40	16	M14 × 1.5	27	30	14	14	6	20 (9)
	50	20	M18 × 1.5	32	35	18	17	8	23 (10)
	63	20	M18 × 1.5	32	35	18	17	8	23 (10)
	80	25	M22 × 1.5	37	40	22	22	11	31
	100	30	M26 × 1.5	37	40	26	27	13	31

Rod End Single Knuckle Shape (Pattern Code "N2")

Outline Dimension Drawing



Angle Tolerance

Code	Dimension	Angle Tolerance
CD	The tolerance shown to the right is applied uniformly regardless of the dimensions. When manufacturing with the dimensions in the dimension table, please specify pattern code "N2".	H10
MN	10 or less	-0.1 -0.2
	Over 10 30 or less	-0.1 −0.3
	Over 30 80 or less	-0.1 -0.4

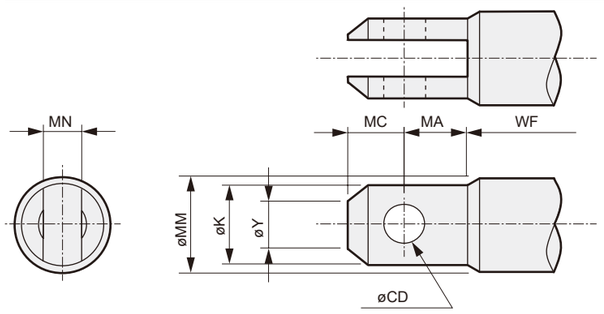
When manufacturing with the dimensions in the dimension table, please specify pattern code "N2". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.
(Example) SCM-00-40B-200-N2CD5MA7.5
The standard dimension for CD is 6, but it will be manufactured as 5.
The standard dimension for MA is 9, but it will be manufactured as 7.5.

*1: CMK2-G2/G3 dimensions are shown in ( ).
*2: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*3: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*4: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	øCD	MN	MA	MC	øY	øK	WF
CMK2 CKV2 ULK *1	20	10	4	4	6	4	5.4	9	24
	25	12	5	5	7.5	5	6.6	11	23 (28)
	32	12	5	5	7.5	5	6.6	11	23 (28)
	40	14	6	6	9	6	7.8	13	23 (28)
SCG	32	12	5	5	7.5	5	6.6	11	25
SCG JSG	40	16	6	6	9	6	9	15	21
	50	20	8	8	12	8	11.4	19	23
	63	20	8	8	12	8	11.4	19	23
	80	25	10	10	15	10	14.4	24	32
	100	30	12	12	18	12	17.4	29	32
SCA2	40	16	6	6	9	6	9	15	33.5
	50	20	8	8	12	8	11.4	19	37
	63	20	8	8	12	8	11.4	19	35
	80	25	10	10	15	10	14.4	24	48
	100	30	12	12	18	12	17.4	29	53
SCS2	125	32	14	14	21	14	19.8	30	65
	140	32	14	14	21	14	19.8	30	67
	160	40	16	16	24	16	22.8	38	71
	180	45	18	18	27	18	25.8	43	78
	200	50	20	20	30	20	28.8	48	88
	250	60	24	24	36	24	34.8	58	94
JSC3	40	16	6	6	9	6	9	15	30
	50	20	8	8	12	8	11.4	19	34
	63	20	8	8	12	8	11.4	19	30
	80	25	10	10	15	10	14.4	24	43.5
	100	30	12	12	18	12	17.4	29	48
JSC4	125	35	14	14	21	14	19.8	33	55
	140	35	14	14	21	14	19.8	33	57
	160	40	16	16	24	16	22.8	38	71.5
	180	45	18	18	27	18	25.8	43	78.5
SSD *2 *3	12	6	–	–	–	–	–	–	–
	16	8	–	–	–	–	–	–	–
	20	10	4	4	6	4	5.4	9	4.5 (9.5)
	25	12	5	5	7.5	5	6.6	11	5 (10)
	32	16	6	6	9	6	9	15	5 (10)
	40	16	6	6	9	6	9	15	5 (10)
	50	20	8	8	12	8	11.4	19	5 (10)
	63	20	8	8	12	8	11.4	19	5(13)
	80	25	10	10	15	10	14.4	24	8 (13)
	100	30	12	12	18	12	17.4	29	8 (13)
	125	35	14	14	21	14	19.8	33	13
	140	35	14	14	21	14	19.8	33	13
	160	40	16	16	24	16	22.8	38	14
SCM *4	20	8	–	–	–	–	–	–	–
	25	10	4	4	6	4	5.4	9	18 (10)
	32	12	5	5	7.5	5	6.6	11	18 (10)
	40	16	6	6	9	6	9	15	20 (9)
	50	20	8	8	12	8	11.4	19	23 (10)
	63	20	8	8	12	8	11.4	19	23 (10)
	80	25	10	10	15	10	14.4	24	31
	100	30	12	12	18	12	17.4	29	31

Rod End Double Knuckle Shape (Pattern Code "N21")

Outline Dimension Drawing



Angle Tolerance

Code	Dimension	Angle Tolerance
CD	The tolerance shown to the right is applied uniformly regardless of the dimensions.	H10
MN	10 or less	+0.2 +0.1
	Over 10 to 30 or Less	+0.3 +0.1
	Over 30 to 80 or Less	+0.4 +0.1

When manufacturing with the dimensions in the dimension table, please specify pattern code "N21". When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.

(Example) SCM-00-40B-200-N21CD5MA7.5

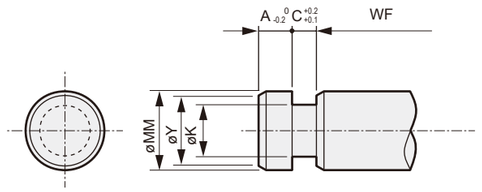
The standard dimension for CD is 6, but it will be manufactured as 5. The standard dimension for MA is 9, but it will be manufactured as 7.5.

*1: CMK2-G2/G3 dimensions are shown in ( ).
*2: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*3: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*4: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	øCD	MN	MA	MC	øY	øK	WF
CMK2 CKV2 ULK *1	20	10	4	4	6	4	5.4	9	24
	25	12	5	5	7.5	5	6.6	11	23 (28)
	32	12	5	5	7.5	5	6.6	11	23 (28)
	40	14	6	6	9	6	7.8	13	23 (28)
SCG	32	12	5	5	7.5	5	6.6	11	25
SCG JSG	40	16	6	6	9	6	9	15	21
	50	20	8	8	12	8	11.4	19	23
	63	20	8	8	12	8	11.4	19	23
	80	25	10	10	15	10	14.4	24	32
	100	30	12	12	18	12	17.4	29	32
SCA2	40	16	6	6	9	6	9	15	33.5
	50	20	8	8	12	8	11.4	19	37
	63	20	8	8	12	8	11.4	19	35
	80	25	10	10	15	10	14.4	24	48
	100	30	12	12	18	12	17.4	29	53
SCS2	125	32	14	14	21	14	19.8	30	65
	140	32	14	14	21	14	19.8	30	67
	160	40	16	16	24	16	22.8	38	71
	180	45	18	18	27	18	25.8	43	78
	200	50	20	20	30	20	28.8	48	88
	250	60	24	24	36	24	34.8	58	94
JSC3	40	16	6	6	9	6	9	15	30
	50	20	8	8	12	8	11.4	19	34
	63	20	8	8	12	8	11.4	19	30
	80	25	10	10	15	10	14.4	24	43.5
	100	30	12	12	18	12	17.4	29	48
JSC4	125	35	14	14	21	14	19.8	33	55
	140	35	14	14	21	14	19.8	33	57
	160	40	16	16	24	16	22.8	38	71.5
	180	45	18	18	27	18	25.8	43	78.5
SSD *2 *3	12	6	–	–	–	–	–	–	–
	16	8	–	–	–	–	–	–	–
	20	10	4	4	6	4	5.4	9	4.5 (9.5)
	25	12	5	5	7.5	5	6.6	11	5 (10)
	32	16	6	6	9	6	9	15	5 (10)
	40	16	6	6	9	6	9	15	5 (10)
	50	20	8	8	12	8	11.4	19	5 (10)
	63	20	8	8	12	8	11.4	19	5 (10)
	80	25	10	10	15	10	14.4	24	8 (13)
	100	30	12	12	18	12	17.4	29	8 (13)
	125	35	14	14	21	14	19.8	33	13
	140	35	14	14	21	14	19.8	33	13
	160	40	16	16	24	16	22.8	38	14
SCM *4	20	8	–	–	–	–	–	–	–
	25	10	4	4	6	4	5.4	9	18 (10)
	32	12	5	5	7.5	5	6.6	1	18 (10)
	40	16	6	6	9	6	9	15	20 (9)
	50	20	8	8	12	8	11.4	19	23 (10)
	63	20	8	8	12	8	11.4	19	23 (10)
	80	25	10	10	15	10	14.4	24	31
	100	30	12	12	18	12	17.4	29	31

Rod End with Groove (Pattern Code "N3")

Outline Dimension Drawing



When manufacturing with the dimensions in the dimension table, please specify pattern code "N3".
When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.

(Example) SCM-00-40B-200-N3WF25

WF standard dimension is 20, but this is available at 25.

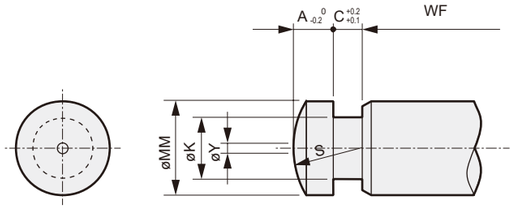
*1: CMK2-G2/G3 dimensions are shown in ( ).
*2: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*3: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*4: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	øK	C	A	øY	WF
CMK2 CKV2 ULK *1	20	10	6	4	4	8	24
	25	12	7.2	4.8	4.8	10	23 (28)
	32	12	7.2	4.8	4.8	10	23 (28)
	40	14	8.4	5.6	5.6	12	23 (28)
SCG	32	12	7.2	4.8	4.8	10	25
SCG JSG	40	16	9.6	6.4	6.4	14	21
	50	20	12	8	8	18	23
	63	20	12	8	8	18	23
	80	25	15	10	10	22	32
	100	30	18	12	12	27	32
SCA2	40	16	9.6	6.4	6.4	14	33.5
	50	20	12	8	8	18	37
	63	20	12	8	8	18	35
	80	25	15	10	10	22	48
	100	30	18	12	12	27	53
SCS2	125	32	21	14	14	29	65
	140	32	21	14	14	29	67
	160	40	24	16	16	36	71
	180	45	27	18	18	41	78
	200	50	30	20	20	46	88
	250	60	36	22	22	56	94
JSC3	40	16	9.6	6.4	6.4	14	30
	50	20	12	8	8	18	34
	63	20	12	8	8	18	30
	80	25	15	10	10	22	43.5
	100	30	18	12	12	27	48
JSC4	125	35	21	14	14	32	55
	140	35	21	14	14	32	57
	160	40	24	16	16	36	71.5
	180	45	27	18	18	41	78.5
SSD *2 *3	12	6	–	–	–	–	–
	16	8	–	–	–	–	–
	20	10	6	4	4	8	4.5 (9.5)
	25	12	7.2	4.8	4.8	10	5 (10)
	32	16	9.6	6.4	6.4	14	7 (12)
	40	16	9.6	6.4	6.4	14	7 (12)
	50	20	12	8	8	18	8 (13)
	63	20	12	8	8	18	8 (13)
	80	25	15	10	10	22	10 (15)
	100	30	18	12	12	27	12 (17)
	125	35	21	14	14	33	16
	140	35	21	14	14	33	16
	160	40	24	16	16	38	17
SCM *4	20	8	–	–	–	–	–
	25	10	6	4	4	8	18 (10)
	32	12	7.2	4.8	4.8	10	18 (10)
	40	16	9.6	6.4	6.4	14	20 (9)
	50	20	12	8	8	18	23 (10)
	63	20	12	8	8	18	23 (10)
	80	25	15	10	10	22	31
	100	30	18	12	12	27	31

Custom

Rod End with Groove and Spherical Radius (Pattern Code "N31")

Outline Dimension Drawing



When manufacturing with the dimensions in the dimension table, please specify pattern code "N31".
When it is necessary to change some dimensions, enter the pattern code followed by the dimension code, then the specified dimension.
(Example) SCM-00-40B-200-N31WF25
WF standard dimension is 20, but this is available at 25.
*1: CMK2-G2/G3 dimensions are shown in ( ).
*2: For SSD-G2, G3, KG2, and KG3, use the dimensions shown in parentheses.
*3: For SSD, the WF dimension is different when LB2 or FA is selected. Please consult us separately.
*4: For SCM-LD, use the dimensions shown in parentheses.

