CKD

Electric Actuators

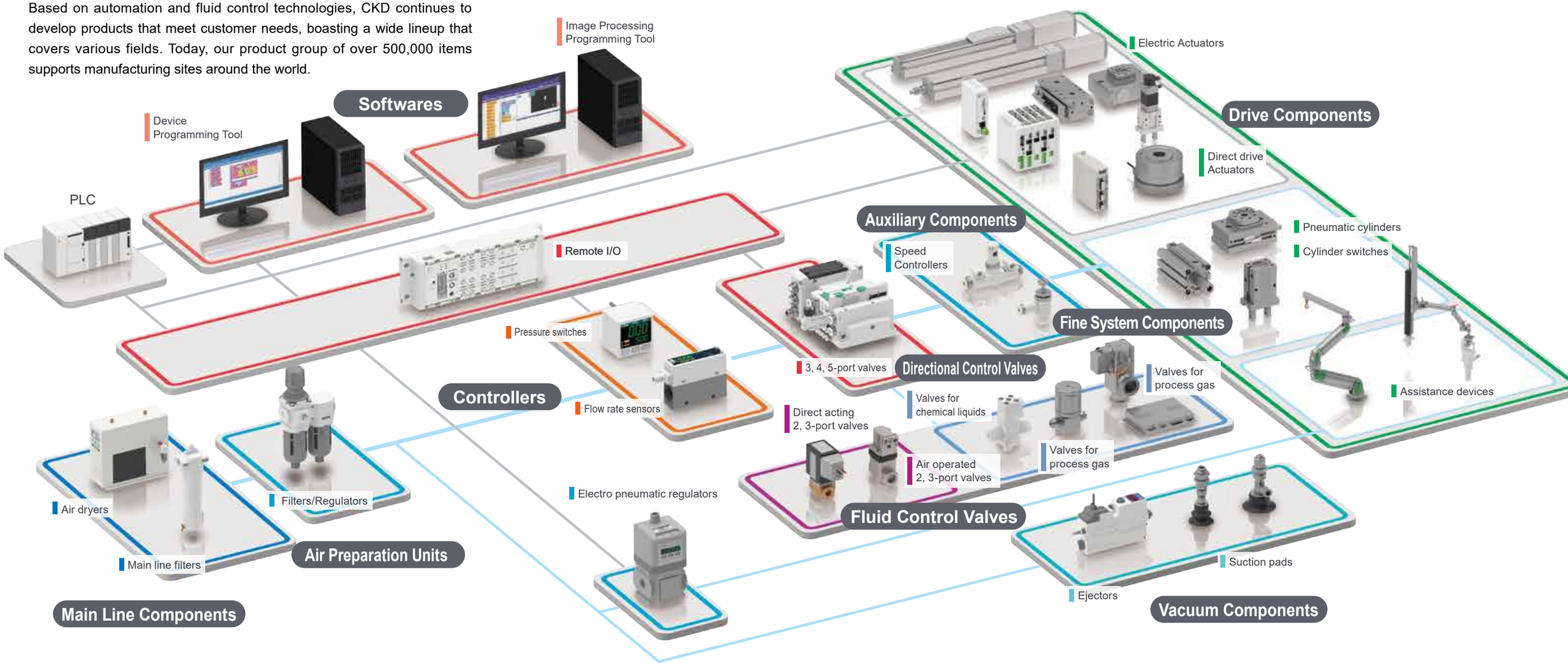
ROBODEX *Pulse*

- Sliders
- Rods
- Grippers
- Tables
- Rotary
- Guided
- Stoppers
- Controllers

CKD Products by Configuration Image

Both Pneumatic and Electric. From Software to

CKD's ever-expanding product line contributes to global manufacturing. Based on automation and fluid control technologies, CKD continues to develop products that meet customer needs, boasting a wide lineup that covers various fields. Today, our product group of over 500,000 items supports manufacturing sites around the world.



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-1271AA

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

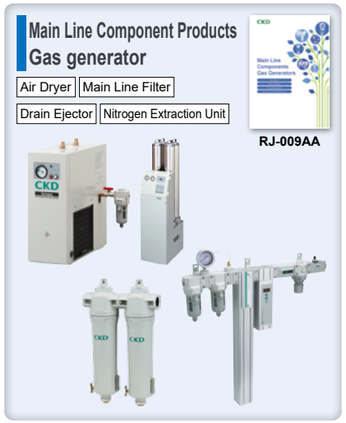
CKD Catalog Information

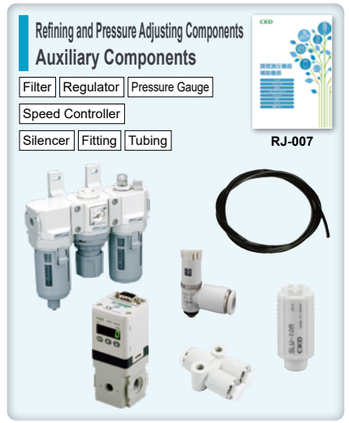
Check details for each product category in the

RJ-001

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

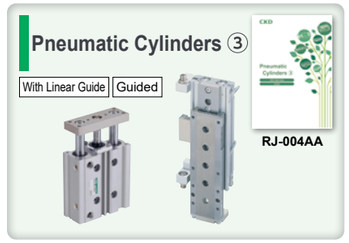
Detailed specifications are available in the respective Booklet and WEB catalogs.

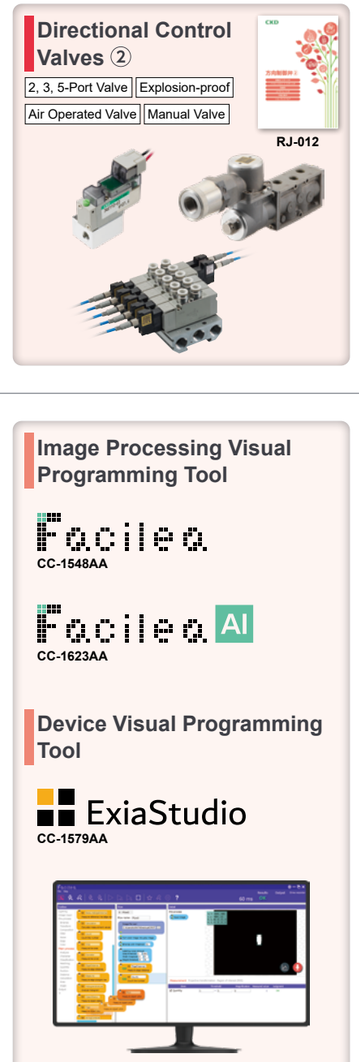


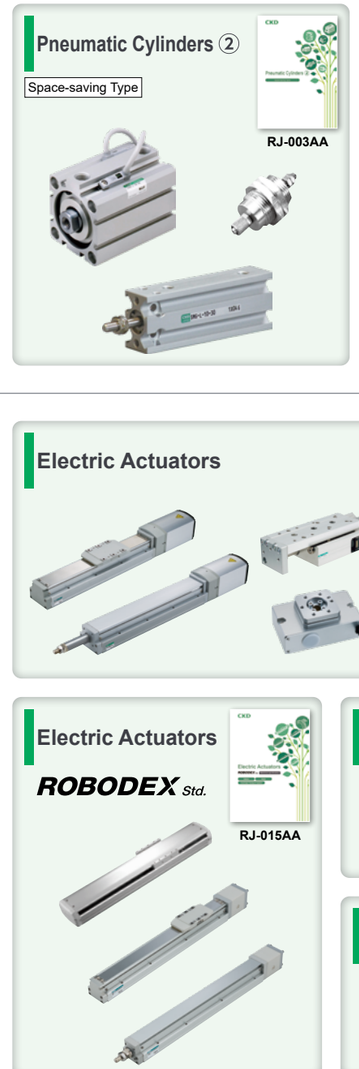


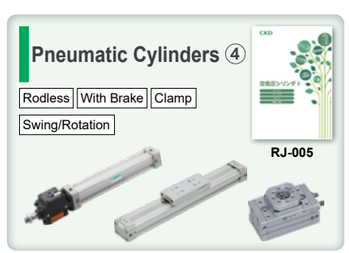
Check details on the WEB

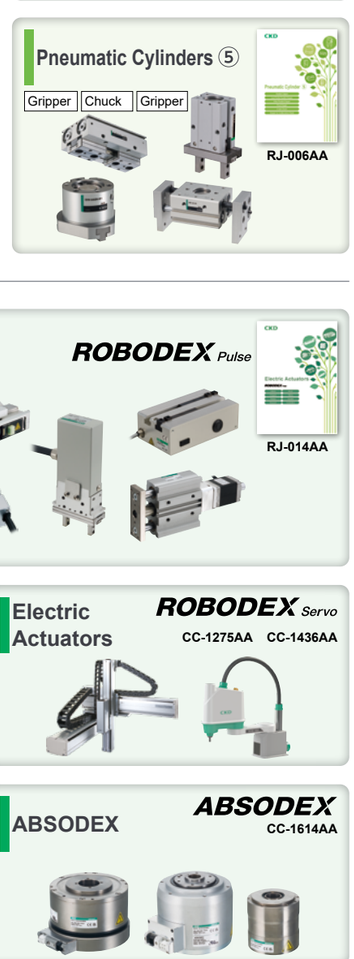
https://www.ckd.co.jp/kiki/en/

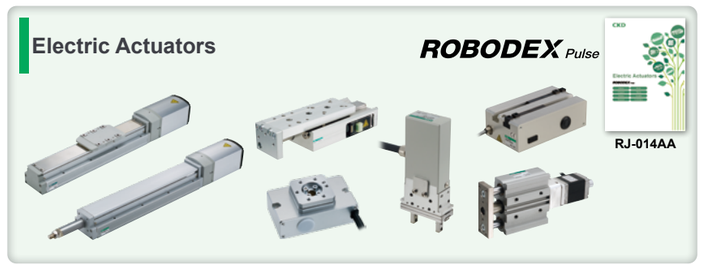












ROBODEX

Contributing to automation needs.

ROBODEX Pulse

A wide variety of ROBODEX series.

Dusty environments

Low particle generation

Rechargeable battery manufacturing

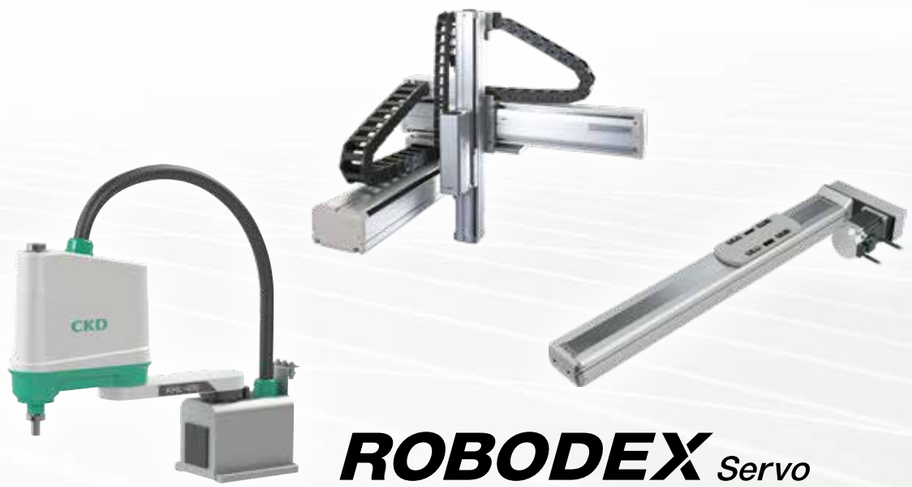
Food manufacturing

ROBODEX Pulse

Space-saving & high-rigidity stepping motor drive

ROBODEX Std.

Motorless, to which your desired motor can be attached



ROBODEX Servo

Servo motor drive compatible with a wide range of applications

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International System of Units (SI Units)
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Posted on the CKD website.
https://www.ckd.co.jp/kiki/en/

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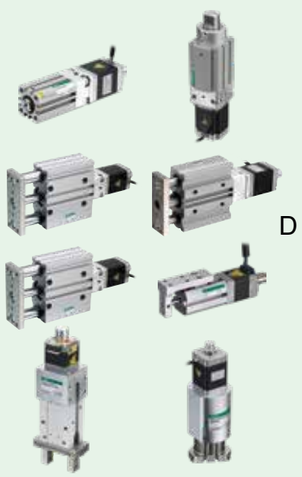 D Series >>> P. 413	Electric Actuator **DSSD2** with Motor Specification Rod Type	417
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Search by Product System List

You can select by the appearance and product overview of each series.

Slider Type >>> P. 1

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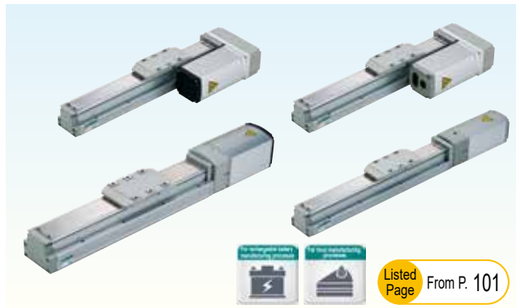
Slider Type
EJSG

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
EJSG-04	□35	900 mm/s	20 kg	16
EJSG-05	□42	1120 mm/s	40 kg	26
EJSG-08	□56	800 mm/s	80 kg	36
EJSG-04-G	□35	900 mm/s	20 kg	52
EJSG-05-G	□42	1120 mm/s	40 kg	56
EJSG-08-G	□56	800 mm/s	80 kg	60
EJSG-04-C	□35	720 mm/s	20 kg	72
EJSG-05-C	□42	895 mm/s	40 kg	76
EJSG-08-C	□56	640 mm/s	80 kg	80



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Slider Type
EBS-G/M

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
EBS-04G	□35	900 mm/s	20 kg	108
EBS-05G	□42	1120 mm/s	45 kg	118
EBS-08G	□56	800 mm/s	80 kg	128
EBS-04M *1	□35	800 mm/s	16.6 kg	108
EBS-05M *1	□42	1100 mm/s	45 kg	118
EBS-08M *1	□56	1100 mm/s	80 kg	128

*1 Value for power supply voltage of 48 VDC.
* For the rechargeable battery production process (P4) and food production process (FPI), there are restrictions on connectable controllers.

Rod Type >>> P. 159

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Rod Type
EBR-G/M

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
EBR-04G	□35	700 mm/s	40 kg	166
EBR-05G	□42	1000 mm/s	80 kg	176
EBR-08G	□56	750 mm/s	80 kg	186
EBR-04M *1	□35	600 mm/s	33.3 kg	166
EBR-05M *1	□42	800 mm/s	80 kg	176
EBR-08M *1	□56	900 mm/s	80 kg	186

*1 Value for power supply voltage of 48 VDC.
* For the rechargeable battery production process (P4) and food production process (FPI), there are restrictions on connectable controllers.

F Series >>> P. 221

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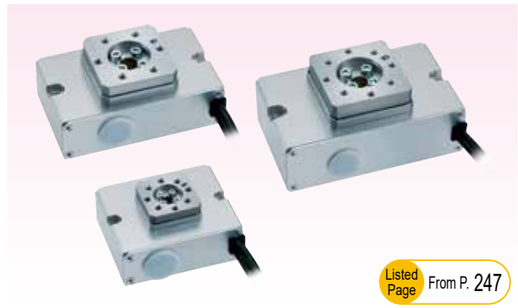
Table Type
FLCR

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
FLCR-16	□20	300 mm/s	4 kg	228
FLCR-20	□25	300 mm/s	5.5 kg	230
FLCR-25	□25L	300 mm/s	11 kg	232

* For the rechargeable battery production process (P4), there are restrictions on connectable controllers.



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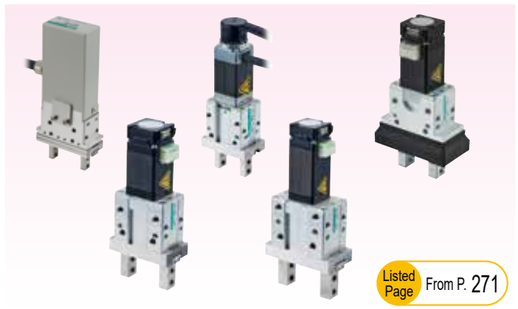
Rotary Type
FGRC

Model No.	Motor Size	Max. Angular Velocity	Max. Output Torque	Page
FGRC-10	□20	200 deg/s	0.89 N·m	250
FGRC-30	□25	200 deg/s	2.71 N·m	252
FGRC-50	□35	200 deg/s	4.66 N·m	254



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2-Finger Gripper Type
FLSH

Model No.	Motor Size	Max. Speed	Max. Gripping Force	Stroke	Page
FLSH-16	□20	50 mm/s (one side)	20 N (one side)	12 mm (6, one side)	274
FLSH-20	□25	50 mm/s (one side)	42 N (one side)	18 mm (9, one side)	278
FLSH-25	□25L	50 mm/s (one side)	65 N (one side)	22 mm (11, one side)	282

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2-Finger Gripper Type
FFLD

Model No.	Motor Size	Max. Speed	Max. Gripping Force	Stroke	Page
FFLD-08	□20	10 mm/s (one side)	80 N (one side)	100 mm (50, one side)	300
FFLD-30	□25L	10 mm/s (one side)	300 N (one side)	140 mm (70, one side)	302
FFLD-50	□25L	10 mm/s (one side)	500 N (one side)	160 mm (80, one side)	304
FFLD-04H	□20	30 mm/s (one side)	40 N (one side)	100 mm (50, one side)	306
FFLD-12H	□25L	30 mm/s (one side)	120 N (one side)	140 mm (70, one side)	308
FFLD-30H	□25L	30 mm/s (one side)	300 N (one side)	140 mm (70, one side)	310
FFLD-50H	□35	30 mm/s (one side)	500 N (one side)	160 mm (80, one side)	312

Search by Product System List

You can select by the appearance and product overview of each series.

G Series >>> P. 327

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Rod Type

GSSD2

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
GSSD2-20	□35	400 mm/s	4.4 kg	332
GSSD2-32	□42	500 mm/s	9.2 kg	334
GSSD2-50	□56	500 mm/s	14.8 kg	336

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Stopper Type

GSTK

Model No.	Motor Size	Max. Speed	Max. Thrust	Page
GSTK-20	□35	400 mm/s	62 N	342
GSTK-32	□42	500 mm/s	113 N	344
GSTK-50	□56	500 mm/s	192 N	346

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Guided Type

GSTG

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Stroke	Page
GSTG-20	□35	400 mm/s	4.4 kg	100 mm	354
GSTG-32	□42	500 mm/s	9.2 kg	100 mm	356
GSTG-50	□56	500 mm/s	14.8 kg	100 mm	358

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Guided Type

GSTS/GSTL

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Stroke	Page
GSTS-20	□35	400 mm/s	4.4 kg	50 mm	368
GSTS-32	□42	500 mm/s	9.2 kg	50 mm	370
GSTS-50	□56	500 mm/s	14.8 kg	50 mm	372
GSTL-20	□35	400 mm/s	4.4 kg	200 mm	382
GSTL-32	□42	500 mm/s	9.2 kg	200 mm	384
GSTL-50	□56	500 mm/s	14.8 kg	200 mm	386

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3-Finger Gripper Type

GCKW

Model No.	Motor Size	Max. Speed	Max. Gripping Force	Stroke	Page
GCKW-16	□20	50 mm/s (one side)	7 N (one side)	4 mm (2, one side)	396
GCKW-20	□25	50 mm/s (one side)	16 N (one side)	4 mm (2, one side)	398
GCKW-25	□25L	50 mm/s (one side)	29 N (one side)	6 mm (3, one side)	400

D Series >>> P. 413

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Rod Type

DSSD2

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Page
DSSD2-20	□35	135 mm/s	4.4 kg	418
DSSD2-32	□42	180 mm/s	10 kg	420
DSSD2-50	□56	144 mm/s	14.8 kg	422

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Stopper Type

DSTK

Model No.	Motor Size	Max. Speed	Max. Thrust	Page
DSTK-20	□35	135 mm/s	62 N	428
DSTK-32	□42	180 mm/s	137 N	430
DSTK-50	□56	144 mm/s	129 N	432

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Guided Type

DSTG

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Stroke	Page
DSTG-20	□35	135 mm/s	4.4 kg	100 mm	440
DSTG-32	□42	180 mm/s	10 kg	100 mm	442
DSTG-50	□56	144 mm/s	14.8 kg	100 mm	444

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Guided Type

DSTS/DSTL

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Stroke	Page
DSTS-20	□35	135 mm/s	4.4 kg	50 mm	454
DSTS-32	□42	180 mm/s	10 kg	50 mm	456
DSTS-50	□56	144 mm/s	14.8 kg	50 mm	458
DSTL-20	□35	135 mm/s	4.4 kg	200 mm	468
DSTL-32	□42	180 mm/s	10 kg	200 mm	470
DSTL-50	□56	144 mm/s	14.8 kg	200 mm	472

Search by Product System List

You can select by the appearance and product overview of each series.