Series	Bore Size	øMM	øK	C	A	S	øY	WF
CMK2	20	10	6	4	4	10	0.5	24
CKV2	25	12	7.2	4.8	4.8	12	0.5	23 (28)
ULK	32	12	7.2	4.8	4.8	12	0.5	23 (28)
*1	40	14	8.4	5.6	5.6	14	0.5	23 (28)
SCG	32	12	7.2	4.8	4.8	12	0.5	25
SCG	40	16	9.6	6.4	6.4	16	1	21
JSG	50	20	12	8	8	20	1	23
	63	20	12	8	8	20	1	23
	80	25	15	10	10	25	1	32
	100	30	18	12	12	30	1	32
SCA2	40	16	9.6	6.4	6.4	16	1	33.5
	50	20	12	8	8	20	1	37
	63	20	12	8	8	20	1	35
	80	25	15	10	10	25	1	48
	100	30	18	12	12	30	1	53
SCS2	125	32	21	14	14	32	1	65
	140	32	21	14	14	32	2	67
	160	40	24	16	16	40	2	71
	180	45	27	18	18	45	2	78
	200	50	30	20	20	50	2	88
	250	60	36	22	22	60	2	94
JSC3	40	16	9.6	6.4	6.4	16	1	30
	50	20	12	8	8	20	1	34
	63	20	12	8	8	20	1	30
	80	25	15	10	10	25	1	43.5
	100	30	18	12	12	30	1	48
JSC4	125	35	21	14	14	35	1	55
	140	35	21	14	14	35	2	57
	160	40	24	16	16	40	2	71.5
	180	45	27	18	18	45	2	78.5
SSD	12	6	–	–	–	–	–	–
*2	16	8	–	–	–	–	–	–
*3	20	10	6	4	4	10	0.5	4.5 (9.5)
	25	12	7.2	4.8	4.8	12	0.5	5 (10)
	32	16	9.6	6.4	6.4	16	1	7 (12)
	40	16	9.6	6.4	6.4	16	1	7 (12)
	50	20	12	8	8	20	1	8 (13)
	63	20	12	8	8	20	1	8 (13)
	80	25	15	10	10	25	1	10 (15)
	100	30	18	12	12	30	1	12 (17)
	125	35	21	14	14	35	2	16
	140	35	21	14	14	35	2	16
	160	40	24	16	16	40	2	17
SCM	20	8	–	–	–	–	–	–
*4	25	10	6	4	4	10	0.5	18 (10)
	32	12	7.2	4.8	4.8	12	0.5	18 (10)
	40	16	9.6	6.4	6.4	16	1	20 (9)
	50	20	12	8	8	20	1	23 (10)
	63	20	12	8	8	20	1	23 (10)
	80	25	15	10	10	25	1	31
	100	30	18	12	12	30	1	31

MEMO

Product guide

	Page
Booster (B)	Ending 26
Air-Hydro Booster (AHB)	Ending 26
Celcon Cylinder / Celcon Hydro Cylinder	Ending 27

Booster (High hydraulic pressure can be obtained using only pneumatic pressure)

Model No.	Bore size mm	Pneumatic Pipe Connection Port Rc	Boosting ratio	Pressure Generated at 0.5 MPa	Discharge Oil Volume (cc)	Hydraulic Piping Connection Port Rc	Cushion
B-80-11	100	1/2	11.0	55	80	1/4	None
B-120-25	160		25.8	128	120		
B-160-25	160		25.8	128	160		



● B Series

RoHS

Air-Hydro Booster

Model No.	Bore size mm	Max. working pressure MPa	Min. Operating Pressure MPa	Boosting ratio	Generated Hydraulic Pressure (at 0.5 MPa) MPa	Fast-feed Discharge Volume cm^3 (min-max)	High-pressure Discharge Volume cm^3 (min-max)
AHB	50	1.0	0.2	1:13	65	90 to 360	7 to 28
				1:25	125	94 to 366	3.5 to 14
	100			1:4	20	294 to 1,176	95 to 380
				1:16	80	370 to 1,480	22 to 88
				1:30	150		11 to 44
	160			1:4	20	750 to 3,000	240 to 960
				1:16	80	940 to 3,760	60 to 240
				1:28	140	950 to 3,800	33 to 132

RoHS

Overview

An air-hydro booster is a booster device that converts pneumatic pressure, which is the operating source, into hydraulic pressure several to several tens of times higher using a built-in intensifier with hydraulic fluid. It is particularly convenient as it allows for a two-stage discharge: a low-pressure, large oil volume discharge for fast-feed, and a high-pressure, small oil volume discharge for intensified feed. With a low-cost pneumatic source, it can achieve automation requiring high hydraulic pressure, such as for marking, caulking, and pressing.



Main features

●Converts pneumatic pressure to high hydraulic pressure
High hydraulic pressure can be obtained using only pneumatic pressure.

●Stepless pressure adjustment
Hydraulic pressure can be adjusted steplessly just by adjusting the pneumatic pressure.

●No rise in oil temperature
Since there is no rise in oil temperature, stable operation can be obtained.

●Can switch between fast-feed and intensified feed.
Two-stage discharge for fast-feed and intensified feed can be easily performed with an air directional valve.

●Low air consumption.
For the same output, air consumption is 1/8.

Celcon Cylinder / Celcon Hydro Cylinder

Model No.	Actuation method	Bore Size mm	Standard Stroke (mm)	Max. Stroke mm	Mounting type		Connection Port Rc: Cylinder part	Connection Port Rc: Brake Part	Max. operating pressure MPa: Cylinder part	Max. operating pressure MPa: Brake Part	Min. Operating Pressure MPa: Cylinder part	Min. Operating Pressure MPa: Brake Part
JCC2 JCC2-H	Double Acting	20	20.50	700	Basic type	00	1/8	M5×0.8	0.7	0.6	0.15	0.35
		30	75		Axial Foot Type	LB		1/8				
		40	100		Rod Side Flange Type	FA						
			150		Single Clevis Type	CA						
			200		Head Side Flange Type	TB						
JCC3 JCC3-H	Double Acting	40	50	600	Basic type	00	1/4	1/8	1.0	0.7	0.05	0.3
		50	75		Axial Foot Type	LB	3/8					
		63	100		Rod Side Flange Type	FA		1/4				
		80		700	Head Side Flange Type	FB						
		100	150		Single Clevis Type	CA	1/2	3/8				
		125	200	800	Double Clevis Type	CB						
		140	300		Intermediate Trunnion Type	TC		1/2		1.0	0.1	
		160	400		Rod Side Flange Type	TA	3/4					
		180	500	900	Head Side Flange Type	TB						
PCU2	Double Acting	40	50	600	Basic type	00	1/4		0.2		1.0	
		50	75		Axial Foot Type	LB	3/8					
		63	100		Rod Side Flange Type	FA						
		80		700	Head Side Flange Type	FB						
		100	150		Single Clevis Type	CA	1/2					
			200	800	Double Clevis Type	CB						
			300		Intermediate Trunnion Type	TC						
			400		Rod Side Flange Type	TA						
			500		Head Side Flange Type	TB						

Overview

The CKD Celcon Cylinder is an actuator equipped with a position detection sensor. Its operating principle is that a controller (sold separately) receives pulse signals for the travel distance oscillated from the actuator, compares them with the program input, and freely controls intermediate stops and directional changes. It is an FMS-oriented cylinder with excellent accuracy and flexible control.

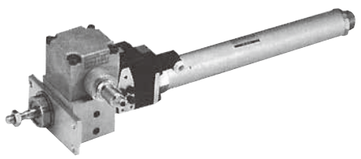
Main features

●Stop Position
Since it has a built-in position detection sensor, it can be stopped intermediately at any position.

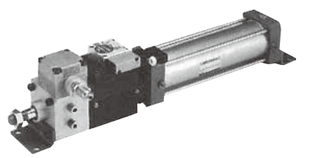
●**Excellent Stopping Accuracy**
The stopping accuracy is excellent, at ±1.0 mm or less at a cylinder speed of 300 mm/s. (at no load).

●High Safety
When the pneumatic source and power supply are OFF (such as during a power outage or accident), the piston rod is locked and operates on the safe side.

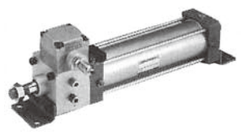
●Strong Holding Force
It has a holding force approximately twice the cylinder thrust (at 0.4 MPa). (JCC3: ø40 to ø180)



JCC2-FA-30



JCC3-LB-63B



PCU2-LB-63B

Standard-Compliant Products, ISO

Listed Page

CE Marking Ending 30

RoHS Compliance Ending 32

ISO9001/ISO14001 Certification Acquisition Ending 34

CE Marking

CKD offers a variety of European standard compliant equipment to support customers in achieving CE Marking for their machinery products.



CE : Displayed on European standard compliant products

What is CE Marking?

- CE Marking is a mark that proves a product conforms to the essential requirements of all applicable EC directives.
- CE marking is a product passport within the EU, and products displaying the CE marking can be freely circulated within the EU.
- Machinery exported to the EU is required to comply with the Machinery Directive, EMC Directive, Low Voltage Directive, etc., but since CE marking is, in principle, mandatory for final products that flow directly to the market, marking on built-in components is not originally required. However, if built-in components (CKD equipment products) are certified for European standards, it makes CE Marking easier for the final product (your machinery product).

Content of Each EC Directive

CKD's main products, such as solenoid valves, sensors, and ABSODEX, are required to conform to the following directives, and many models are European standard compliant.

Directive	Requirements	Applicable
Machinery Directive (2006/42/EC)	Essential safety requirements for machinery	■ Machinery with drive parts Equipment such as solenoid valves are not subject to this, but ensuring compliance with standards makes CE Marking easier for customers.
EMC Directive (2014/30/EU)	Measures for both the generation of electromagnetic disturbance (EMI/emission) and the ability to eliminate electromagnetic disturbance (EMS/immunity)	■ Equipment that generates electromagnetic disturbance or equipment that is affected by electromagnetic disturbance Solenoid valves composed of simple solenoids do not generate electromagnetic disturbance, but ensuring compliance with standards makes CE Marking easier for customers.
Low Voltage Directive (2014/35/EU)	Electrical safety regarding electric shock, etc.	■ Components operating at 50 VAC to 1000 VAC and 75 VDC to 1500 VDC
Simple Pressure Vessels Directive (2014/29/EU)	Safety regarding leakage and explosion of containers	■ Welded containers where the product of maximum operating pressure and volume (PV·S) exceeds 50 bar-liters Our air tanks (AT type) do not conform, so they cannot be exported to the EU.
RoHS Directive (2011/65/EU)	Restriction of 6 environmentally hazardous substances	■ Electrical/Electronic Equipment
2011/65/EU and (EU) 2015/863	Restriction of 10 environmentally hazardous substances	■ Electrical/Electronic Equipment

The countries to which CE marking applies are EU (European Union) member states, EFTA (European Free Trade Association) member states, and Turkey.

CKD's Compliance with European Standard Compliant Products

⚠Compliant products may not be available depending on the specification and detailed model number combination; for details, please contact our sales representative. For the latest information, please visit our website.
Home Page Address https://www.ckd.co.jp/en/productinfo/eu/

CKD RoHS Compliance

At CKD, our theme is the development of environmentally friendly products.

RoHS

RoHS is the abbreviation for Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment. This is the directive prohibiting use of certain hazardous substances issued by the EU.



- ◆CKD products are approved as in conformity to RoHS directive in order of priority from July 1, 2006.
- ◆RoHS-compliant products are designed to reduce environmental load and can be distributed in the EU countries.

Environmental Policy

Based on the CKD Environmental Policy established in 2001, our company is engaged in environmental management system activities company-wide to protect the global environment.

CKD's Environmental Policy

1. Promote development and sales of low environmental load
2. Clarify and comply with the requirements of environmental laws and regulations, and promote the realization of carbon neutrality and the prevention of environmental pollution.
   a) Reduce CO_2 emissions b) Promote resource conservation
   c) Reduce waste d) Reduce environmental pollutants

Response to RoHS of CKD

For our main equipment products, we have been progressively implementing RoHS compliance since July 2006. This catalog indicates RoHS-compliant products with the "RoHS-compliant" mark.

(Note) For the latest compliance status, please check our website.

Technical Data

RoHSDirective

(Directive 2011/65/EU of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

This directive assimilates laws related to limiting the use of hazardous substances in electrical and electronics components set forth by each EU member state, contributes to the protection of human health, and provides sufficient means for processing and recycling waste electrical and electric products.

1 Scope of Application

1. Large household electrical appliances
2. Small appliances
3. IT Components and Telecommunications Components
4. Civilian Components
5. Lighting Components
6. Electric tools
7. Toys, leisure goods and sports components
8. Medical components, in-vitro diagnostics components
9. Monitoring and control components, industrial monitoring and control equipment
10. Vending machines
11. Other electrical and electronic equipment not falling into the above categories

Our components products mainly correspond to category 9, industrial monitoring and control equipment. (Some medical devices in Category 8 and non-applicable products also exist)

2 Directive Contents

Regulated substances (2011/65/EU)
- Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs)
- Polybrominated diphenyl ethers (PBDE)

Additional regulated substances ((EU) 2015/863)
- Specific phthalates (DEHP, DBP, BBP, DIBP)

Electrical and electronic equipment containing the above substances, products in Categories 8 and 9, will not be able to be brought into the EU from July 22, 2021, and other categories from July 22, 2019, in principle.

Regarding ISO9001/ISO14001 Certification Acquisition

We deliver reliable quality that is gentle to people, machines, and the environment.

CKD has obtained ISO 9001 and ISO 14001 certification and established a quality and environmental management system. With safety, the environment, and energy saving as our primary themes, our entire company is dedicated to creating safe, reliable products and quality that pose no harm to people, machinery, society, or the global environment.