D Series >>> P. 481

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Compact Guided Type

DMSDG

Model No.	Motor Size	Max. Speed	Max. Payload (Horizontal)	Max. Pushing Force	Page
DMSDG-08	□20	50 mm/s	270 g	10 N	486
DMSDG-16	□28	77 mm/s	350 g	30 N	488

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2-Finger Gripper Type

DLSH

Model No.	Motor Size	Max. Speed	Max. Gripping Force	Stroke	Page
DLSH-20	□28	63 mm/s (one side)	10 N (one side)	10 mm (5, one side)	500
DLSH-32	□42	60 mm/s (one side)	40 N (one side)	22 mm (11, one side)	502

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3-Finger Gripper Type

DCKW

Model No.	Motor Size	Max. Speed	Max. Gripping Force	Stroke	Page
DCKW-20	□28	41 mm/s (one side)	8 N	4 mm (2, one side)	510
DCKW-32	□42	70 mm/s (one side)	30 N	8 mm (4, one side)	512

Controller >>> P. 529

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Multi Axis Controller

ECMG

Model No.	Interface Specifications	Compatible Actuators	Applicable Motor Size	Page
ECMG	CC-Link EtherCAT EtherNet/IP	EJSG/EBS-G EBR-G/FLCR-G/ FGRC-G/FLSH-G G Series	□20/□25 □25L/□35 □42/□56	535

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Single Axis Controller

ECG

Model No.	Interface Specifications	Compatible Actuators	Applicable Motor Size	Page
ECG-A	Parallel I/O IO-Link CC-Link EtherCAT EtherNet/IP	EJSG/EBS-G EBR-G/GSSD2 GSTK/GSTG GSTS/GSTL	□35/□42 □56	565
ECG-B	Parallel I/O IO-Link CC-Link EtherCAT EtherNet/IP	FCLR-G FGRC-G FLSH-G GCKW	□20/□25 □25L	581

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Single Axis Controller

ECR

Model No.	Interface Specifications	Compatible Actuators	Applicable Motor Size	Page
ECR	Parallel I/O IO-Link CC-Link EtherCAT	EBS-M EBR-M FLCR FGRC FLSH	□20/□25 □25L/□35 □42/□56	595

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Single Axis Controller

ESC4

Model No.	Interface Specifications	Compatible Actuators	Applicable Motor Size	Page
ESC4	Parallel I/O	D Series	□20/□28 □35/□42 □56	611

Controller Compatibility List

This is a compatibility table for actuators and controllers. Please select a compatible controller for the actuator you will be using.

		Slider Type		Rod Type	F Series						G Series					D Series							
					Table Type	Rotary Type	2-Finger Gripper Type				Rod Type	Stopper Type	Guided Type		3-Finger Gripper Type	Rod Type	Stopper Type	Guided Type			2-Finger Gripper Type	3-Finger Gripper Type
		EJSG	EBS-G/M	EBR-G/M	FLCR	FGRC	FLSH	FFLD			GSSD2	GSTK	GSTG	GSTS GSTL	GCKW	DSSD2	DTSK	DSTG	DSTS DSTL	DMSDG	DLSH	DCKW
ECMG		●	●	●	●	●	●				●	●	●	●	●							
ECG-A		●	●	●							●	●	●	●								
ECG-B					●	●	●								●							
ECR			●	●	●	●	●															
ESC4																●	●	●	●	●	●	●

Model Selection System

You can select the optimal model just by selecting the operating conditions and entering the required values.
*EJSG, G-Series, and D-Series are not supported. Please check the general catalog's model selection page.

https://sentei.ckd.co.jp/kiki/sentei/electric/en/

Common Configuration Tool "S-Tools" Free of Charge

The dedicated configuration tool "S-Tools" is available free of charge on our website. It can be used with all ROBODEX Pulse series products.

CKD YouTube Channel
Please check from your iPad or smartphone.

*May not display correctly depending on the smartphone's usage environment.

ECMG Setup Video Now Available!
ROBODEX
Quick Start Guide
(Multi Axis Controller)
ECMG Series
-Startup-

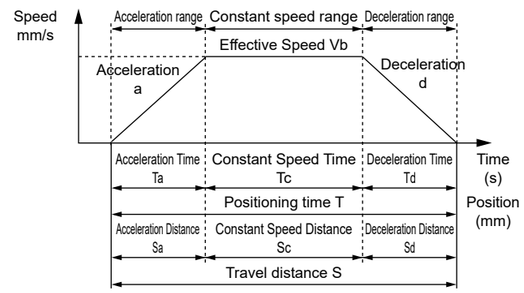
Actuator status can be visually confirmed at a glance

Easy operation check on the control panel

Positioning Time Confirmation Chart

You can check the positioning time of the selected actuator.

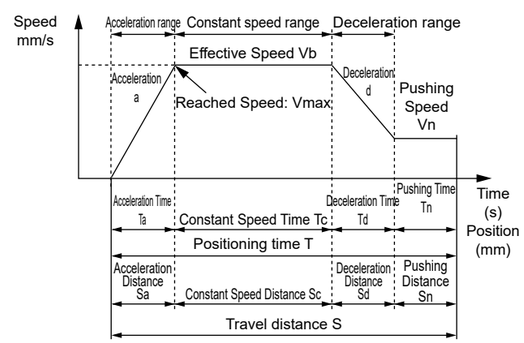
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times S/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	$=(d\times Td^2)/2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≒ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times(S-Sn+Vn^2/2/d)/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≒ 9.8 m/s².

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

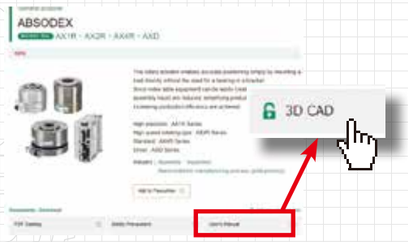
Easy registration in 2 STEPS

Registration complete!

How to download CAD

STEP 1

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



STEP 2.

Select model No.

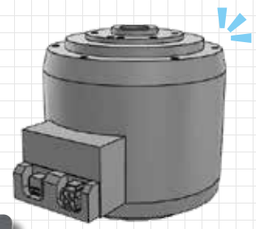
STEP 3

❶ Specify CAD format

❷ Generate CAD data

Download CAD

Download complete!

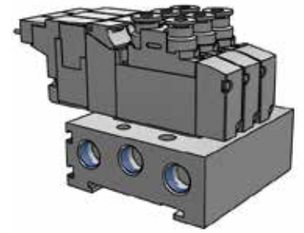


Pneumatic valve manifold specifications and CAD data are easily available on the Web.

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

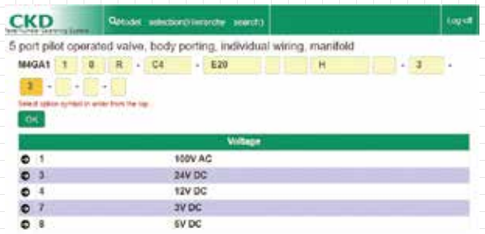
Specifications and download method of CAD data

STEP 1

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

STEP 2.

Select model No.



STEP 3

Create specifications sheets

STEP 4

Download complete!

Significantly reduces work time

●For specifications output, Specification output Click

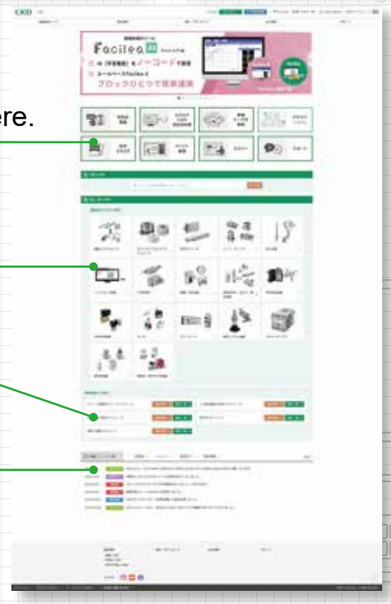
●If downloading CAD data 2D/3D CAD Click

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

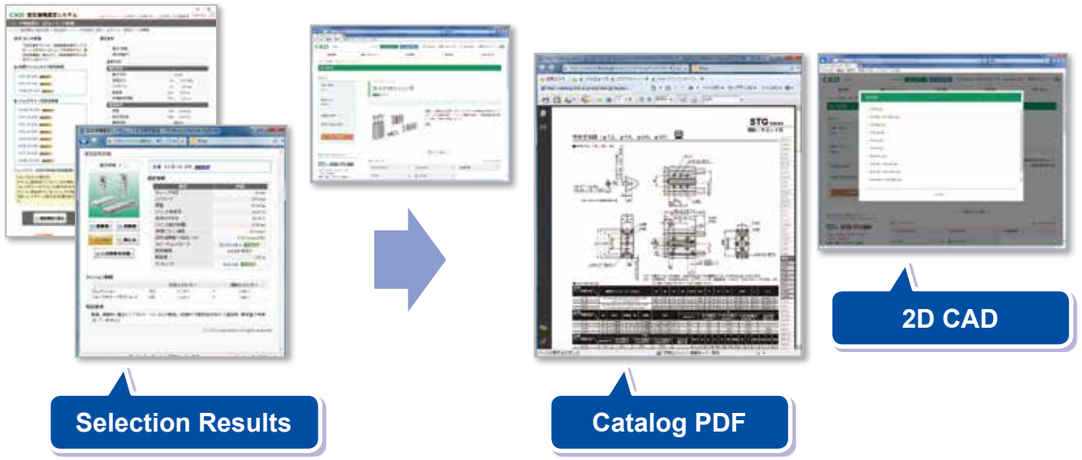
We provide a system that supports the selection of the following items. Please use it when selecting models and designing.

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.

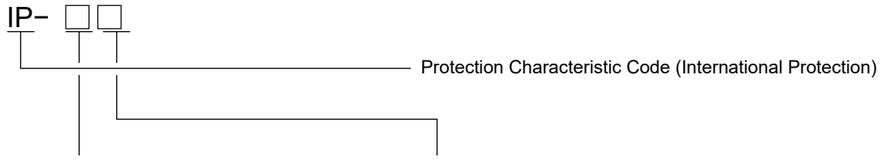
https://www.ckd.co.jp/en/

Protective Structure

● Protection Structure

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

■ JIS C 0920 : 2003



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

First Characteristic Numeral	Degree of Protection	
0	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	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

Always read this section before use.

When designing equipment using electric actuators, the manufacturer is obligated to ensure that the safety of the mechanism and the electrically controlled system 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 a safe device is manufactured.

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 in handling.

2 Use the product within specifications range.

This product must be used within its stated specifications. It must not be modified or machined additionally.
This product is intended for use as a device or part for general-purpose industrial machinery. It is not intended for use outdoors (except for outdoor type) or for use under the following conditions or environment.
(Note that this product can be used under the following conditions only when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)

❶ Use for special applications which require the safety, including nuclear energy, railways, aircrafts, marine vessels, vehicles, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency operations (cutoff circuits, opening etc.) circuits, press machines, brake circuits, or safety devices or applications.
❷ Use for applications where life or assets could be adversely affected and special safety measures are required.

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

4 Never remove devices before confirming safety.

❶ Inspect and service on 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 maintaining device, be sure to shut down the power supply of the equipment and the relevant power supply, using caution to avoid electric shock.

5 Observe instruction manual and precautions attached the product surely to prevent accidents.

❶ The product could operate unexpectedly during teaching operation or trial operation. Be especially careful not to touch the actuator. If operating the product from a position where the shaft body cannot be seen, be sure to first confirm that the safety is secured even if the actuator moves.

6 Observe precautions to prevent electric shock.

❶ Do not touch the heat sink, cement friction, or motor inside the controller.
These will heat up, and could cause burns. Wait an appropriate amount of time prior to performing inspections or other tasks.
A high voltage is applied until the electrical load stored in the internal capacitors is discharged after the power is turned OFF.
Do not touch for around three minutes after the power OFF.
❷ Make sure to turn the switch on the controller power supply source OFF, before maintenances and inspections.
There is a danger of high voltage electric shocks.
❸ Do not attach or remove connector, while the power is on. Otherwise, this may cause malfunction, failure, or electric shock.

7 Install an overcurrent protector.

The wiring to the driver should be in accordance with JIS B 9960-1:2019 (IEC 60204-1:2016) Safety of Machinery - Electrical Equipment of Machines - Part 1: General Requirements. Install an overcurrent protector (a circuit breaker or circuit protector for wiring) on the main power, control power, and I/O power.

(Reference: JIS B 9960-1 7.2.1 General description)
If there is a possibility the circuit current may exceed the rated value of the component or the allowable current of the conductor, an overcurrent protection must be provided. The details of the ratings or set values to be selected shall be provided in 7.2.10.

8 Observe precautions below to prevent accidents.

■ The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, and when there is a high degree of emergency to a warning.
WARNING: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.
CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation.
Every item provides 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 confirmation

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

4 Range of service

The delivered product price does not include engineer dispatch service fees. Separate fees will be charged in the following cases.
(1) Instruction of installation and adjustment, and presence on test operation
(2) Maintenance and inspection, adjustment, and repair
(3) Technical instructions and technical education (operation, program, wiring method, safety education, etc.)

Precautions for export

Products and related technologies in this catalog
Those of the products and related technologies in this catalog which are subject to US Export Administration Regulations
(EAR) are marked on the product page as "Product subject to the EAR (EAR99) or (EAR99 and 3A991)". For export or provision of products or related technologies subject to EAR regulations, we request that the US Export Administration Regulations (EAR) be observed appropriately.

Electric Actuator EJSG Series
Slider Type

CONTENTS

Product Introduction		2
■ Slider Type	EJSG	9
■ Slider Type Dust-proof Specification	EJSG-G	47
■ Slider Type Low Dust Emission Specification	EJSG-C	67
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Model Selection Checklist		98

For safe use in various environments and processes

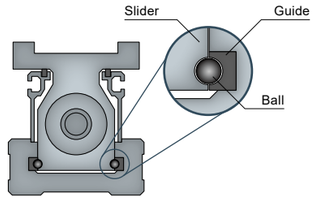
We have prepared five lineups that pursue Ease of Use and High Rigidity

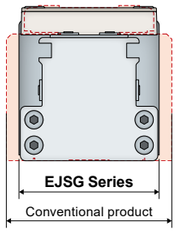
Line-up		Size 04	Size 05	Size 08	Catalog Page
Actuator	EJSG	●	●	●	9
	Dust-proof EJSG-G	●	●	●	47
	Low dust specification EJSG-C	●	●	●	67
	Compatible with rechargeable battery manufacturing processes EJSG-P4	●	●	●	CC-1569AA
	Supports food manufacturing processes EJSG-FP1	●	●	●	CC-1569AA
Applicable controller	ECMG	●	●	●	535
	ECG-A	●	●	●	565

Compact, high-rigidity body

High rigidity | Space saving | Reduced design | Reduced parts | Reduced man-hours

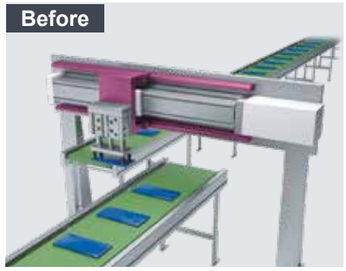
The guide that supports the load uses an outer rail. The wide guide integrated with the body achieves both high rigidity and space saving.





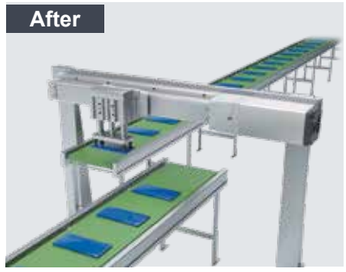
		Conventional Product	EJSG-05
Body Width		64 mm	54 mm
Static Allowable Moment	MP	25.7 N·m	103 N·m
	MY	25.7 N·m	103 N·m
	MR	58 N·m	144 N·m

Before



Use of an additional guide to reduce moment

After



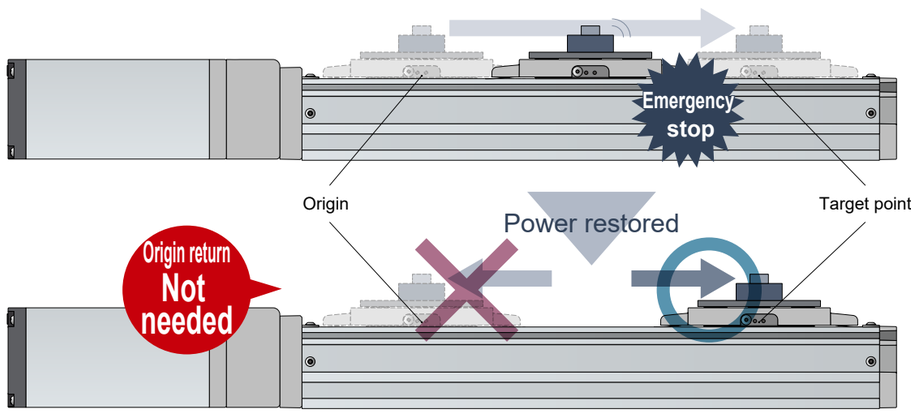
The high-rigidity body supports the moment, so the number of additional guides can be reduced

Battery-less Absolute Encoder

Easy maintenance | Reduced parts

Equipped with an absolute encoder that retains current position information. Because it is a battery-less specification, battery replacement maintenance is not required.

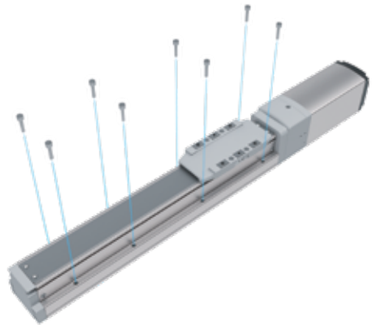
* Option for all series

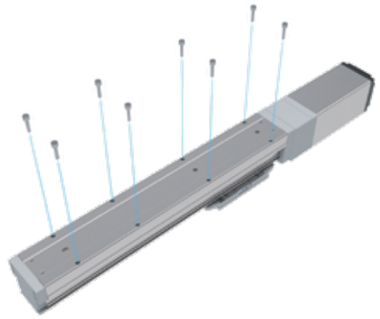


Mounting holes provided on top and bottom surfaces

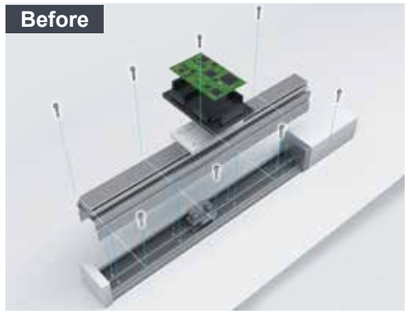
Reduced man-hours

The structure allows for direct installation from both the top and bottom surfaces without disassembling the product. Especially when installing from the top surface, work time can be significantly reduced.



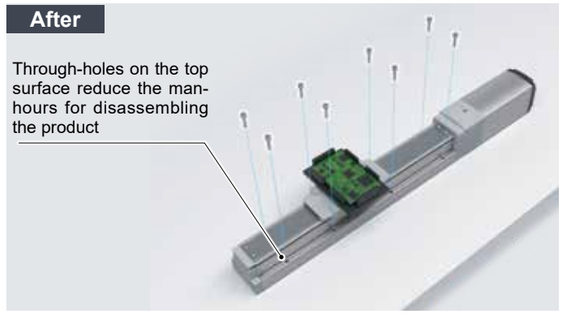


Before



Disassemble main body for top mounting

After



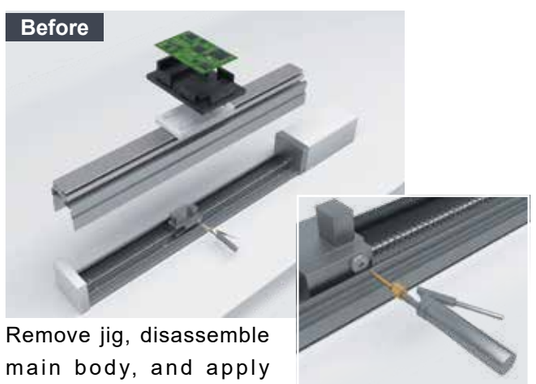
Top mounting without disassembling main body

Equipped with external grease fitting port

Easy maintenance
Reduced man-hours

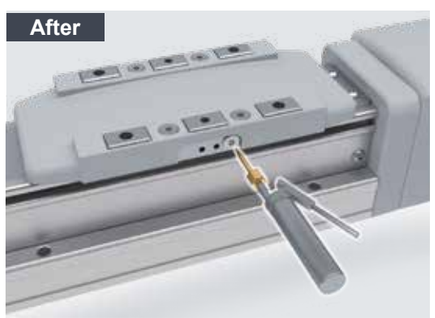
Equipped with grease fitting ports on both sides for direct greasing from the outside. Maintenance of the guide and ball screw is possible by greasing from one location without disassembling the main body.