ISO 9001
マネジメントシステム登録証
CKD株式会社
JGA


ISO 14001
マネジメントシステム登録証
CKD株式会社
JGA

MEMO

MEMO

Ending

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
HS	Fluid Actuated Valve for Gas Combustion System	1024
HSV	(SV) Manual Valve/Standard	RJ-012AA

■Listed Page
This is the specification/model number page for models listed in this catalog.

■Listed Catalog No.

RJ-002AA ... Pneumatic Cylinder ①
RJ-003AA ... Pneumatic Cylinder ②
RJ-004AA ... Pneumatic Cylinder ③
RJ-005AA ... Pneumatic Cylinder ④
RJ-006AA ... Pneumatic Cylinder ⑤
RJ-007AA ... Air Preparation, Pressure Control, and Auxiliary Components
RJ-008AA ... Sensors/Controllers
RJ-009AA ... Main Line Equipment/Gas Generators
RJ-010AA ... Precision Components/Vacuum Components
RJ-011AA ... Directional Control Valve ①
RJ-012AA ... Directional Control Valve ②
RJ-013AA ... Fluid Control Valve
RJ-014AA ... Electric Actuator ROBODEX Pluse
RJ-015AA ... Electric Actuator ROBODEX Std.
RJ-016AA ... Dry Fine Equipment
CB-019SAA ... Indexman General
CB-031AA ... Wet Fine Equipment General
CB-054AA ... ABSODEX General
CB-055AA ... Electric Actuator Motorless General
CC-1055AA ... Life Science Equipment
CC-1276AA ... Outdoor Products WP Series
CC-1590AA ... Gas Combustion System
CC-1637AA ... Pharmaceutical Manufacturing Process Equipment
CC-297AA ... Automatic Watering Control Equipment

Others list the single item catalog No. for each series.

■Symbols

(SV)...Single Valve (WR)…Wiring Reduced Manifolds (IM) …Individual Manifold
(MX)...Mixed Manifold (BM)…Block Manifolds (MN)…Manifold