Before



Remove jig, disassemble main body, and apply grease

After

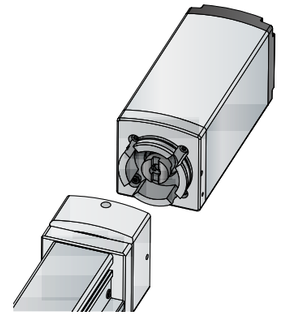


Direct greasing from the outside

Motor unit is replaceable

Easy maintenance

The motor unit can be replaced. Maintenance is easy.



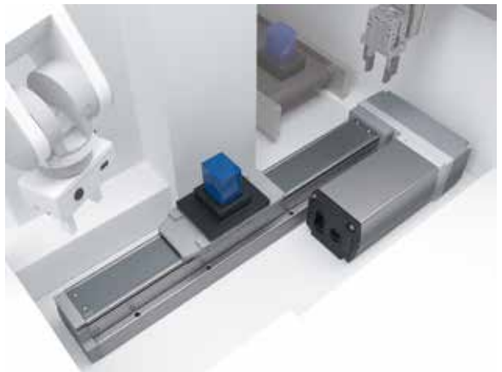
Supports custom-made actuators

High versatility

Please consult with us if you have issues with the dimensions of the actuator section, etc.

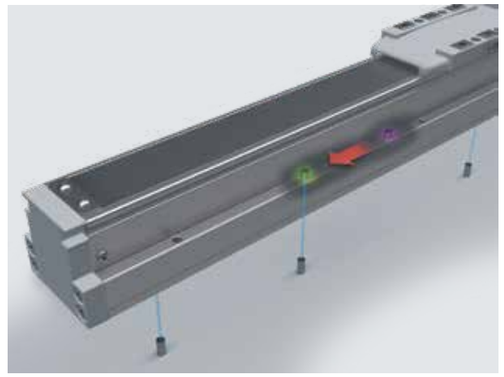
* This is a special order product.

Intermediate stroke *Every 10 mm



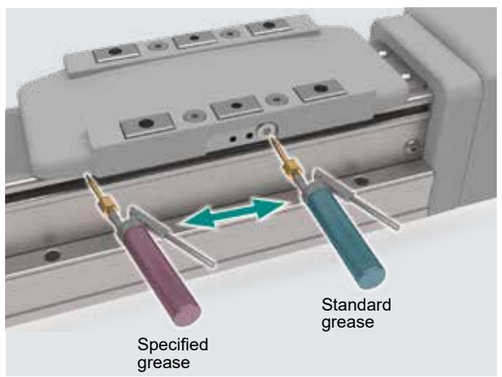
For use in limited spaces

Change of machined hole position



When you want to change the positioning pin hole position

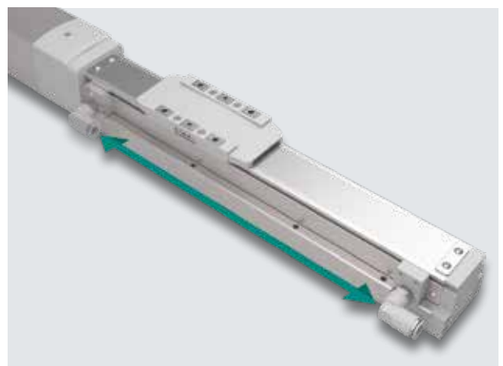
Change of grease



When you want to change to a specified grease

* There are restrictions on the types of grease that can be changed.

Change of fitting position



When you want to change the fitting position

Long-life electric actuator in dusty environments

EJSG-G Series (Dust-proof Specification)

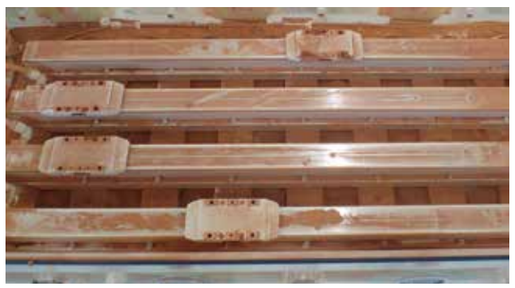
Dusty environments

Long service life

Improved durability in dusty environments

Complies with protection structure IP50. Durability in dusty environments has been significantly improved compared to the standard product.

2x Standard Products

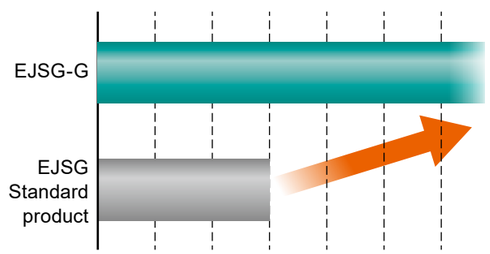


Travel test in a dusty environment

[Test Conditions]

Item		Content
Test Sample	Model No.	EJSG-05E100600NBN-VCN00-G
	Speed	400 mm/s
	Acceleration/ Deceleration	0.6 G
	Purge Flow Rate	40 NL/min
Environment	Dust Material	Kanto loam (7 types)
	Dust Diameter	75 µm
	Amount of Airborne Dust	2 kg/m^3

Travel Distance



Optimal electric actuator for clean environments

EJSG-C Series (Low Dust Emission Specification)

Low dust environments

Optimal electric actuator for rechargeable battery production processes

EJSG-P4 Series

Rechargeable battery manufacturing
Material restrictions
Dry environment
DEW POINT -70°C

Optimal electric actuator for food production processes

EJSG-FP1 Series

Food manufacturing

FP Food Process™

EJSG

Slider Type

Electric Actuator with Motor Specification

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●Technical Data 87
⚠Precautions for Use 96
Model Selection Check Sheet 98

Slider Type
EJSG
EBS

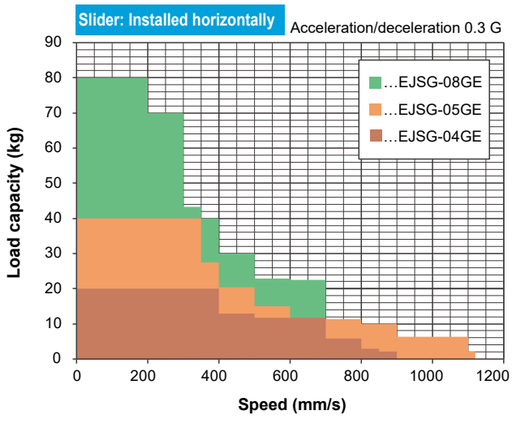
EJSG Series

System Table

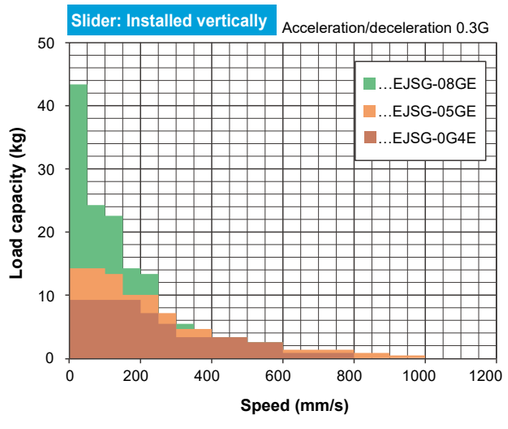
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100	Page
ECMG Series		EJSG-04E06	□35	Straight	44	6	20.0	9.2	155	450 mm/s									400	340	290	250	220	190	170							16
		EJSG-04E12				12	15.0	3.3	77	900									800	680	580	500	440	390	340							
		EJSG-04R/D/L06		Reverse Parallel		6	20.0	9.2	155	375										340	290	250	220	190	170							20
		EJSG-04R/D/L12				12	15.0	3.3	77	600											580	500	440	390	340							
		EJSG-05E05	□42	Straight	54	5	40.0	14.2	220	375									360	300	260	225	200	175	150							26
		EJSG-05E10				10	27.5	7.1	110	750									720	615	525	455	400	355	315							
		EJSG-05E20				20	18.3	2.5	55	1120											1050	910	800	710	630							
		EJSG-05R/D/L05		Reverse Parallel		5	40.0	10.0	220	350										300	260	225	220	175	150							30
		EJSG-05R/D/L10				10	27.5	3.3	110	635										615	525	455	400	355	315							
		EJSG-05R/D/L20				20	18.3	0.8	55	1120											1050	910	800	710	630							
		EJSG-08E05	□56	Straight	82	5	80.0	43.3	965	230														220	200	175	160	145	130	120	110	36
		EJSG-08E10				10	70.0	28.3	482	430															400	355	320	290	260	240	220	
		EJSG-08E20				20	30.0	3.3	241	800																710	640	580	530	480	440	
		EJSG-08R/D/L05		Reverse Parallel		5	80.0	33.3	965	200																175	160	145	130	120	110	40
		EJSG-08R/D/L10				10	70.0	21.7	482	430															400	355	320	290	260	240	220	
		EJSG-08R/D/L20				20	30.0	3.3	241	800																710	640	580	530	480	440	

* This data is for an acceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.