Model No.	Model Name	Catalog No./Page
1		
1219	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1238	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1326	Heavy Duty Air Filter	RJ-007AA
1126-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
1126-□-E	Air Filter	RJ-007AA
1138-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
1138-□-E	Air Filter	RJ-007AA
1226(J)	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1226(J)-□-X	Micro-mist Separator/Odor Naught Type (For Odor Removal)	RJ-007AA
1238-□-X	Micro-mist Separator/Odor Naught Type (For Odor Removal)	RJ-007AA
1326-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
2		
2215	Regulator	RJ-007AA
2216	Regulator	RJ-007AA
2302 to **2304-□C**	Dial Air Regulator	RJ-007AA
2302 to **2304-□C-R**	Remote Control Dial Air Regulator	RJ-007AA
2415	Reverse Regulator (Built-in Check Valve)	RJ-007AA
2415-P11	Reverse Regulator (Built-in Check Valve)/Ozone Resistant	RJ-007AA
2419	Reverse Regulator (Built-in Check Valve)	RJ-007AA
2619	Regulator	RJ-007AA
2QV	Quick Valve with One-touch Fitting	RJ-007AA
3		
3003E to **3005E**	Lubricator/Economist Type	RJ-007AA
3003E-□C-V	Lubricator/Auto Fill Type	RJ-007AA
3GA1/2/3	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GA1/2/3	Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
3GB1/2	(SV)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-012AA
3GD1/2/3	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GD1/2□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GD1/2□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GE1/2	(SV)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-012AA
3GE1/2□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
3GE1/2□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
3KA1	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3KA1	(SV)Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
3MA0	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3MB0	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3PA1/2	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3PB1/2	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QB1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QE1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QRA1	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3QRB1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QV	Quick Valve with One-touch Fitting	RJ-007AA
4		
4001, 4002	Desiccant Air Dryer/Manual Air Dryer	RJ-009AA
4F0/1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F0/1/2/3	Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4F2/3	(SV)Pilot Operated 5-Port Valve Outdoor Specification	CC-1276AA
4F3□□0EX	(SV)Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F3□□0E	(SV)Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F4/5/6/7	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4F4/5/6/7	Air Operated 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
4F4/5/6/7□□ 0EX	Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F4/5/6/7□□ 0E	Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4GA1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GA1/2/3	Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4GA4	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GB1/2/3	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GB1/2/3	Air Operated 5-Port Valve (Master Valve)/Base Piping	RJ-012AA
4GB4	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GD1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GD1/2/3/4□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4GD1/2/3/4□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4GE1/2/3	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GE1/2/3/4□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
4GE1/2/3/4□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
4KA1/2/3/4	(SV)Pilot Operated 5-Port Valve Direct Piping	RJ-012AA
4KA1/2/3/4	Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4KB1/2/3/4	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4KB1/2/3/4	(SV)Air Operated 4, 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
4SA0	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4SB0	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
5		
5100-4C	Heavy Duty Drain	RJ-009AA
6		
6119-2C	Moisture Indicator	RJ-009AA
A		
A100 to **800-W**	Piping Adapter/Standard White Series	RJ-007AA
A101 to **801-W**	L-type Piping Adapter/Standard White Series	RJ-007AA
A1019	Air Filter	RJ-007AA
A1338	Heavy Duty Air Filter	RJ-007AA
A1338-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
A2-3400	Cryogenic 2-Port Solenoid Valve	RJ-013AA
A2-5201	Direct Acting 2-Port Solenoid Valve (For High Frequency Operation)	RJ-013AA
A2-5202	Pilot Operated 2-Port Solenoid Valve (For High Frequency Operation)	RJ-013AA
A2-5800	Cryogenic 2-Port Solenoid Valve	RJ-013AA
A3019	Lubricator/Economist Type	RJ-007AA
AB21	Direct Acting 2-Port Solenoid Valve (Multilex)	RJ-013AA
AB31	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB31-ZAA	Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AB41	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB41E2	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G2	RJ-013AA
AB41E4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
A		
AB41E4-ZAA	Explosion-proof Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)/d2G4	RJ-013AA
AB41EX2	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/Exd II BT2	RJ-013AA
AB41EX4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AB41-ZAA	Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AB42	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB42E4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AB71	Direct Acting 2-Port Solenoid Valve (Multilex)/Large Bore	RJ-013AA
ABP	Air Booster	RJ-007AA
AD11	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD11E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
AD12	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD12E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD21	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD21E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD21EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
AD22	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD22E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK11	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
ADK11E4	Explosion-proof Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
ADK11-ZAA	Pilot Kick Operated 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
ADK12	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
ADK12E4	Explosion-proof Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK21	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AES (Facilea)	Image Processing Visual Programming Tool	CC-1548AA
AES (Facilea AI)	Image Processing AI Tool	CC-1623AA
AESM (ExiaStudio)	Device Visual Programming Tool	CC-1579AA
AF2	Medium Size Main Line Filter	RJ-009AA
AF30□□	Large Size Main Line Filter (Standard Type)	RJ-009AA
AF40□□	Medium Size Main Line Filter (For Oil-Free)	RJ-009AA
AF50□□	Large Size Main Line Filter (For Oil-Free)	RJ-009AA
AFB-RB	Active Fine Buffer	RJ-010AA
AG3□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AG3□	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG4□E4-Z	Explosion-proof Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)/d2G4	RJ-013AA
AG4□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AG41	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG41E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG41EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AG43	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG43E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG43EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AG44	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG44E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG44EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AGD	Air Operated Valve for Process Gas	CB-035AA
AHB	Air-Hydro Booster	Ending 26
AL	Air Lamp/Logic Valve	RJ-007AA
AM4F0	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
AMD	Air Operated Valve for Chemicals (2-Port)	CB-031AA
AMDS	Air Operated Valve for Chemicals/Integrated Suck-back Type	CB-031AA
AMG	Air Operated Valve for Chemicals (3-Port)	CB-031AA
AMS	Suck-back Valve for Chemicals	CB-031AA
AP11	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP11E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP11E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP11EX2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT2	RJ-013AA
AP11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT4	RJ-013AA
AP12	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP12E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP12E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP21	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP21E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP21EX2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven/ Exd II BT2	RJ-013AA
AP21E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP21EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT4	RJ-013AA
AP22	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP22E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP22E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
APE	Mechanical Pressure Switch	RJ-007AA
APK11	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
APK21	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
APS	Compact Mechanical Pressure Switch	RJ-007AA
ASU	Portable Air Supply Unit	CC-1363AA
AT	Air Tank	RJ-007AA
AVB	Air Operated Valve for High Vacuum	CB-035AA
AX1000T, 2000T, 4000T	Direct Drive Actuator ABSODEX	CB-054AA
AX1R, 2R, 4R	Direct Drive Actuator ABSODEX	CC-1614AA
AX6000M	Direct Drive Actuator ABSODEX	CB-054AA
AX9000TS, TH, MU	Driver for ABSODEX	CB-054AA
AXD	Driver for ABSODEX	CC-1614AA
AZ	Tube Cutter	RJ-007AA
B		
B	Booster	Ending 26
B□P51□	Ⓜ Pilot Operated 2, 3, 5-Port Valve/Metal Base	RJ-012AA
B110 to 820-W	Bracket/For Selex F.R.L/ Standard White Series	RJ-007AA
B2019	Regulator	RJ-007AA
B2019-P11	Regulator/Ozone Resistant	RJ-007AA
B513□	Ⓢⓥ Pilot Operated 3-Port Valve/Sub-base Type	RJ-012AA
B5142	Ⓢⓥ Pilot Operated 5-Port Valve/Sub-base Type	RJ-012AA
B6061	Relief Valve	RJ-007AA
B7019	F.R. Unit	RJ-007AA
BBS-A	Balancer Unit Automatic Pressure Adjustment Type	RJ-005AA
BBS-O	Balancer Unit Fixed Pressure Adjustment Type	RJ-005AA
BHA	Compact Cross Roller Parallel Gripper	RJ-006AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
B		
BHA-FC	Mechanical Gripper	RJ-006AA
BHA-LN	Gripper with Linear Norm Sensor/Cross Roller Parallel Gripper with Sensor	RJ-005AA
BHE	Centering Gripper	RJ-006AA
BHE-LN	Gripper with Linear Norm Sensor/Centering Gripper with Sensor	RJ-005AA
BHG	Compact Cross Roller Parallel Gripper with Rubber Cover	RJ-006AA
BHG-LN	Gripper with Linear Norm Sensor/Cross Roller Parallel Gripper with Rubber Cover and Sensor	RJ-005AA
BN	Air Blow Nozzle General Type	RJ-007AA
BNB	Air Blow Nozzle Blower Specification	RJ-007AA
BNE-F	Air Blow Nozzle Flat Type	RJ-007AA
BNE-R	Air Blow Nozzle Round Type	RJ-007AA
BSA2	Ultra Compact Cross Roller Parallel Gripper	RJ-006AA
BW7019	Filter Regulator/Outdoor Series	CC-1276AA
C		
C1000 to **8000-P6**	F.R.L. Combination/Copper Ion Restricted (No copper/ PTFE Specification)	RJ-007AA
C1000 to **8000-W**	F.R.L. Combination/Standard White Series	RJ-007AA
C1010 to **8010-W**	W.L. Combination/Standard White Series	RJ-007AA
C1020 to **8020-W**	F.R. Combination/Standard White Series	RJ-007AA
C1030 to **8030-W**	F.M.R. Combination/Standard White Series	RJ-007AA
C1040 to **8040-W**	W.M. Combination/Standard White Series	RJ-007AA
C1050 to **8050-W**	R.M. Combination/Standard White Series	RJ-007AA
C1060 to **8060-W**	F.M. Combination/Standard White Series	RJ-007AA
C25N-B	Governor for Medium Pressure Gas	CC-1590AA
C3070 to **8070-W**	F.F.M. Combination/Standard White Series	RJ-007AA
CAC4	Clamp Cylinder/Double Acting, Single Rod Type	RJ-005AA
CAC-N32/40	Lightweight Clamp Cylinder/ Double Acting, Single Rod Type	RJ-005AA
CAT	Cartridge Cylinder/Single Acting, Push Type	703
CAU30	Clean Air Unit	RJ-007AA
CAV2	Cell Cylinder/With Valve, Double Acting, Lubricated Type	RJ-005AA
CAW	Compact Arm	CC-1613AA
CCH	Check Valve for Liquids	RJ-013AA
CCN	Check Valve for Liquids (Nozzle Type)	RJ-013AA
CG	Air Fiber One-touch Fitting (Clean Type)	RJ-007AA
CHB	Air Operated Ball Valve 2-Port (Compact Rotary Valve)	RJ-013AA
CHBF	Air Operated Ball Valve 2-Port (Compact Rotary Valve)/Full Bore	RJ-013AA
CHC	Auto Gripper Changer	RJ-006AA
CHG	Air Operated Ball Valve 3-Port (Compact Rotary Valve)	RJ-013AA
CHL	Check Valve with One-touch Fitting	RJ-007AA
CHV2	Check Valve	RJ-007AA
CK	3-Jaw Long Stroke Chuck	RJ-006AA
CKA	3-Jaw Thin Chuck	RJ-006AA
CKF	Hollow Chuck	RJ-006AA
CKG	3-Jaw Bearing Chuck	RJ-006AA
CKH2	High Gripping Force Powerful Chuck	RJ-006AA
CKJ	Ultra Long Stroke Chuck	RJ-006AA
CKL2	Powerful Chuck	RJ-006AA
CKL2-FC	Mechanical Chuck	RJ-006AA
CKLB2	Bidirectional Powerful Chuck	RJ-006AA
CKS	Thin Chuck	RJ-006AA
CKV2	Compact cylinder with valve/ With Valve, Double Acting, Single Rod Type	RJ-005AA
CKW-HP1	3-Jaw Chuck	RJ-006AA
CKWL-HP1	3-Jaw Chuck	RJ-006AA
CMA2	Small Bore Size Cylinder/ Double Acting, Single Rod Type	RJ-002AA
CMK2	Small Bore Size Cylinder/ Double Acting, Single Rod Type	RJ-002AA
COV□2	Cell Cylinder/With Valve, Double Acting, Lubricated Type	RJ-005AA
CPD	Electronic Pressure Switch for Coolant (with Digital Display)	RJ-008AA
CPE	Mechanical Pressure Switch for Coolant (Low Pressure Type)	RJ-008AA
CSB	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-013AA
CSBF	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-013AA
CV3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)	RJ-013AA
CVE2, CVE22	Air Operated 2-Port Valve (Coolant Valve)	RJ-013AA
CVE3	Air Operated 3-Port Valve (Coolant Valve)	RJ-013AA
CVS3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)/ Solenoid Valve Mounted Type	RJ-013AA
CVSE2, CVSE22	Air Operated 2-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-013AA
CVSE3	Air Operated 3-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-013AA
CXU	Air Unit	RJ-007AA
D		
D101 to **801-W**	Distributor/For Selex F.R.L/ Standard White Series	RJ-007AA
DB1000, 3000	Super Drain	RJ-009AA
DBS1006	Drain Sensor	RJ-009AA
DCKW	Electric Actuator with Motor Specification 3-Finger Gripper Type	RJ-014AA
DLSH	Electric Actuator with Motor Specification D Series 2-Finger Gripper Type	RJ-014AA
DMSDG	Electric Actuator with Motor Specification D Series Compact Guided Type	RJ-014AA
DSC	Speed Controller with Dial	RJ-007AA
DSG	Solenoid Valve for Gas Combustion System	CC-1590AA
DSG-W	Solenoid Valve for Gas Combustion System	CC-1590AA
DSSD2	Electric Actuator with Motor Specification D Series Rod Type	RJ-014AA
DSTG	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTK	Electric Actuator with Motor Specification D Series Stopper Type	RJ-014AA
DSTL	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTS	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DT3000, 3010-W	Snap Drain	RJ-009AA
DT4000, 4010-W	Snap Drain	RJ-009AA
DVL	Needle Valve with Dial	RJ-007AA
E		
E0, ET0	Cylinder Switch/Heat Resistant, Reed 2-wire	898
ECS	Electric Actuator Motorless Specification Slider	CB-055AA
ETS	Electric Actuator Motorless Specification Slider	CB-055AA
EBS-L	Electric Actuator Motorless Specification Slider	CB-055AA
EBS-G, -M	Electric actuator Motor specification Slider	RJ-014AA
EBR-L	Electric Actuator Motorless Specification Rod	CB-055AA
EBR-G, -M	Single Axis Controller for Electric Actuator	RJ-014AA
ECG	Single Axis Controller for Electric Actuator	RJ-014AA
ECMG	Multi Axis Controllers for Electric Actuators	RJ-014AA
ECR	Single Axis Controller for Electric Actuator	RJ-014AA
ECV	Electric Actuator Motorless Specification Slider type (belt drive/low dust specifications)	CB-055AA
EH	Fiber Tube Clean-room Type (For push-in fitting)	RJ-007AA
EKS-L	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	CB-055AA
EKS-M	Electric Actuator with Motor Specification Slider Type	CC-1457AA
EMB21, 41, 51	Metal-free 2-Port Solenoid Valve	RJ-013AA
EJSG	Electric Actuator with Motor Specification Slider Type	RJ-014AA
ESC4	Single Axis Controller for Electric Actuator	RJ-014AA
ESM	Electric Shuttle Mover (Belt Driven)	CC-1259AA
ETS	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	CB-055AA
ETV	Electric Actuator Motorless Specification Slider Type (Belt Driven)	CB-055AA
EV2100V, 2109V	Electro-Pneumatic Regulator/ Solenoid Valve Type Vacuum Compatible	RJ-007AA
EVR	Electro-Pneumatic Regulator/ Solenoid Valve Type Medium Flow	RJ-007AA
EVB□17	Electric Vacuum Valves	CB-035AA
EVD	Digital Electro-Pneumatic Regulator	RJ-007AA