Slider: Installed horizontally Acceleration/deceleration 0.3 G



Slider: Installed vertically Acceleration/deceleration 0.3G



Slider Type
EJSG
EBS
Ending

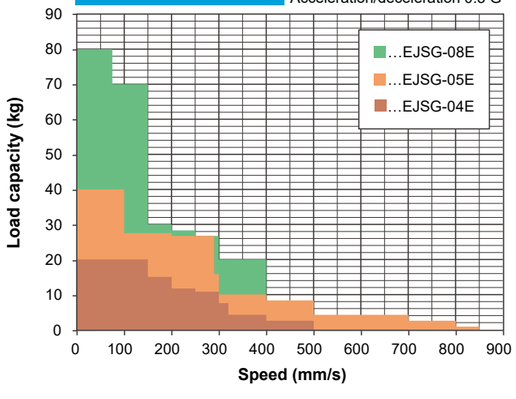
EJSG Series

System Table

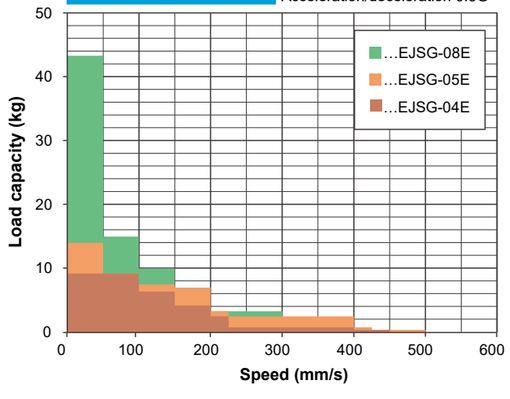
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s)	Page
ECG Series		EJSG-04E06	□35	Straight	44	6	20.0	9.2	155	320 mm/s: 290 (600), 250 (650), 220 (700), 190 (750), 170 (800)	16
		EJSG-04E12				12	15.0	3.3	77	500: 440 (700), 390 (750), 340 (800)	
		EJSG-04R/D/L06		Reverse Parallel		6	20.0	9.2	155	250: 220 (700), 190 (750), 170 (800)	20
		EJSG-04R/D/L12				12	11.7	3.3	77	400: 390 (750), 340 (800)	
		EJSG-05E05	□42	Straight	54	5	40.0	14.0	220	290: 260 (600), 225 (650), 200 (700), 175 (750), 150 (800)	26
		EJSG-05E10				10	27.5	7.0	110	500: 455 (650), 400 (700), 355 (750), 315 (800)	
		EJSG-05E20				20	18.3	2.5	55	850: 800 (700), 710 (750), 630 (800)	
		EJSG-05R/D/L05		Reverse Parallel		5	40.0	10.0	220	250: 225 (650), 200 (700), 175 (750), 150 (800)	30
		EJSG-05R/D/L10				10	27.5	3.3	110	400: 355 (750), 315 (800)	
		EJSG-05R/D/L20				20	18.3	0.8	55	700: 630 (800)	
		EJSG-08E05	□56	Straight	82	5	80.0	43.3	965	150: 145 (1,000), 130 (1,050), 120 (1,100), 110	36
		EJSG-08E10				10	70.0	28.3	482	250: 240 (1,050), 220 (1,100)	
		EJSG-08E20				20	30.0	3.3	241	500: 480 (1,050), 440 (1,100)	
		EJSG-08R/D/L05		Reverse Parallel		5	80.0	33.3	965	125: 120 (1,050), 110 (1,100)	40
		EJSG-08R/D/L10				10	70.0	18.3	482	250: 240 (1,050), 220 (1,100)	
		EJSG-08R/D/L20				20	30.0	3.3	241	400	

* This data is for an acceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.

Slider: Installed horizontally Acceleration/deceleration 0.3 G



Slider: Installed vertically Acceleration/deceleration 0.3G



Slider Type
EJSG
EBS

Model No. Configuration

Slider Type

EJSG - 05 E 10 0100 N B N - C S03

❶ ❷ ❸ ❹ ❺ ❻ ❼

Applicable Controller
ECMG Series
ECG Series

❶Body Size	
04	Body width 44 mm
05	Body width 54 mm
08	Body width 82 mm

❷Motor Mounting Direction	
E	Inline Mount
R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸Screw Lead	
05	5 mm
06	6 mm
10	10 mm
12	12 mm
20	20 mm

❹Stroke	
0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake	
N	None
B	Yes

❻Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Relay Cable	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

Dust-proof Specification (G Series)

EJSG - 05 E 10 0100 N B N - V C S03 - G

❶ ❷ ❸ ❹ ❺ ❻ ❽ ❼

Applicable Controller
ECMG Series
ECG Series

❽Fitting	
V	Yes

Dust-proof Specification

Low Dust Emission Specification (C Series)

EJSG - 05 E 10 0100 N B N - V C S03 - C

❶ ❷ ❸ ❹ ❺ ❻ ❽ ❼

Applicable Controller
ECMG Series
ECG Series

❽Fitting	
V	Yes

Low Dust Emission Specification

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EJSG-04E

Inline Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 ❶ E ❷ 06 ❸ 0300 ❹ N ❺ B ❻ N - C ❼ S03

❶ Applicable Controller *1

ECMG
ECG

❶ Body Size

04	Body width 44 mm

❷ Motor Mounting Direction

E	Inline Mount

❸ Screw Lead

06	6 mm
12	12 mm

❹ Stroke

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *2

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Relay Cable*3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG	
Motor		□35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 800			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	15.0
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 450	15 to 900	7 to 320	15 to 500
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			
Protection Structure		IP20			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 17.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

Connected Controller ECMG (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 450	500	550	600	650	700	750	800
6	450	400	340	290	250	220	190	170
12	900	800	680	580	500	440	390	340

Connected Controller ECG (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
6	320	290	250	220	190	170
12	500			440	390	340

Speed and Payload

[Horizontal Installation]

Connected Controller ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
350	20.0	15.0	20.0	10.0	13.3	8.3	12.1	5.4
400	20.0	15.0	20.0	10.0	13.3	8.3	9.2	5.4
450	11.7	12.9	11.7	10.0	11.7	8.3	8.3	5.4
500		12.9		10.0		8.3		5.4
600		11.7		9.2		7.5		5.4
700		11.7		8.3		5.8		5.4
800		5.8		5.8		5.8		2.5
850		2.9		2.5		2.5		1.7
900		2.1		1.7		1.7		0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 6	12
7	20.0		20.0	
15	20.0	15.0	20.0	15.0
50	20.0	15.0	20.0	15.0
100	20.0	15.0	20.0	15.0
150	20.0	15.0	12.5	10.8
200	15.0	15.0	12.5	10.8
250	11.7	10.8	11.7	8.3
300	7.5	10.8	7.5	8.3
320	7.5	4.2	7.5	4.2
400		4.2		4.2
500		2.5		2.5

[Vertical Installation]

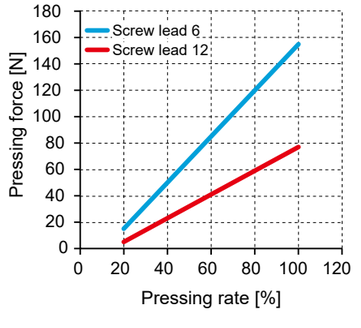
Connected Controller: ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
200	9.2	3.3	9.2	3.3
250	7.1	3.3	6.7	3.3
300	5.4	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
400	1.7	3.3		3.3
500		3.3		3.3
600		2.5		2.5
800		0.8		0.8

Connected Controller ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	9.2	3.3
150	6.7	3.3
200	4.2	3.3
225	1.7	2.5
250	1.7	2.5
275	0.4	2.5
300		2.5
350		0.8
400		0.8
450		0.4

Pushing Force

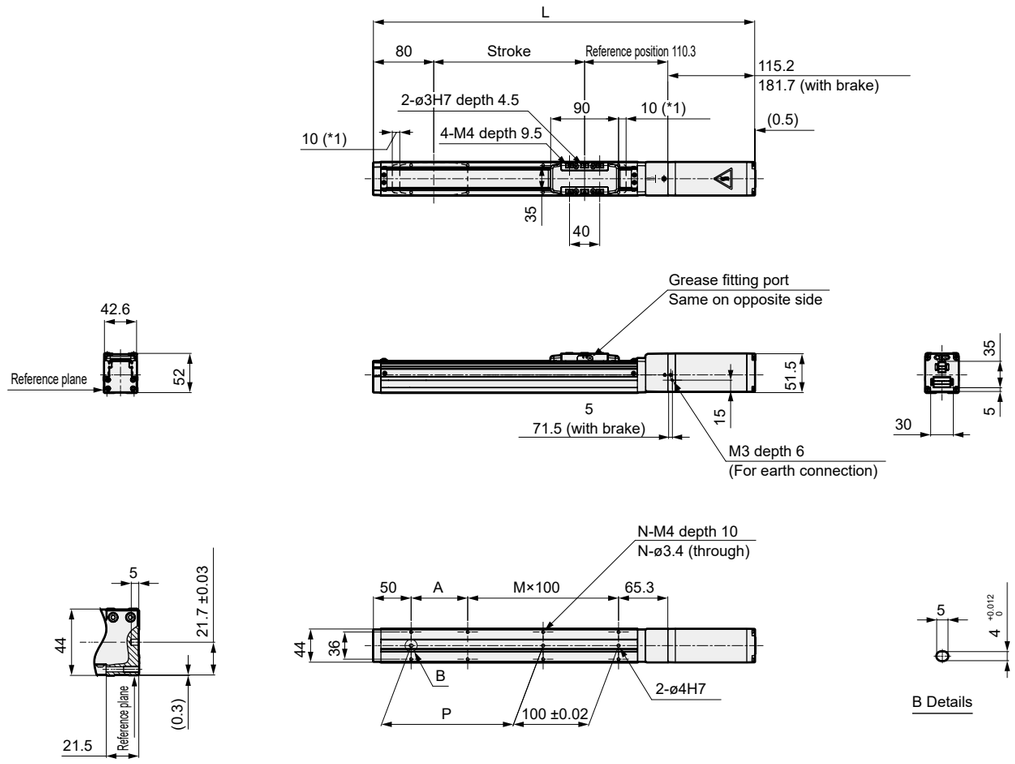


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

EJSG-04E

External Dimension Drawing Inline Motor Mount

● EJSG-04E



*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without Brake	355.5	405.5	455.5	505.5	555.5	605.5	655.5	705.5	755.5	805.5	855.5	905.5	955.5	1005.5	1055.5	1105.5
	With Brake	422	472	522	572	622	672	722	772	822	872	922	972	1022	1072	1122	1172
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4
	With Brake	2.0	2.1	2.2	2.3	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.3	3.4	3.5	3.7	3.8

MEMO

Electric Actuator Slider Type

EJSG-04□

Reverse Parallel Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 R 06 0300 N B N - C S03

❶

Applicable Controller *1
ECMG
ECG

❶Body Size

04	Body width 44 mm

❷Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸Screw Lead

06	6 mm
12	12 mm

❹Stroke *2

0050 to 0800	50 mm (every 50 mm) 800 mm

❺Brake *3

N	None
B	Yes

❻Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG	
Motor		□35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 500			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	11.7
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 375	15 to 600	7 to 250	15 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			
Protection Structure		IP20			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 21.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

Connected Controller ECMG (mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 500	550	600	650	700	750	800
6	375	340	290	250	220	190	170
12	600		580	500	440	390	340

Connected Controller ECG (mm/s)

Screw Lead (mm)	Stroke (mm)			
	50 to 650	700	750	800
6	250	220	190	170
12	400		390	340

Speed and Payload

[Horizontal Installation]