EVL	Low Pressure Electro-Pneumatic Regulator	RJ-007AA
EVS2	Electro-Pneumatic Regulator/ Solenoid Valve Type Compact	RJ-007AA
EVT	Low Profile Electro-Pneumatic Regulator/Single Unit	RJ-007AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
E		
EXA	Pilot Operated 2-Port Solenoid Valve for Compressed Air	RJ-013AA
ExiaStudio (AESM)	Device Visual Programming Tool	CC-1579AA
F		
F□	Soft nylon tube	RJ-007AA
F0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	894
F1000 to **8000-P6**	Air Filter/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
F1000 to **8000-W**	Air Filter/Standard White Series	RJ-007AA
F2S, F3S	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	894
F2, 3V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	894
F3PH/V	Cylinder Switch/PNP Output Type Solid State 3-wire	894
F2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	894
F3000 to **8000-G4**	Air Filter/Flame Resistant Series	RJ-007AA
FA□	Ultra Compact Joint/ Adjustable Socket	RJ-007AA
FA331 to **831**	Exhaust Cleaner	RJ-007AA
FAC	Clean Exhaust Filter	RJ-007AA
Facilea (AES)	Image Processing Visual Programming Tool	CC-1548AA
Facilea AI (AES)	Image Processing AI Tool	CC-1623AA
FAW	Flex Arm	CC-1615AA
FBS	Ultra Compact Joint/Bushing	RJ-007AA
FBU2	Fine Buffer	RJ-010AA
FC□	Ultra Compact Joint/Clamp Fitting	RJ-007AA
FCD	Flat Cylinder Compact Demi/ Double Acting, Single Rod Type	846
FCH	Flat Cylinder Compact Demi/ Single Acting, Retracting Type	836
FCK	Shock Absorber, Adjustable Type	RJ-005AA
FCM	Compact Flow Controller Rapiflow	RJ-008AA
FCS	Flat Cylinder Compact Demi/ Single Acting, Push Type	836
FCS1000	Inline Clean Filter	RJ-007AA
FCS500	Inline Clean Filter	RJ-007AA
FFB	Direct Acting 2-Port Solenoid Valve Multi-fit	RJ-013AA
FFBM	Direct Acting 2-Port Solenoid Valve Multi-fit	RJ-013AA
FFG	Direct Acting 3-Port Solenoid Valve Multi-fit	RJ-013AA
FFGM	Direct Acting 3-Port Solenoid Valve Multi-fit	RJ-013AA
FFLD	Electric Actuator with Motor F Series 2-Finger Gripper Type (Built-in Controller)	RJ-014AA
FGRC	Electric Actuator with Motor F Series Rotary Type	RJ-014AA
FGS	Ultra Compact Joint/Gasket	RJ-007AA
FH100	Feather Gripper (Mini Parallel Gripper)	RJ-006AA
FH500	Feather Gripper (Mini Pivot Gripper)	RJ-006AA
FJ	Free Joint	RJ-005AA
FK	Simple Flow Controller	RJ-005AA
FLCR	Electric Actuator with Motor F Series Table Type	RJ-014AA
FLS	Ultra Compact Joint/ Extension	RJ-007AA
FLSH	Electric Actuator with Motor F Series 2-Finger Gripper Type	RJ-014AA
FM□	Ultra Compact Joint/Manifold	RJ-007AA
FM3000 to **8000**	Air Filter/Medium Pressure Series	RJ-007AA
FMD	Flow Control Valve	CB-031AA
FMS	Metering Valve with Silencer	RJ-007AA
FNS	Ultra Compact Joint/Double Nipple	RJ-007AA
FPL	Ultra Compact Joint/Plug	RJ-007AA
FPV	Block Valve	RJ-007AA
FS□	Ultra Compact Joint/Socket	RJ-007AA
FSL100	Inline Filter	RJ-007AA
FSL200	Inline Filter	RJ-007AA
FSL500	Inline Filter	RJ-007AA
FSM2-D	Compact Flow Sensor Rapiflow	RJ-008AA
FSM3	Compact Flow Sensor Rapiflow	RJ-008AA
FSM-V	Ultra Compact Flow Sensor Rapiflow	RJ-008AA
FSM-V-D	Separate Display Unit Rapiflow	RJ-008AA
FSM-VFM	Compact Flow Sensor/Inline Filter	RJ-008AA
FSM-X	Ultra Compact Flow Switch Rapiflow	RJ-008AA
FT□	Ultra Compact Joint/Barb Fitting	RJ-007AA
FWD	Compact Pilot Operated Solenoid Valve for Water	RJ-013AA
FWS	Ultra Compact Joint/Partition Wall	RJ-007AA
FW4000, 8000	Air Filter/Outdoor Series	CC-1276AA
FX	Drain Separator	RJ-007AA
G		
G29D	Ultra Compact Pressure Gauge	RJ-007AA
G39D	Round Pressure Gauge	RJ-007AA
G401-W	Thin Pressure Gauge	RJ-007AA
G40D	Pressure Gauge with Safety Mark	RJ-007AA
G45D	Pressure Gauge with Limit Mark	RJ-007AA
G49D, 59D	General Purpose Pressure Gauge	RJ-007AA
G49D, 59D-P6	Pressure Gauge/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
G52D	Pressure Gauge with Switch	RJ-007AA
G53D	Pressure Gauge for Panel Mount	RJ-007AA
GA400	Differential Pressure Gauge	RJ-007AA
GAB312/352	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB312/352-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAB412	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB412-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAB422	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB452	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB452-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG31□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG31□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG33□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG33□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG34□	Direct Acting 3-Port Solenoid Valve Actuator (Multilex)	RJ-013AA
GAG34□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Actuator (Multilex)	RJ-013AA
GAG35□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG35□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG41□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG41□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG43□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG43□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG44□	Direct Acting 3-Port Solenoid Valve Actuator (Multilex)	RJ-013AA
GAG44□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Actuator (Multilex)	RJ-013AA
GAG45□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG45□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAMD	Air Operated Valve for Chemicals (Manifold/Branch Valve)	CB-031AA
GCKW	Electric Actuator with Motor G Series 3-Finger Gripper Type	RJ-014AA
GCVE2	Modular Coolant Valve Air Operated Type	RJ-013AA
GCVSE2	Modular Coolant Valve Solenoid Valve Mounted Type	RJ-013AA
GEXA	Pilot Operated 2-Port Solenoid Valve Manifold with One-touch Fittings for Compressed Air	RJ-013AA
GFM	Float Star	RJ-010AA
GHV	Gas Combination Valve	CC-1590AA
GLC	Guideless Cylinder/Double Acting Type	RJ-005AA
GMF1	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ①	RJ-012AA
GMF1	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ①	RJ-012AA
GMF2	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ②	RJ-012AA
GMF2	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ②	RJ-012AA
GMFZ	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ① & ②	RJ-012AA
GMFZ	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ① & ②	RJ-012AA
GMMD	Manual Valve Manifold for Chemicals	CB-031AA
GNAB□	Air Operated 2-Port Valve Manifold (Compact Cylinder Valve)	RJ-013AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
G		
GNAD□	Diaphragm Cylinder Valve Manifold	RJ-013AA
GPS2	Seating Confirmation Switch/ Single Unit	RJ-008AA
GPS3	Digital Gap Switch/Single Unit	RJ-008AA
GRC	Table Type Rotary Actuator/ Basic Type	RJ-005AA
GRV	Medium Pressure Gas Combination Valve	CC-1590AA
GSSD2	Electric Actuator with Motor G Series Rod Type	RJ-014AA
GSTG	Electric Actuator with Motor G Series Guided Type	RJ-014AA
GSTK	Electric Actuator with Motor G Series Stopper Type	RJ-014AA
GSTL	Electric Actuator with Motor G Series Guided Type	RJ-014AA
GSTS	Electric Actuator with Motor G Series Guided Type	RJ-014AA
GSV	Solenoid Valve for Automatic Watering Control	CC-297AA
GSV2	Solenoid Valve for Automatic Watering Control	CC-297AA
GT9000	Refrigerated Air Dryer/	RJ-009AA
GW49D	Outdoor Pressure Gauge	CC-1276AA
GW	New Joint	RJ-007AA
GX3200D	Refrigerated Air Dryer/ Compact For Equipment Installation, Standard Inlet Air (35°C) Type	RJ-009AA
GX5200D	Refrigerated Air Dryer/ Compact For Direct Compressor Connection, High Inlet Air (55°C) Type	RJ-009AA
H		
H0	Cylinder Switch/1-Color Indicator, Reed	896
H0Y	Cylinder Switch/2-Color Indicator, Reed	896
HAP-1C	Parallel Gripper	RJ-006AA
HAP-2 to **4CS**	Parallel Gripper	RJ-006AA
HB	High Corrosion Resistance Direct Acting 2-Port Solenoid Valve	RJ-013AA
HBL	Pivot Gripper	RJ-006AA
HCA	High Speed Cylinder/Double Acting, Single Rod Type	RJ-005AA
HCM	High Energy Absorption Cylinder/Double Acting, Single Rod Type	RJ-005AA
HCP	Horizontal Parallel Gripper	RJ-006AA
HD-0.5 to **9**	Desiccant Air Dryer/Compact Heatless Dryer	RJ-009AA
HDL	Wide Angle Gripper	RJ-006AA
HFP	Crab Type Parallel Gripper	RJ-006AA
HGP	Long Stroke Parallel Gripper	RJ-006AA
HJL	Toggle Gripper	RJ-006AA
HK1	Fluid Actuated Valve for Gas Combustion System	CC-1590AA
HKP	Cross Roller Parallel Gripper	RJ-006AA
HLA	Thin Parallel Gripper	RJ-006AA
HLB	Thin Parallel Gripper	RJ-006AA
HLC	Thin Long Stroke Parallel Gripper	RJ-006AA
HLD	Ultra Thin Parallel Gripper	RJ-006AA
HLF2	Thin Long Stroke Gripper	RJ-006AA
HMD	Thin Wide Angle Gripper	RJ-006AA
HMC-HP1	Wide Parallel Gripper	RJ-006AA
HMF	Compact Wide Parallel Gripper	RJ-006AA
HMFB	Large Crab Type Parallel Gripper with LM Guide	RJ-006AA
HMTB1	Metal-free Compact Lever Type 2-Port Solenoid Valve for Medical Equipment	CC-1055AA
HMTG1	Metal-free Compact Lever Type 3-Port Solenoid Valve for Medical Equipment	CC-1055AA
HMV	ⓈⓋManual Valve/Miniature	RJ-012AA
HMVE	ⓈⓋManual Valve/Miniature	RJ-012AA
HNB1	Compact Direct Acting 2-Port Solenoid Valve	RJ-013AA
HNG1	Compact Direct Acting 3-Port Solenoid Valve	RJ-013AA
HO	Worm Reducer	CC-1601AA
HPS	Adhesion Confirmation Switch/Single Unit	RJ-008AA
HRL-1	Hybrid Robot/Single Axis Unit Element for Pneumatic Robot	RJ-005AA
HS	Fluid Actuated Valve for Gas Combustion System	CC-1590AA
HSV	ⓈⓋManual Valve/Standard	RJ-012AA
HSVE	ⓈⓋManual Valve/Standard	RJ-012AA
HVB□12	High Vacuum Solenoid Valve	RJ-013AA
HVL12	Delayed Vacuum Solenoid Valve	RJ-013AA
HYA	Fine Pinch Valve	CC-1055AA
HYN	Direct Acting 2, 3-Port Valve (Fine Pinch Valve)	CC-1055AA
I		
IAGD□	Integrated Gas Supply System	CB-035AA
IAVB	Vacuum Pressure Control System	CB-035AA
J		
J100 to **800-W**	Joiner/For Selex F.R.L/ Standard White Series	RJ-007AA
JL	Fitting (Elbow Joint)	RJ-007AA
JSB3	Brake Unit	RJ-005AA
JSC3(-N) JSC4(-N)	Brake Cylinder (Medium/ Large Bore)/Double Acting, Single Rod Type	RJ-005AA
JSG	Tie Rod Cylinder with Brake/ Double Acting, Single Rod Type	RJ-005AA
JSK2	Brake Cylinder (Small Bore ø20 to 40, Crimped Type)/ Double Acting Type	RJ-005AA
JSM2	Brake Cylinder (Small Bore ø20 to 40, Serviceable Type)/ Double Acting Type	RJ-005AA
K		
K0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	892
K2, 3 V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	892
K2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	892
K3P V/H	Cylinder Switch/PNP Output Type, Solid State 3-wire	892
K5V/H	Cylinder Switch/No Indication, Reed 2-wire	892
K60570	F.R.L. Kit	RJ-007AA
KBX	Electric Actuator with Motor Specification Slider Type Rod Type R-Axis Type	CC-1275AA
KCA	Controller	CC-1275AA
KHE	SCARA Robot	CC-1436AA
KHL	SCARA Robot	CC-1436AA
KML	Fine Level Switch	CB-031AA
KX	Coiling Tube	RJ-007AA
KZV3	Pilot Operated 2-Port Solenoid Valve	RJ-013AA
L		
L1000 to **8000-W**	Lubricator/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
L1000 to **8000-W**	Lubricator/Standard White Series	RJ-007AA
LAD	Diaphragm Cylinder Valve	RJ-013AA
LBC	Air Bearing Actuator	RJ-010AA
LCG	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCM	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCR	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCW	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCX	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LFC-KL	Lifter Cylinder	CC-902AA
LGD	Air Operated Valve for Process Gas	CB-035AA
LHA	Linear Guide Gripper	RJ-006AA
LHAG	Linear Guide Gripper with Rubber Cover	RJ-006AA
LMB	Linear Guide Lock	RJ-005AA
LML	Linear Guide Lock	RJ-005AA
LN	Cylinder with Linear Norm Sensor/Sensor, Amplifier, Indicator	RJ-005AA
LSH	Linear Slide Gripper	RJ-006AA
LSH-HP1	Linear Slide Gripper	RJ-006AA
LSHL-HP1	Linear Slide Gripper	RJ-006AA
LSHM-HP2	Linear Slide Gripper with Length Measurement Function	RJ-006AA
LST-HP1	Thin Long Stroke Gripper	RJ-006AA
LSTM-HP2	Thin Long Stroke Gripper with Length Measurement Function	RJ-006AA
LW4000/ LW8000	Lubricator Outdoor Series	CC-1276AA
LYX	Air Operated Valve for Chemicals	CB-031AA
M		
M0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	880
M1000 to **8000-P6**	Oil Mist Filter/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
M1000 to **8000-W**	Oil Mist Filter/Standard White Series	RJ-007AA
M2, 3V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	880
M2, 3WV	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	880
M3GA1/2/3	ⓂPilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	ⓌⓇPilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M3GB1/2	ⓂPilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GB1/2	ⓌⓇPilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GD1/2/3	ⓂPilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GD1/2/3	ⓌⓇPilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GD1/2□ 0EJ	ⓂIntrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3GD1/2□ 0EX	ⓂIntrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3GE1/2	ⓂPilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GE1/2	ⓌⓇPilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GE1/2□ 0EJ	ⓂIntrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
M		
M3GE1/20EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
M3KA1	Ⓜ Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3KA1	ⓂⓃ Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M3MA0	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3MB0	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3P V/H	Cylinder Switch/1-Color Indicator, PNP Output Type, Solid State 3-wire	880
M3PA1/2	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3PB1/2	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QB1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QE1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QZ1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QRA	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3QRB	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M4F0/1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F0/1/2/3	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4F3□□0EX	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F3□0E	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F4/5/6/7	Ⓜ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4F4/5/6/7	Air Operated 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
M4F4/5/6/7□0EX	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4F4/5/6/7□0E	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4GA1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA1/2/3	ⓌⓇ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA1/2/3	Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4GA4	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA4	ⓌⓇ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GB1/2/3	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB1/2/3	ⓌⓇ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB1/2/3	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Base Piping	RJ-012AA
M4GB4	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB4	ⓌⓇ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GD1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GD1/2/3	ⓌⓇ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GD1/2/3/40EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4GD1/2/3/40EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4GE1/2/3	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GE1/2/3	ⓌⓇ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GE1/2/3/40EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
M4GE1/2/3/40EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
M4KA1/2/3/4	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4KA1/2/3/4	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4KB1/2/3/4	Ⓜ Pilot Operated 4, 5-Port Valve/Sub-plate Piping	RJ-012AA
M4KB1/2/3/4	ⓂⓃ Air Operated 4, 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
M4SA0	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4SB0	Ⓜ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
M4SB0	ⓌⓇ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
M512□	ⓈⓋ Pilot Operated 2-Port Valve/Direct Type	RJ-012AA
M513□	ⓈⓋ Pilot Operated 3-Port Valve/Direct Type	RJ-012AA
M5V/H	Cylinder Switch/No Indication, Reed 2-wire	880
MAB1/MAG1	Metal-free 2-Port Solenoid Valve	CC-1055AA
MAVL	Large Mechanical Valve/Detector	RJ-007AA
MCP	Mechanical Power Cylinder	RJ-005AA
MD	Multi Monitor	RJ-008AA
MDC2	Compact Direct Cylinder/Double Acting, Single Rod Type	713
MDV	Compact Direct Cylinder	CC-905AA
MEB2/MEG2	Metal-free 2-Port Solenoid Valve	CC-1055AA
MEVT	Thin Electro-Pneumatic Regulator/Wiring-saving Manifold Type	RJ-007AA
MGD	Manual Valve for Process Gas	CB-035AA
MGPS2	Seating Confirmation Switch/Manifold	RJ-008AA
MGPS3	Digital Gap Switch/Manifold	RJ-008AA
MHB4	Miniature Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MHG4	Miniature Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MHPS	Adhesion Confirmation Switch/Manifold	RJ-008AA
MJB3	Metal-free Direct Acting 2-Port Solenoid Valve	CC-1055AA
MJL□	Compression Joint/Elbow Type	RJ-007AA
MJN□	Compression Joint/Sleeve	RJ-007AA
MJS□	Compression Joint/Straight Type	RJ-007AA
MJT□	Compression Joint/Tee Type	RJ-007AA
MJU□	Compression Joint/Insert Ring	RJ-007AA
MKB3	Metal-free 2-Port Solenoid Valve	CC-1055AA
MKML	Fine Level Switch Manifold	CB-031AA
MM	Medium Mechanical Valve/Detector	RJ-007AA
MM3000 to 8000	Oil Mist Filter/Medium Pressure Series	RJ-007AA
MMD	Manual Valve for Chemicals	CB-031AA
MN3E0	ⓌⓇ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN3E00	ⓌⓇ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN3GA1/2	Ⓜ, ⒷⓂ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GA1/2	ⓌⓇ, ⒷⓂ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GAX12	ⓌⓇ, ⓂⓍ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GB1/2	Ⓜ, ⒷⓂ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GB1/2	ⓌⓇ, ⒷⓂ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GD1/2	Ⓜ, ⒷⓂ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GD1/2	ⓌⓇ, ⒷⓂ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GDX12	ⓌⓇ, ⓂⓍ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GE1/2	Ⓜ, ⒷⓂ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GE1/2	ⓌⓇ, ⒷⓂ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3Q	ⓌⓇ Direct Acting 3-Port Valve	RJ-012AA
MN4E0	ⓌⓇ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN4E00	ⓌⓇ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN4EX0	ⓌⓇ/ⓂⓍ Pilot Operated 4-Port Valve	RJ-011AA
MN4GA1/2	Ⓜ/ⒷⓂ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GA1/2	ⓌⓇ/ⒷⓂ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GAX12	ⓌⓇ/ⓂⓍ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GB1/2	Ⓜ/ⒷⓂ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GB1/2	ⓌⓇ/ⒷⓂ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GBX12	ⓌⓇ/ⓂⓍ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GD1/2	Ⓜ/ⒷⓂ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GD1/2	ⓌⓇ/ⒷⓂ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GDX12	ⓌⓇ/ⓂⓍ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GE1/2	Ⓜ/ⒷⓂ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GE1/2	ⓌⓇ/ⒷⓂ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GEX12	ⓌⓇ/ⓂⓍ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4KB1/2	ⒷⓂ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
MNRB500	Block Manifold Regulator	RJ-007AA
MNRB500-P11	Block Manifold Regulator/Ozone Resistant	RJ-007AA
MNRJB500	Block Manifold Compact Direct Acting Precision Regulator	RJ-007AA
MNV	Flow Control Valve	CB-031AA
MR10R	Metal-free Compact 2, 3-Port Solenoid Valve	CC-1055AA
MR16	Metal-free Compact 2, 3-Port Solenoid Valve	CC-1055AA
MRG2	Magnet Type Rodless Cylinder/Double Acting Type	RJ-005AA
MRL2	Magnet Type Rodless Cylinder/Basic Type	RJ-005AA
MS	Compact Mechanical Valve/Detector	RJ-007AA
MSB1□	Electric Ball Valve 2-Port for Steam (Motor Valve)	RJ-013AA
MSD	Compact Cylinder/Double Acting, Single Rod Type	785
MSDG-L	Compact Cylinder/Double Acting, Guided Type, with Switch	RJ-004AA
MTLPS	Tool Breakage Detection Switch/Manifold	RJ-008AA
MV3QRA	3QR Negative Pressure Switching Unit Direct Piping	RJ-012AA
MV3QRB	3QR Negative Pressure Switching Unit Sub-plate Piping	RJ-012AA
MXKML	Fine Level Switch Manifold	CB-031AA
MVB	Manual Valve for High Vacuum	CB-035AA
MVC	Compact Cylinder with Vacuum Pad/Double Acting, Single Rod Type	RJ-005AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
N		
MW3GA2	Ⓜ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MW3GA2	Ⓦ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MW4GA2	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GA2	Ⓦ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GB2	Ⓜ Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB2	Ⓦ Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	Ⓜ Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	Ⓦ Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GZ2	Ⓜ Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ2	Ⓦ Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	Ⓜ Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	Ⓦ Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4000, 8000	Oil Mist Filter/Outdoor Series	CC-1276AA
MWD	Wear Type Diaphragm Valve	CC-1637AA
MX1000 to **8000-W**	High Performance Oil Mist Filter/Standard White Series	RJ-007AA
MXB1□	Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXB1D-N	Electric Oil-free Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXB1F	Electric Ball Valve 2-Port (Motor Valve)/Full Bore	RJ-013AA
MXB1-N	Electric Oil-free Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXBC2	Proportional Control Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXG1□	Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXG1D-N	Electric Oil-free Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXG1-N	Electric Oil-free Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXGC2	Proportional Control Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MYB□	Metal-free 2-Port Solenoid Valve	CC-1055AA
MYG□	Metal-free 3-Port Solenoid Valve	CC-1055AA
N		
N□P51□	ⒷⓂ Pilot Operated 2, 3, 5-Port Valve/Block Manifold	RJ-012AA
NAB□	Air Operated 2-Port Valve Single Unit (Compact Cylinder Valve)	RJ-013AA
NAD□	Diaphragm Cylinder Valve	RJ-013AA
NAP11	Air Operated 3-Port Valve	RJ-012AA
NCK	Shock Absorber, Fixed Type	RJ-005AA
NHS-H	New Handling System/Z-axis Module HRL	RJ-005AA
NHS-S	New Handling System/Z-axis Module STL-B	RJ-005AA
NP13R/14R	Internal Pilot Operated 3-Port Valve Solenoid Valve Mounted Type	RJ-012AA
NPV2	Direct Air Pressure Automatic Pinch Valve	RJ-013AA
NS	Nitrogen Extraction Unit/Unit Type	RJ-009AA
NSU	Nitrogen Extraction Unit/ System Type	RJ-009AA
NSR	New Handling System/X-axis Module	RJ-005AA
NU	New Urethane Tubing	RJ-007AA
NVP11R	Air Operated 3-Port Valve/ Solenoid Valve Mounted Type	RJ-012AA
NX4	ABSODEX	CC-1456AA
NXD	Driver	CC-1456AA
O		
OGD	Manual Valve for Process Gas	CB-035AA
OMC2	Sequential Controller for Pulse Jet Valve (Pulse Jet Controller)	RJ-013AA
P		
P1100-W	Reed Switch Type Mechanical Compact Pressure Switch	RJ-007AA
P4000-W	Mechanical Pressure Switch/ Standard White Series	RJ-007AA
P4100-W	Reed Switch Type Mechanical Compact Pressure Switch	RJ-007AA
P512□	Ⓢⓥ Pilot Operated 2-Port Valve/Pilot Type	RJ-012AA
P513□	Ⓢⓥ Pilot Operated 3-Port Valve/Pilot Type	RJ-012AA
P5142	Ⓢⓥ Pilot Operated 5-Port Valve/Pilot Type	RJ-012AA
P8100-W	Reed Switch Type Mechanical Compact Pressure Switch	RJ-007AA
PAW	Powerful Arm	CC-1418AA
PCC	Pin Clamp Cylinder Double Acting, Single Rod Type	RJ-005AA
PCIS/PCOS	Parallel cam unit	CB-019SAA
PD2	For dust collector Pilot Operated 2-Port Air Operated Valve	RJ-013AA
PD3	For dust collector Pilot Operated 2-Port Air Operated Valve	RJ-013AA
PDV2	Pilot Operated 2-Port Valve with Solenoid for Dust Collector	RJ-013AA
PDV3	Pilot Operated 2-Port Valve with Solenoid for Dust Collector	RJ-013AA
PDVE4	Explosion-proof 2-Port Solenoid Valve for Dust Collector (Explosion-proof Pulse Jet Valve)	RJ-013AA
PE	Pressure Switch/Logic Valve	RJ-007AA
PFD	Flow Sensor for Compressed Air/Separate Display Type Flurex	RJ-008AA
PG	Air Fiber One-touch Fitting (Standard Type)	RJ-007AA
PGM	Regulator for Process Gas	CB-035AA
PG-P2-B	Blank Plug	RJ-007AA
PJVB	Box Type Manifold Solenoid Valve for Operation (2-Port Solenoid Valve for Pulse Jet Control)	RJ-013AA
PKA	Pilot Kick Operated 2-Port Solenoid Valve for Air	RJ-013AA
PKS	Pilot Kick Operated 2-Port Solenoid Valve for Steam	RJ-013AA
PKW	Pilot Kick Operated 2-Port Solenoid Valve for Water	RJ-013AA
PLE-B12	Side Block/Integrated Type	RJ-007AA
PLJ-C12	YES Element/Relay Type	RJ-007AA
PLK-A11	OR Element/Line Type	RJ-007AA
PLK-B12	OR Element/Integrated Type	RJ-007AA
PLK-C12	OR Element/Relay Type	RJ-007AA
PLL-A11	AND Element/Line Type	RJ-007AA
PLL-B12	AND Element/Integrated Type	RJ-007AA
PLL-C12	AND Element/Relay Type	RJ-007AA
PLM	Memory Element/Relay Type	RJ-007AA
PLN-B12	NOT Element/Integrated Type	RJ-007AA
PLN-C12	NOT Element/Relay Type	RJ-007AA
PLN-D12	Threshold Element/Relay Type	RJ-007AA
PMM	Fine Regulator	CB-031AA
PMP	Fine Regulator	CB-031AA
PNA	Oxygen Concentration Meter	RJ-009AA
PPD3	Electronic Pressure Switch/ Sensor/Amplifier Integrated Type with Display	RJ-008AA
PPD3-S	Electronic Pressure Switch, Stainless Steel Diaphragm Sensor Type/Sensor/Amplifier Integrated Type with Display	RJ-008AA
PPE	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display	RJ-008AA
PPE-□A	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display, Analog Output Type	RJ-008AA
PPEV-□A	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display, Analog Output Type	RJ-008AA
PPG-D	Electronic Pressure Sensor with Digital Display	RJ-008AA
PPLX	Linear Pick & Place Unit	CB-019SAA
PPR	Electronic Pressure Sensor with Digital Display	RJ-008AA
PPX	Digital Pressure Sensor	RJ-008AA
PRD	Amplifier/Elements and Sensors	RJ-007AA
PRE-A12	Pressure Switch/Relay Type	RJ-007AA
PRF-A2	Booster/Elements and Sensors	RJ-007AA
PRS-A12	Solenoid Valve/Relay Type	RJ-007AA
PRT	Timer/Relay Type	RJ-007AA
PSD	Sequencer Branch Block	RJ-007AA
PSE	Sequencer Input/Output Block	RJ-007AA
PSL	Sequencer AND Element	RJ-007AA
PSM	Sequencer Element	RJ-007AA
PSV	Sequencer Sub-base V-Type	RJ-007AA
PTN2	Dedicated Fitting for Air Fiber	RJ-007AA
PV5	Ⓢⓥ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ①	RJ-012AA
PV5G	Ⓢⓥ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ①	RJ-012AA
PV5S-0	ISO Compliant Master Valve	RJ-012AA
PVP	Precision Suction Plate	RJ-010AA
PVS	Pilot Operated 2-Port Solenoid Valve	RJ-013AA
PWS	Threshold Sensor	RJ-007AA
PXB-B3	Push Button Switch/Switch Body/Separate Type	RJ-007AA
PXC-K	Limit Switch	RJ-007AA
PXC-M	Miniature Limit Switch	RJ-007AA
PXC-M	Compact Limit Switch	RJ-007AA
PXD	Proximity Sensor/Elements and Sensors	RJ-007AA
PXF	Limit Sensor/Elements and Sensors	RJ-007AA
PXV	Air Lamp	RJ-007AA
PYM	Fine Regulator	CB-031AA
PZM	Mounting Bracket/Line Type	RJ-007AA
PZU	Sub-base/Input Block/Relay Type Sub-base	RJ-007AA
Q		
QEL	Quick Exhaust Valve	RJ-007AA
QEV2	Quick Exhaust Valve	RJ-007AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
R		
R0, 3, 4, 6	Cylinder Switch/1-Color Indicator, Reed 2-wire	882
R1, 2	Cylinder Switch/1-Color Indicator, Solid State 2-wire	882
R1000 to **8000-P11**	Regulator/Ozone Resistant	RJ-007AA
R1000 to **8000-P6**	Regulator/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
R1000 to **8000-W**	Regulator/Standard White Series	RJ-007AA
R1100 to **8100-P11**	Reverse Regulator/Ozone Resistant	RJ-007AA
R1100 to **8100-P6**	Reverse Regulator/Copper Ion Restricted (No copper/ PTFE Specification)	RJ-007AA
R1100 to **R8100-W**	Reverse Regulator/Standard White Series	RJ-007AA
R2, 3Y	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	882
R3000 to **8000-G4**	Regulator/Flame Resistant Series	RJ-007AA
R3100 to **8100-G4**	Reverse Regulator/Flame Resistant Series	RJ-007AA
R5	Cylinder Switch/No Indication, Reed 2-wire	882
RA800	Compact Regulator/Compact Piston Type	RJ-007AA
RB500	Compact Regulator	RJ-007AA
RB500-P11	Compact Regulator/Ozone Resistant	RJ-007AA
RC2000	Clean Regulator	RJ-007AA
RCC2	Rotary Clamp Cylinder Double Acting, Single Rod Type	RJ-005AA
RCKL	Gripper for Collaborative Robot 3-Jaw Type	RJ-006AA
RCS2	Rotary Clamp Cylinder (Single Guide Type) Double Acting, Single Rod Type	RJ-005AA
RG	One-touch Fitting for Air Fiber (Flame Resistant Type)	RJ-007AA
RHLF	Gripper for Collaborative Robot Long Stroke Type	RJ-006AA
RJB500	Compact Direct Acting Precision Regulator	RJ-007AA
RJF	Rotary Joint	RJ-007AA
RLSH	Gripper for Collaborative Robot Compact Type	RJ-006AA
RM3000, 4000	Regulator/Medium Pressure Series	RJ-007AA
RN3000 to **8000**	Oil-free Regulator	RJ-007AA
RP1000	Precision Regulator	RJ-007AA
RPE1000	Precision Regulator	RJ-007AA
RP2000	Precision Regulator	RJ-007AA
RRC	Selex Rotary/Rack & Pinion Type	RJ-005AA
RS-6	Rain Sensor for Automatic Watering Control	CC-297AA
RSC	Automatic Watering Controller	CC-297AA
RSV	Solenoid Valve for Automatic Watering Control	CC-297AA
RT	Remote I/O	RJ-011AA
RTD-3A	Air Timer/Logic Valve	RJ-007AA
RW4000, 8000	Regulator/Outdoor Series Outdoor Series	CC-1276AA
RV3□	Selex Rotary/Vane Type	RJ-005AA
RVC	Shock Absorber	RJ-005AA
S		
SAB□□	Air Operated 2-Port Valve (Cylinder Valve)	RJ-013AA
SAL	Compact Air Lamp/Logic Valve	RJ-007AA
SC1	Speed Controller/Medium Bore Type	RJ-007AA
SC-20A to **50A**	Speed Controller/Large Bore Type	RJ-007AA
SC3P	Speed Controller/Stainless Steel Corrosion Resistant Type	RJ-007AA
SC3R	Speed Controller/Direct Port Connection, Elbow Type	RJ-007AA
SC3U	Speed Controller/Universal Type with One-touch Fitting	RJ-007AA
SC3W	Speed Controller/Elbow Type with One-touch Fitting	RJ-007AA
SCA2	Medium Bore Size Cylinder (Medium Bore ø40 to 100)/ Double Acting, Single Rod Type	RJ-002AA
SCD	Speed Controller/Ultra Compact In-Out Type	RJ-007AA
SCD2	Speed Controller/In-Out Line Type with One-touch Fitting	RJ-007AA
SCG	Tie Rod Cylinder/Double Acting, Single Rod Type	RJ-002AA
SCK	Shock Absorber, Adjustable Type	RJ-005AA
SCL2	Speed Controller/Line Type with One-touch Fitting	RJ-007AA
SCL2-N	Needle Valve/Line Type with One-touch Fitting	RJ-007AA
SCM	Round shaped cylinder/ Double Acting, Single Rod Type	RJ-002AA
SC-M3/ M5(-F)	Speed Controller/Ultra Compact	RJ-007AA
SCPD3	Pencil Shaped Cylinder/ Double Acting, Single Rod Type	RJ-002AA
SCPH3	Pencil Shaped Cylinder/ Single Acting, Retracting Type	RJ-002AA
SCPS	Pencil Shaped Cylinder/ Single Acting, Push Type	RJ-002AA
SCPS3	Pencil Shaped Cylinder/ Single Acting, Push Type	RJ-002AA
SCS2	Medium Bore Size Cylinder (Large Bore ø125 to 250)/ Double Acting, Single Rod Type, Lubricated Type	RJ-002AA
SD301, 302D	Membrane Air Dryer/Single Unit	RJ-009AA
SD301, 302E	Membrane Air Dryer/Single Unit	RJ-009AA
SD3015 to **3075**	Membrane Air Dryer/Single Unit	RJ-009AA
SD401, 402D	Membrane Air Dryer/Single Unit	RJ-009AA
SD401, 402E	Membrane Air Dryer/Single Unit	RJ-009AA
SD4050 to **4100**	Membrane Air Dryer/Single Unit	RJ-009AA
SDM4050 to **4100**	Membrane Air Dryer/Super Dryer Modular Series (Large Size)	RJ-009AA
SFC□	Antibacterial/Germ-removing Filter	RJ-007AA
SFS10	Germ-removing Filter/Inline Type	RJ-007AA
SFR/SFRT	Super Fan Rotary	CC-984AA
SFX	Siloxane/Ozone Remover	RJ-007AA
SHD	Desiccant Air Dryer/Medium/ Large Heatless Dryer	RJ-009AA
SHV2	Shuttle Valve	RJ-007AA
SKAC	Contact Protection Circuit Box (For AC Circuit)	RJ-002, 003, 004, 005, 006
SKDC	Contact Protection Circuit Box (For DC Circuit)	RJ-002, 003, 004, 005, 006
SKH	Shockless Valve	RJ-012AA
SKL	Shock Absorber	RJ-005AA
SL	Silencer/Metal Body Type	RJ-007AA
SLM	Silencer/Ultra Compact Type	RJ-007AA
SLW	Silencer/Small Bore, Resin Body Type	RJ-007AA
SM-25	Shuttle Mover Standard Type/ High Load Type	RJ-005AA
SMG	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
SMW	Metering Valve with Silencer	RJ-007AA
SMW2	Metering Valve with Silencer	RJ-007AA
SNP	3-Port Solenoid Valve with Spool Position Detection Function	RJ-007AA
SNS	Residual Pressure Exhaust Valve with Spool Position Detection Function	RJ-007AA
SP	Thin Pilot Operated 2-Port Solenoid Valve for Compressed Air	RJ-013AA
SPD	Poppet Type Diaphragm Valve	CC-1637AA
SPK	Pilot Kick Operated 2-Port Solenoid Valve for Steam	RJ-013AA
SR	Flame Resistant Tubing	RJ-007AA
SRG3	High Precision Guided Rodless Cylinder (Single Guide)/Double Acting Type	RJ-005AA
SRL3	Rodless Cylinder/Double Acting Type	RJ-005AA
SRM3	High Precision Guided Rodless Cylinder (Double Guide)/Double Acting Type	RJ-005AA
SRT3	Rodless Cylinder with Brake/ Double Acting Type	RJ-005AA
SSD	Compact Cylinder/Double Acting, Single Rod Type	349
SSD2	Compact Cylinder/Double Acting, Single Rod Type	3
SSD-LN	With Linear Norm Sensor	RJ-005AA
SSG	Guided Compact Cylinder/ Double Acting, Single Rod Type	329
STG	Guided Cylinder/Double Acting, Single Rod Type	RJ-004AA
STK	Stopper Cylinder/Double Acting, Round Rod End Type	RJ-005AA
STL-□	Guided Cylinder (Long Stroke Type)/Double Acting, Single Rod Type	RJ-004AA
STM-M/B	Guided Cylinder, Double Acting/Single Rod Type	RJ-004AA
STR2-□	Twin Rod Cylinder Double Acting/Single Rod Type	RJ-004AA
STS-□	Guided Cylinder (Short Stroke) Double Acting/Single Rod Type	RJ-004AA
SU301, 302D	Membrane Air Dryer/Unit	RJ-009AA
SU301, 302E	Membrane Air Dryer/Unit	RJ-009AA
SU3015 to **3075**	Membrane Air Dryer/Unit	RJ-009AA
SU401, 402D	Membrane Air Dryer/Unit	RJ-009AA
SU401, 402E	Membrane Air Dryer/Unit	RJ-009AA
SU4050, 4100	Membrane Air Dryer/Unit	RJ-009AA
SVB□□	Air Operated 2-Port Valve Solenoid Valve Mounted Type (Cylinder Valve)	RJ-013AA
SWD	Wear Type Diaphragm Valve	CC-1637AA
T		
T0V/H/C	Cylinder Switch/1-Color Indicator, Reed 2-wire	884
T0Y	Magnetic Field Resistant Cylinder Switch Reed 2-wire type	890
T1 V/H	Cylinder Switch/1-Color Indicator, Solid State 2-wire	884

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
T		
T2 V/H R	Cylinder Switch/Flexible Shielded Cable Type, Solid State 2-wire	884
T2, 3 V/H/C	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	884
T2, 3YL V/H	Cylinder Switch/Solid State 2/3-wire for Cutting Oil	885
T2J V/H	Cylinder Switch/Off-delay Type, Solid State 2-wire	884
T2YD(T)	Cylinder Switch/Solid State 2-wire for Strong Magnetic Fields	885
T2WL V/H	Cylinder Switch/Improved Water Resistance, Solid State 2-wire	888
T3P V/H	Cylinder Switch/PNP Output Type, Solid State 3-wire	884
T5V/H/C	Cylinder Switch/No Indication, Reed 2-wire	884
T8 V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	884
TAC-25	Medium Pressure Gas Safety Shutoff Control System	CC-1590AA
TGX	Torque Guard	CC-1601AA
TLPS	Tool Breakage Detection Switch/Single Unit	RJ-008AA
TSF	Torque Saver	CC-1601AA
TVG	Plug-in Block Manifold	RJ-011AA
U		
U	Urethane Tubing	RJ-007AA
UB	Lock Unit	RJ-005AA
UCA2	Unit Cylinder/Double Acting, Single Rod, Plain Bearing Type	RJ-004AA
UCAC2	Clamp Cylinder with Fall Prevention Double Acting/Single Rod Type	RJ-005AA
UCAC-N32/40	Lightweight Clamp Cylinder/ With Fall Prevention, Double Acting, Single Rod Type	RJ-005AA
UFCD	Flat Cylinder with Free Position Drop Prevention Double Acting/Single Rod Type	RJ-005AA
UGPS2	Seating Confirmation Switch/ Unit	RJ-008AA
UGPS3	Digital Gap Switch/Unit	RJ-008AA
UHPS	Adhesion Confirmation Switch/Unit	RJ-008AA
ULK	Brake Cylinder/Double Acting, Single Rod Type	RJ-005AA
UMB1	For medical components High Corrosion Resistance Ultra Compact Direct Acting 2-Port Solenoid Valve for Medical Equipment	CC-1055AA
UMG1	For medical components High Corrosion Resistance Ultra Compact Direct Acting 3-Port Solenoid Valve	CC-1055AA
UP	Air Fiber Antistatic Type (For One-touch Fittings)	RJ-007AA
UP-□□-F1/ F2	Antistatic Tubing	RJ-007AA
UP-9102-20-□-F1	Air Fiber Antistatic Type	RJ-007AA
UP-9102-SR	Flame Resistant Air Fiber (For One-touch Fittings)	RJ-007AA
US	Compact Direct Acting 2, 3-Port Solenoid Valve (Resin Body Type)	RJ-013AA
USB□	Compact Direct Acting 2-Port Solenoid Valve	RJ-013AA
USC	Medium Bore Size Cylinder with Free Position Fall Prevention/Double Acting, Single Rod Type	RJ-005AA
USG□	Compact Direct Acting 3-Port Solenoid Valve	RJ-013AA
USSD	Compact Cylinder with Drop Prevention/Double Acting, Single Rod Type	RJ-005AA
UTLPS	Tool Breakage Detection Switch/Unit	RJ-008AA
V		
V0	Cylinder Switch, Cylinder Switch/Compact Reed 2-wire for Strong Magnetic Fields	897
V1000, 3000-W	Residual Pressure Exhaust Valve/Standard White Series	RJ-007AA
V3010, 6010-W	Residual Pressure Release Valve with key hole with Keyhole, OSA Compliant	RJ-007AA
V3301, 3321-W	Slow Start Valve	RJ-007AA
VFA1000 to 4000	Vacuum Filter	RJ-010AA
VG	Vacuum Generator	CB-035AA
VG41D	Vacuum Pressure Gauge with Limit Mark	RJ-007AA
VLA	Solenoid Valve for Gas Combustion System	CC-1590AA
VLM	Shutoff Valve for Medium Pressure Gas Safety Shutoff Control	CC-1590AA
VNA	Solenoid Valve for Gas Combustion System	CC-1590AA
VNA-R/RH	Solenoid Valve for Gas Combustion System	CC-1590AA
VNM	Shutoff Valve for Medium Pressure Gas Safety Shutoff Control	CC-1590AA
VNM-25-K	Safety Shutoff Valve (Fire Safety Enhanced Specification)	CC-1590AA
VNR	Solenoid Valve for Gas Combustion System (Normally Closed when energized)	CC-1590AA
VRA2000	Vacuum Regulator	RJ-010AA
VSB	Ejector System/Square Type	RJ-010AA
VSC	Ejector System/Pad Direct Mount Type	RJ-010AA
VSECV	Vacuum Related Equipment/ Fall Prevention Valve	RJ-010AA
VSFB	Vacuum Related Equipment/ Large Capacity Union Type Vacuum Filter	RJ-010AA
VSFJ	Vacuum Related Equipment/ Compact Socket Type Vacuum Filter	RJ-010AA
VSFU	Vacuum Related Equipment/ Compact Union Type Vacuum Filter	RJ-010AA
VSG	Ejector System/20 mm Width Single Unit Dedicated Type	RJ-010AA
VSH	Ejector System/Solenoid Valve Direct Mount Type	RJ-010AA
VSJ/VSJM	Ejector System/20 mm Width General Type	RJ-010AA
VSJP/ VSJPM	Vacuum Pump System/20 mm Width General Type	RJ-010AA
VSK/VSKM	Ejector System/16 mm Width General Type	RJ-010AA
VSLF	Vacuum Related Equipment/ Vacuum Break Unit	RJ-010AA
VSN/VSNM	Ejector System/10.3 mm Width General Type	RJ-010AA
VSNP/ VSNPM	Vacuum Pump System/10.3 mm Width General Type	RJ-010AA
VSP	Suction Pad	RJ-010AA
VSQ	Ejector System/31.5 mm Width Single Unit Dedicated Type	RJ-010AA
VSQP	Vacuum Pump System/31.5 mm Width General Type	RJ-010AA
VSRVV	Vacuum Related Equipment/ Compact Vacuum Regulator	RJ-010AA
VST	Vacuum Related Equipment/ Air Tweezers	RJ-010AA
VSU	Ejector System/Pipe Type	RJ-010AA
VSUS	Vacuum Related Equipment/ Vacuum Pressure Switch	RJ-010AA
VSX/VSXM	Ejector System/10.5 mm Width General Type	RJ-010AA
VSXP/ VSXPM	Vacuum Pump System/10.5 mm Width General Type	RJ-010AA
VSY	Ejector System/Vacuum Break Function Type	RJ-010AA
VSZM	Ejector System/11 mm Pitch Manifold Dedicated Type	RJ-010AA
VSZPM	Vacuum Pump System/11 mm Pitch Manifold Dedicated Type	RJ-010AA
W		
W1000 to 8100-P11	Filter Regulator/Ozone Resistant	RJ-007AA
W1000 to 8000-P6	Filter Regulator/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
W1000 to 8000-W	Filter Regulator/Standard White Series	RJ-007AA
W1100 to 8100-P11	Reverse Filter Regulator/ Ozone Resistant	RJ-007AA
W1100 to 8100-P6	Reverse Filter Regulator/ Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
W1100 to 8100-W	Reverse Filter Regulator/ Standard White Series	RJ-007AA
W2P513□	Ⓢ Pilot Operated 5-Port Valve/Double Type	RJ-012AA
W3000 to 8000-G4	Filter Regulator/Flame Resistant Series	RJ-007AA
W3100 to 8100-G4	Reverse Filter Regulator/ Flame Resistant Series	RJ-007AA
W4GB2	Ⓢ Pilot Operated 3, 5-Port Valve/Base Piping	RJ-011AA
W4GB4	Ⓢ Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
W4GZ4	Ⓢ Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
WB500	Compact Filter Regulator	RJ-007AA
WFC	Capacitance Electromagnetic Flow Sensor	RJ-008AA
WFK2	Karman Vortex Type Liquid Flow Sensor Flurex	RJ-008AA
WFK3000	Karman Vortex Type Water Flow Sensor Flurex	RJ-008AA
WR1 / 2	Regulator for Water	RJ-007AA
WW4000, 8000	Filter Regulator/Outdoor Series Outdoor series	CC-1276AA
WXU	Water Manifold Unit	RJ-008AA
Y		
YS	Y-type Strainer	RJ-013AA
Z		
ZB4-B	Switch Head	RJ-007AA
ZCK	Rotary Type Head Lever Actuator	RJ-007AA
ZRS	Roller Gear Cam Unit	CC-1601AA
ZSP	New Joint Stainless Steel Type	RJ-007AA
ZW	New Joint Stainless Steel Type	RJ-007AA

Products by Application

-FP□	For Food Manufacturing Process	CC-1271AA
-HP□	High Durability Equipment	CC-1421AA
-P4□	For Rechargeable Battery Manufacturing Process	CC-1226AA
-P5□	For Clean Components	CB-033SAA
-P6	Copper Ion Restricted (No copper/PTFE Specification)	RJ-001AA
-P7□	For Clean Components	CB-033SAA
-P8□	For Clean Components, Oil-free Treatment	CB-033SAA
-P9□	For Clean Components, Oil-free Treatment	CB-033SAA
-P11	Ozone Resistant	RJ-001AA
-P12	Oil-free Compatible	RJ-001AA
-W□	For Outdoor Use	CC-1276AA

Pneumatic Cylinders② General Type —— Catalog No. RJ-003AA

Date of issue: November 15, 2024 1st edition

Publisher **CKD Corporation**
2-250 Ouji, Komaki, Aichi 485-8551, Japan
https://www.ckd.co.jp/en/

©**CKD Corporation** 2025 Printed in Japan
Reproduction Prohibited
Specifications and appearance published in this catalog are subject to change without notice for improvement.

VEGETABLE OIL INK Uses environmentally friendly “Vegetable Oil Ink”.

CKD WARRANTY

Subject to the conditions below, CKD Corporation ("CKD") warrants the first end user (the "Buyer") that CKD's products are free from defects in material and workmanship.

"Warranty Period" is one (1) year from the first delivery to the customer.

CKD will, at CKD's option, either repair or replace a defective product, including lowest transportation costs but not including installation or any other similar charges, provided that (1) the buyer notifies CKD in writing of the claimed defect within one year from the date Buyer received the product, (2) provides a complete explanation of the defect, the application of the product, and such other information concerning use of the product as CKD may request, and (3) returns the product to CKD in accordance with CKD's specific written instructions and authorization obtained from CKD prior to return of the product, and CKD's inspection confirms that the product was defective.

This warranty applies only if the product was used and applied correctly under normal operating conditions and good engineering practice; was installed, operated and maintained in accordance with all instructions issued or published by CKD; was used within stated pressure, media and operating limitations published by CKD and in effect on the date of shipment; and was not subject to abuse, misuse or unauthorized modification.

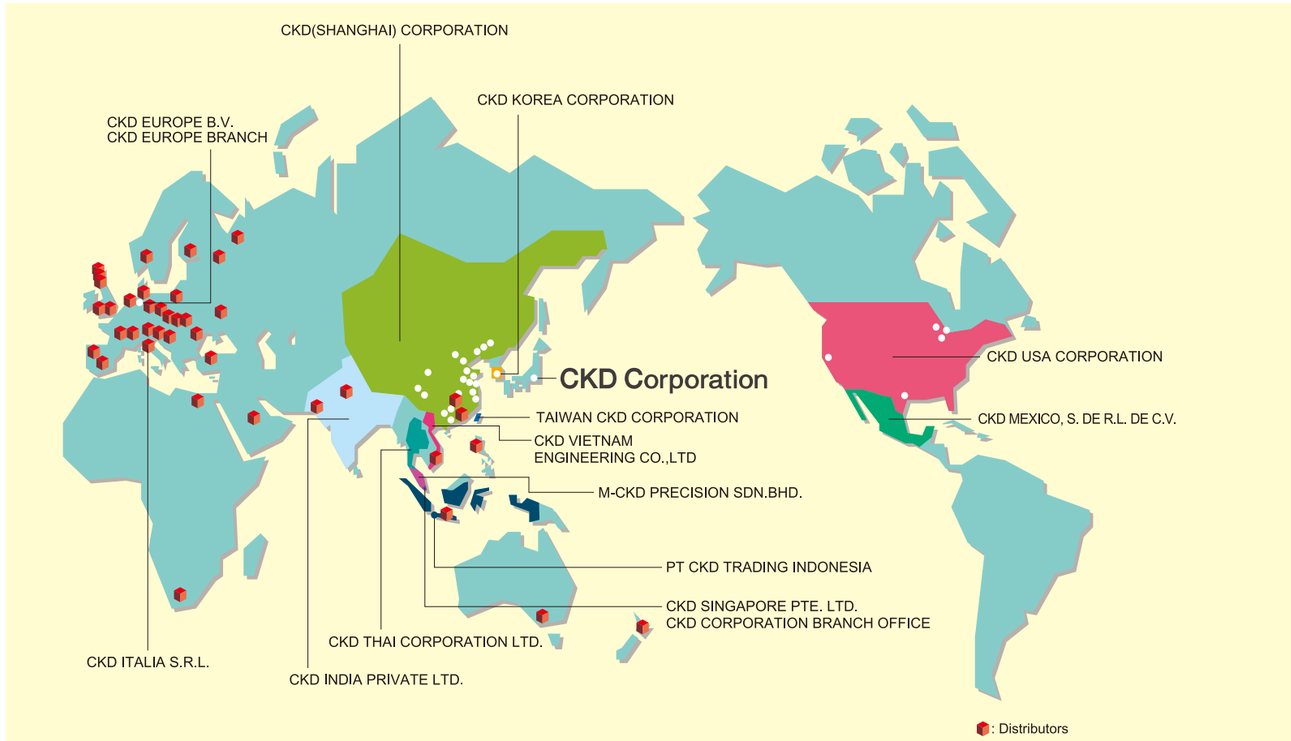
THIS WARRANTY IS THE ONLY AUTHORIZED CKD WARRANTY AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPILIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, notwithstanding any disclosure to CKD of the use to which the product is to be put. The Buyer's **SOLE AND EXCLUSIVE REMEDY** on any claim of any kind for any loss or damage arising out of the manufacture, sale, delivery or use of CKD's products shall be for the repair or replacement of any defective products as provided herein.

IN NO EVENT SHALL CKD BE LIABLE FOR BUSINESS INTERRUPTIONS, LOSS OF PROFITS, PERSONAL INJURY, COSTS OF DELAY OR FOR ANY OTHER SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSSES, COSTS OR DAMAGES. There are no warranties, expressed or implied, made by CKD other than the warranty against defects in material and workmanship set forth above, and CKD neither assumes nor authorizes any other person or firm to assume for it any other obligations or liability.

CKD shall not be liable for any trouble, malfunction and damages of CKD products caused, directly or indirectly, by disaster or any other causes not attributable to CKD's responsibility. CKD also shall not be responsible for any trouble, malfunction and damages of CKD Products caused by the lack or malfunction of safety circuit or structure or function that should be commonly equipped in the Buyer's equipment in which the CKD products were used.

CKD MAINTAINS A POLICY OF ONGOING PRODUCT DEVELOPMENT AND INPROVEMENT. WE THEREFORE RESERVE THE RIGHT TO CHANGE DIMENSIONS, SPECIFICATIONS AND DESIGN WITHOUT NOTICE.

WORLD-NETWORK



CKD Corporation

Website https://www.ckd.co.jp/en/

2-250 Ouji, Komaki City, Aichi 485-8551, Japan
PHONE +81-568-74-1338 FAX +81-568-74-1165

ASIA

喜開理(上海)機器有限公司
CKD(SHANGHAI)CORP.
- 本社/上海徐匯支店(SALES HEADQUARTERS / SHANGHAI XUHUI BRANCH OFFICE)
  Room 612, 6th Floor, Yuanzhongkeyan Building, No. 1905 Hongmei Road, Xuhui District, Shanghai 200233, China
  PHONE +86-21-61911888 / 60906048
- 上海浦東支店(SHANGHAI PUDONG BRANCH OFFICE)
- 寧波支店(NINGBO BRANCH OFFICE)
- 杭州支店(HANGZHOU BRANCH OFFICE)
- 無錫支店(WUXI BRANCH OFFICE)
- 昆山支店(KUNSHAN BRANCH OFFICE)
- 蘇州支店(SUZHOU BRANCH OFFICE)
- 常州支店(CHANGZHOU BRANCH OFFICE)
- 南京支店(NANJING BRANCH OFFICE)
- 合肥支店(HEFEI BRANCH OFFICE)
- 成都支店(CHENGDU BRANCH OFFICE)
- 武漢支店(WUHAN BRANCH OFFICE)
- 鄭州支店(ZHENGZHOU BRANCH OFFICE)
- 長沙支店(CHANGSHA BRANCH OFFICE)
- 重慶支店(CHONGQING BRANCH OFFICE)
- 西安支店(XIAN BRANCH OFFICE)
- 広州支店(GUANGZHOU BRANCH OFFICE)
- 深圳支店(SHENZHEN BRANCH OFFICE)
- 東莞支店(DONGGUAN BRANCH OFFICE)
- 厦門支店(XIAMEN BRANCH OFFICE)
- 福州支店(FUZHOU BRANCH OFFICE)
- 惠州支店(HUIZHOU BRANCH OFFICE)
- 瀋陽支店(SHENYANG BRANCH OFFICE)
- 大連支店(DALIAN BRANCH OFFICE)
- 北京支店(BEIJING BRANCH OFFICE)
- 天津支店(TIANJIN BRANCH OFFICE)
- 青島支店(QINGDAO BRANCH OFFICE)
- 済南支店(JINAN BRANCH OFFICE)

CKD INDIA PRIVATE LTD.
- HEADQUARTERS
  Unit No. 607, 6th Floor, Welldone Tech Park, Sector 48, Sohna Road, Gurgaon-122018, Haryana, India
  PHONE +91-124-418-8212
- BANGALORE OFFICE
- PUNE OFFICE
- CHENNAI OFFICE
- MUMBAI OFFICE
- HYDERABAD OFFICE

PT CKD TRADING INDONESIA
- HEAD OFFICE
  Menara Bidakara 2, 18th Floor, Jl. Jend. Gatot Subroto Kav. 71-73, Pancoran, Jakarta 12870, Indonesia
  PHONE +62-21-2938-6601 FAX +62-21-2906-9470
- MEDAN OFFICE
- BEKASI OFFICE
- KARAWANG OFFICE
- SEMARANG OFFICE
- SURABAYA OFFICE

CKD KOREA CORP.
- HEADQUARTERS
  (3rd Floor), 44, Sinsu-ro, Mapo-gu, Seoul 04088, Korea
  PHONE +82-2-783-5201~5203 FAX +82-2-783-5204
- 水原事務所(SUWON OFFICE)
- 天安事務所(CHEONAN OFFICE)
- 蔚山事務所(ULSAN OFFICE)

M-CKD PRECISION SDN.BHD.
- HEAD OFFICE
  Lot No.6,Jalan Modal 23/2, Seksyen 23, Kawasan MIEL, Fasa 8, 40300 Shah Alam,Selangor Darul Ehsan, Malaysia
  PHONE +60-3-5541-1468 FAX +60-3-5541-1533
- JOHOR BAHRU BRANCH OFFICE
- PENANG BRANCH OFFICE

CKD SINGAPORE PTE. LTD.
No.33 Tannery Lane #04-01 Hoesteel Industrial Building, Singapore 347789, Singapore
PHONE +65-67442623 FAX +65-67442486

CKD CORP. BRANCH OFFICE(ASEAN RHQ)
No.33 Tannery Lane #04-01 Hoesteel Industrial Building, Singapore 347789, Singapore
PHONE +65-67447260

CKD THAI CORP. LTD.
- HEADQUARTERS
  44, Smooth Life Tower, 19th Floor, Unit 1902, North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand
  PHONE +66-2-267-6300 FAX +66-2-267-6304-5
- NAVANAKORN OFFICE
- EASTERN SEABOARD OFFICE
- LAMPHUN OFFICE
- KORAT OFFICE
- AMATANAKORN OFFICE
- PRACHINBURI OFFICE
- SARABURI OFFICE

台湾喜開理股份有限公司
TAIWAN CKD CORP.
- HEADQUARTERS
  16F-3, No. 7, Sec. 3, New Taipei Blvd., Xinzhuang Dist., New Taipei City 242, Taiwan
  PHONE +886-2-8522-8198 FAX +886-2-8522-8128
- 新竹営業所(HSINCHU OFFICE)
- 台中営業所(TAICHUNG OFFICE)
- 台南営業所(TAINAN OFFICE)
- 高雄営業所(KAOHSIUNG OFFICE)

CKD VIETNAM ENGINEERING CO.,LTD.
- HEADQUARTERS
  18th Floor, CMC Tower, Duy Tan Street, Cau Giay District, Hanoi, Vietnam
  PHONE +84-24-3795-7631 FAX +84-24-3795-7637
- HO CHI MINH OFFICE

EUROPE

CKD EUROPE B.V.
- HEADQUARTERS
  Beechavenue 125A, 1119 RB Schiphol-Rijk, the Netherlands
  PHONE +31-23-554-1490
- CKD EUROPE GERMANY OFFICE
- CKD EUROPE UK
- CKD EUROPE CZECH O.Z.

CKD CORP. EUROPE BRANCH(EUROPE RHQ)
Beechavenue 125A, 1119 RB Schiphol-Rijk, the Netherlands
PHONE +31-23-554-1490

CKD ITALIA S.R.L.
- HEADQUARTERS
  Via di Fibbiana 15 Calenzano (FI) CAP 50041, Italy
  PHONE +39 0558825359 FAX +39 0558827376
- MILANO OFFICE

NORTH AMERICA & LATIN AMERICA

CKD MEXICO, S. DE R.L. DE C.V.
Cerrada la Noria No. 200 Int. A-01, Querétaro Park II, Parque Industrial Querétaro, Santa Rosa Jáuregui, Querétaro, C.P. 76220, México
PHONE +52-442-161-0624

CKD USA CORP.
- HEADQUARTERS
  1605 Penny Lane, Schaumburg, IL 60173, USA
  PHONE +1-847-648-4400 FAX +1-847-565-4923
- LEXINGTON OFFICE
- SAN JOSE OFFICE/ TECHNICAL CENTER
- AUSTIN OFFICE

Pneumatic Cylinders ②

Space-Saving Types

CKD Corporation

https://www.ckd.co.jp/en/