Connected Controller: ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3		0.5		0.7		1.0	
	Screw lead (mm)							
	6	12	6	12	6	12	6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
250	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	11.7	5.4
350	20.0	15.0	20.0	10.0	13.3	8.3	11.3	5.4
375	15.8	15.0	15.8	10.0	13.3	8.3	9.2	5.4
400		15.0		10.0		8.3		5.4
450		11.7		10.0		8.3		5.4
500		0.8		0.8		0.8		

Connected Controller ECG (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.7	
	Screw Lead (mm)			
	6	12	6	12
7	20.0		20.0	
15	20.0	11.7	20.0	10.0
50	20.0	11.7	20.0	10.0
100	20.0	11.7	20.0	10.0
150	13.3	11.7	11.7	10.0
200	13.3	11.7	10.0	10.0
250	10.0	8.3	8.3	8.3
300		8.3		8.3
400		3.3		3.3

[Vertical Installation]

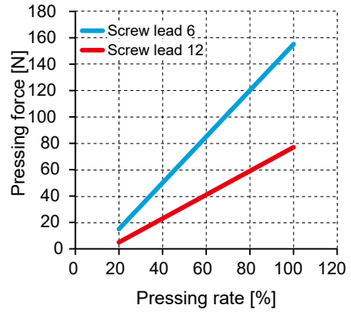
[Connected Controller: ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.5	
	Screw Lead (mm)			
	6	12	6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
150	9.2	3.3	9.2	3.3
200	8.3	3.3	8.3	3.3
250	5.8	3.3	5.8	3.3
300	4.6	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
375	0.8	3.3		3.3
450		2.1		2.1
500		0.8		0.8

Connected Controller: ECG (kg)

Speed (mm/s)	Acceleration/Deceleration (G)	
	0.3	
	Screw Lead (mm)	
	6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	6.7	3.3
150	3.3	3.3
200	2.5	3.3
225	0.8	1.7
300		1.7
350		0.8

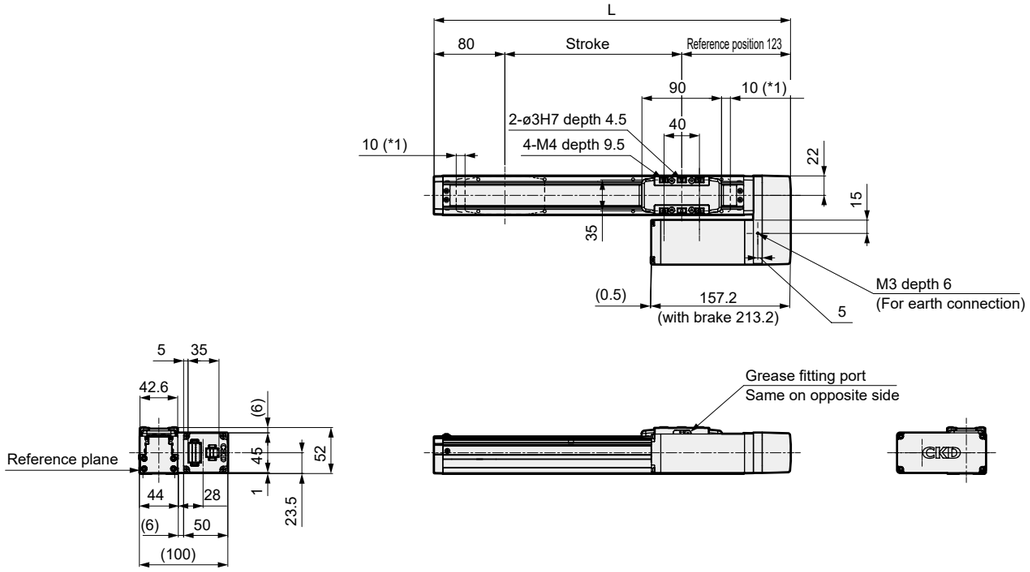
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing Motor Right Side Return Mount

● EJSG-04R

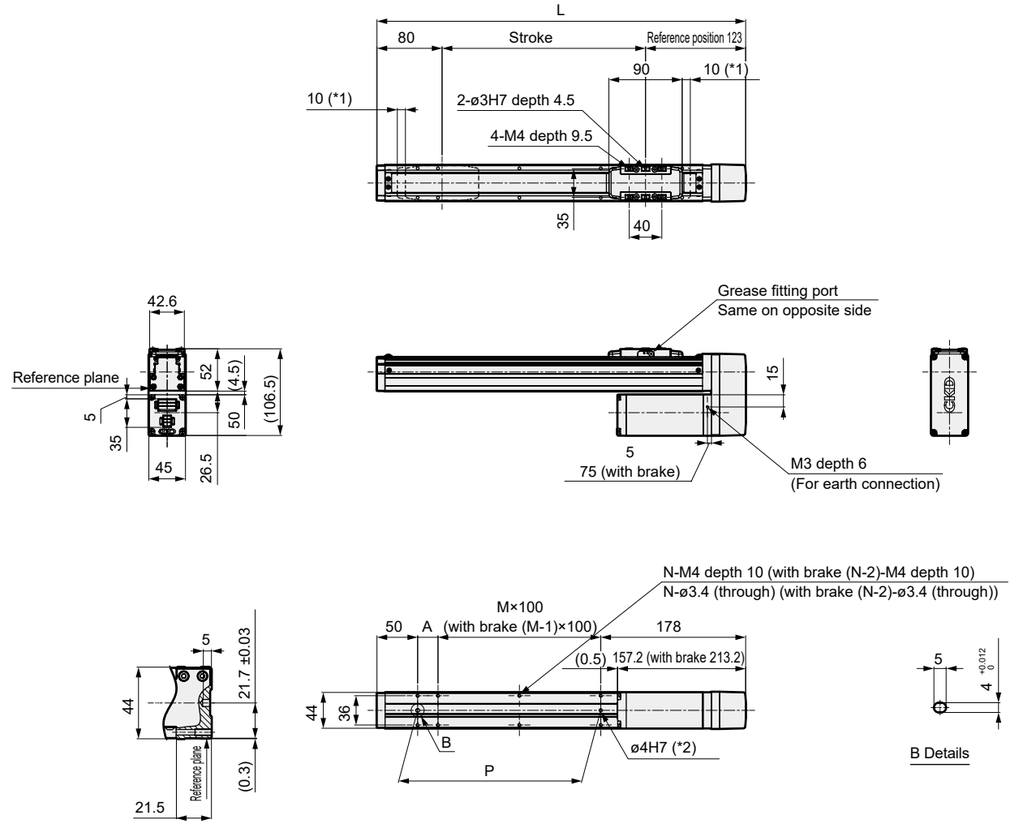


*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		253	303	353	403	453	503	553	603	653	703	753	803	853	903	953	1003
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.5
	With Brake	2.1	2.2	2.3	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.8	3.9

External Dimension Drawing Bottom-Mounted Reverse Parallel Motor Mount

● EJSG-04D

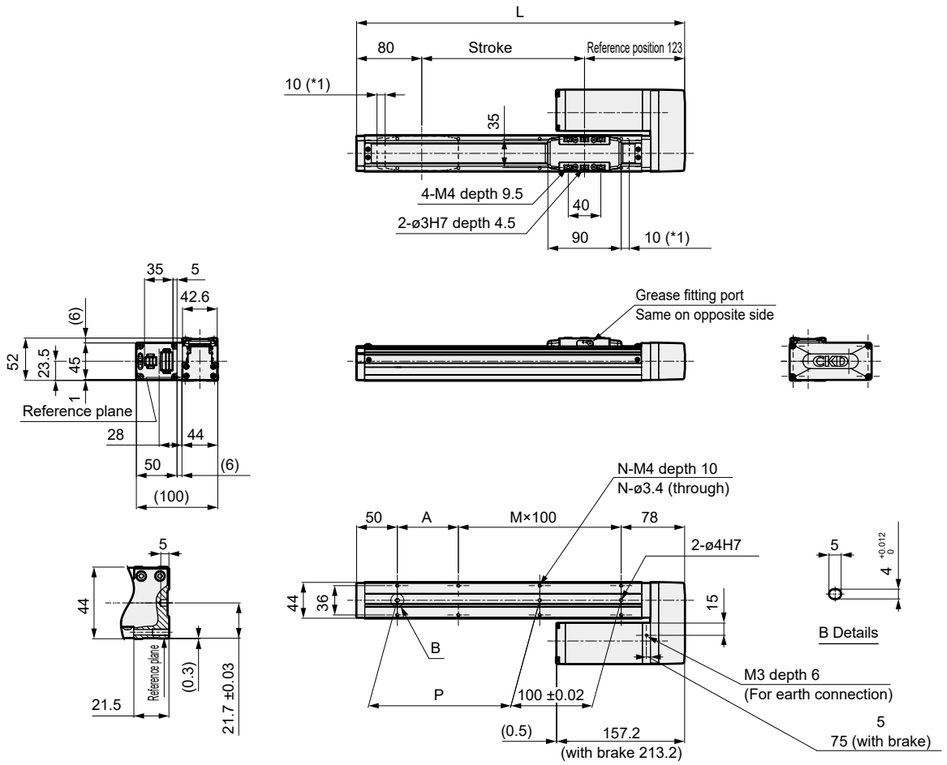


*1: Operating range to the mechanical stopper
*2: When with brake, ø4H7 is hidden by the motor part and cannot be used.

Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		250	300	350	400	450	500	550	600	650	700	750	800
L		453	503	553	603	653	703	753	803	853	903	953	1003
A		25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	6	6	7	7	8	8
N		8	8	10	10	12	12	16	16	18	18	20	20
P		225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.5
	With Brake	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.8	3.9

External Dimension Drawing Left-Side Reverse Parallel Motor Mount

● EJSG-04L



*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		253	303	353	403	453	503	553	603	653	703	753	803	853	903	953	1003
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.5
	With Brake	2.1	2.2	2.3	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.8	3.9

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EJSG-05E

Inline Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 E 05 0300 N B N - C S03

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

05	Body width 54 mm

❷ Motor Mounting Direction

E	Inline Mount

❸ Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹ Stroke

0050 to **0800**	50 mm (every 50 mm) 800 mm

❺ Brake *2

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG	
Motor		□42 Stepping Motor				
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				
Drive Method		Ball screw ø12				
Stroke mm		50 to 800				
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	14.2	7.1	2.5	14.0	7.0	2.5
Operating Speed Range *3 mm/s		6 to 375	12 to 750	25 to 1120	6 to 290	12 to 500	25 to 850
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 27.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

Connected Controller ECMG (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 450	500	550	600	650	700	750	800
5	375	360	300	260	225	200	175	150
10	750	720	615	525	455	400	355	315
20	1120			1050	910	800	710	630

Connected Controller ECG (mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 550	600	650	700	750	800	
5	290	260	225	200	175	150	
10	500		455	400	355	315	
20	850			800	710	630	

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
200	40.0	27.5	18.3	40.0	25.0	11.7	40.0	18.3	10.0	30.4	14.2	6.7
250	40.0	27.5	15.0	40.0	25.0	11.7	33.3	18.3	8.3	20.4	12.9	6.3
300	40.0	27.5	15.0	40.0	25.0	11.7	24.2	18.3	8.3	13.8	12.9	6.3
350	40.0	27.5	15.0	35.8	25.0	11.7	24.2	18.3	8.3	9.2	12.9	6.3
375	20.0	27.5	15.0	20.0	25.0	11.7	20.0	18.3	8.3	7.9	12.9	6.3
400		27.5	15.0		25.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		20.4	10.0		18.3	8.3		10.8	6.3
600		15.0	13.3		15.0	10.0		15.0	8.3		6.3	6.3
700		6.7	11.3		6.7	8.3		6.7	6.7		3.3	5.0
750		2.9	11.3		2.9	7.5		2.9	6.7		2.9	4.2
800			11.3			7.5			6.7			4.2
900			10.0			7.5			6.7			4.2
1,000			6.3			6.3			5.0			2.9
1100			6.3			4.2			2.5			1.7
1120			2.1			2.1			2.1			1.7

[Connected Controller: ECG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	8.3
50	40.0	27.5	18.3	40.0	27.5	8.3
100	40.0	27.5	18.3	40.0	27.5	8.3
150	26.7	27.5	10.0	26.7	27.5	6.7
200	26.7	27.5	10.0	26.7	27.5	6.7
250	26.7	15.8	10.0	26.7	12.5	6.7
290	26.7	15.8	10.0	15.8	12.5	6.7
300		15.8	10.0		12.5	6.7
400		10.0	8.3		9.2	5.0
500		5.8	8.3		2.5	5.0
700			4.2			2.5
800			2.5			1.7
850			0.8			0.4

[Vertical Installation]

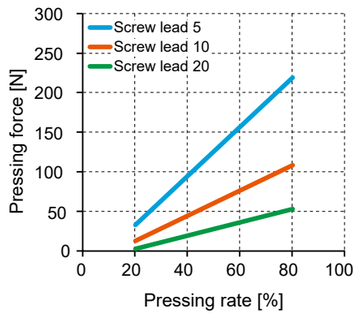
[Connected Controller: ECMG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	14.2			14.2		
12	14.2	7.1		14.2	7.1	
25	14.2	7.1	2.5	14.2	7.1	2.5
100	14.2	7.1	2.5	14.2	7.1	2.5
150	13.3	7.1	2.5	13.3	7.1	2.5
250	10.0	7.1	2.5	10.0	7.1	2.5
300	6.3	7.1	2.5	6.3	7.1	2.5
350	2.9	4.6	2.5	2.9	3.8	2.5
375	1.3	4.6	2.5	1.3	3.8	2.5
400		4.6	2.5		3.8	2.5
500		2.5	1.3		1.7	1.3
600		1.7	1.3		0.8	1.3
650		0.8	1.3			1.3
800			1.3			1.3
900			0.8			0.8
1,000			0.4			

Connected Controller: ECG (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	14.0		
12	14.0	7.0	
25	14.0	7.0	2.5
50	14.0	7.0	2.5
100	9.2	7.0	2.5
150	7.5	7.0	2.5
200	4.2	7.0	2.5
210	3.3	2.5	2.5
225	3.3	2.5	2.5
250	2.1	2.5	2.5
300		2.5	2.5
325		2.1	2.5
350		2.1	2.5
400		1.3	2.5
425		0.8	0.4
500			0.4

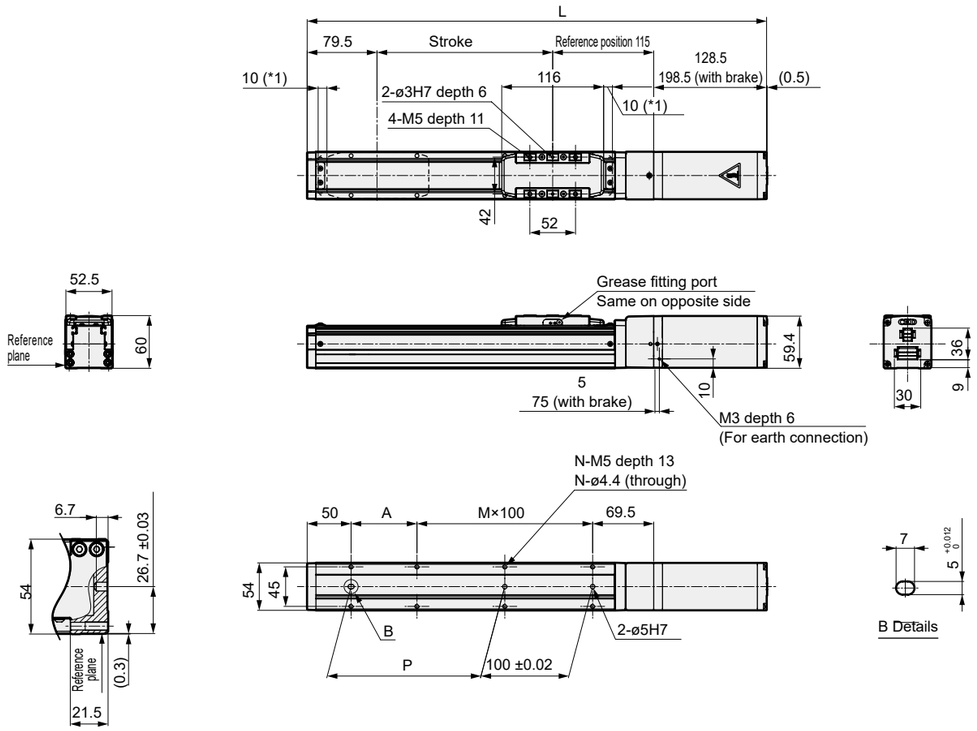
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing Inline Motor Mount

● EJSG-05E



*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without Brake	373	423	473	523	573	623	673	723	773	823	873	923	973	1023	1073	1123
	With Brake	443	493	543	593	643	693	743	793	843	893	943	993	1043	1093	1143	1193
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.4	2.6	2.7	2.8	3.0	3.1	3.3	3.4	3.5	3.7	3.8	4.0	4.1	4.2	4.4	4.5
	With Brake	3.2	3.3	3.5	3.6	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.3

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EJSG-05□

Reverse Parallel Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 R 05 0300 N B N - C S03

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

05	Body width 54 mm

❷ Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸ Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹ Stroke *2

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *3

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG	
Motor		□42 Stepping Motor				
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				
Drive Method		Ball screw ø12				
Stroke mm		50 to 800				
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	10.0	3.3	0.8	10.0	3.3	0.8
Operating Speed Range *2 mm/s		6 to 325	12 to 635	25 to 1120	6 to 250	12 to 400	25 to 700
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20					
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 31.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 450	550	600	650	700	750	800
5	350	300	260	225	200	175	150
10	635	615	525	455	400	355	315
20	1120		1050	910	800	710	630

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)				
	50 to 600	650	700	750	800
5	250	225	200	175	150
10	400			355	315
20	700				630

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)											
	0.3			0.5			0.7			1.0		
	Screw lead (mm)											
	5	10	20	5	10	20	5	10	20	5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
150	40.0	27.5	15.0	40.0	20.0	11.7	40.0	18.3	10.0	23.3	14.2	6.7
200	40.0	27.5	15.0	40.0	20.0	11.7	32.5	18.3	10.0	18.3	14.2	6.7
250	40.0	27.5	15.0	40.0	20.0	11.7	25.8	18.3	8.3	13.3	12.9	6.3
300	19.2	27.5	15.0	19.2	20.0	11.7	19.2	18.3	8.3		12.9	6.3
325	19.2	27.5	15.0	19.2	20.0	11.7	16.7	18.3	8.3		12.9	6.3
400		27.5	15.0		20.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		17.5	10.0		15.0	8.3		10.8	6.3
600		15.0	13.3		13.3	10.0		13.3	8.3		6.3	6.3
635		4.6	11.3		4.6	8.3		4.6	6.7		3.3	5.0
700			11.3			8.3			6.7			5.0
800			11.3			7.5			6.7			4.2
900			10.0			7.5			6.7			4.2
1,000			6.3			6.3			5.0			2.5
1100			6.3			4.2			2.5			1.7
1120			1.3			1.3			1.3			

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.7		
	Screw lead (mm)					
	5	10	20	5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	7.5
50	40.0	27.5	18.3	40.0	27.5	7.5
100	40.0	27.5	18.3	40.0	27.5	7.5
150	26.7	23.3	10.0	26.7	20.0	5.0
200	26.7	23.3	10.0	26.7	20.0	5.0
250	8.3	11.7	10.0	8.3	11.7	5.0
300		11.7	10.0		11.7	5.0
400		3.3	6.7		3.3	4.2
500			6.7			4.2
700			3.3			1.7

[Vertical Installation]

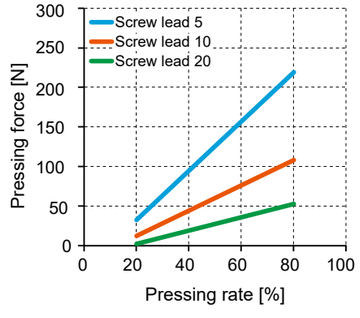
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.5		
	Screw Lead (mm)					
	5	10	20	5	10	20
6	10.0			10.0		
12	10.0	3.3		10.0	3.3	
25	10.0	3.3	0.8	10.0	3.3	0.8
200	10.0	3.3	0.8	10.0	3.3	0.8
250	7.5	3.3	0.8	5.8	3.3	0.8
300	3.8	3.3	0.8	1.7	3.3	0.8
325	0.8	3.3	0.8		2.9	0.8
400		3.3	0.8		2.9	0.8
500		2.5	0.8		1.7	0.8
600		0.8	0.8		0.8	0.8
900			0.8			0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G)		
	0.3		
	Screw lead (mm)		
	5	10	20
6	10.0		
12	10.0	3.3	
25	10.0	3.3	0.8
50	10.0	3.3	0.8
100	8.3	3.3	0.8
150	6.7	2.1	0.8
200	2.5	2.1	0.8
210	0.8	1.3	0.8
300		1.3	0.8
325		0.4	0.8
400			0.8
500			0.4

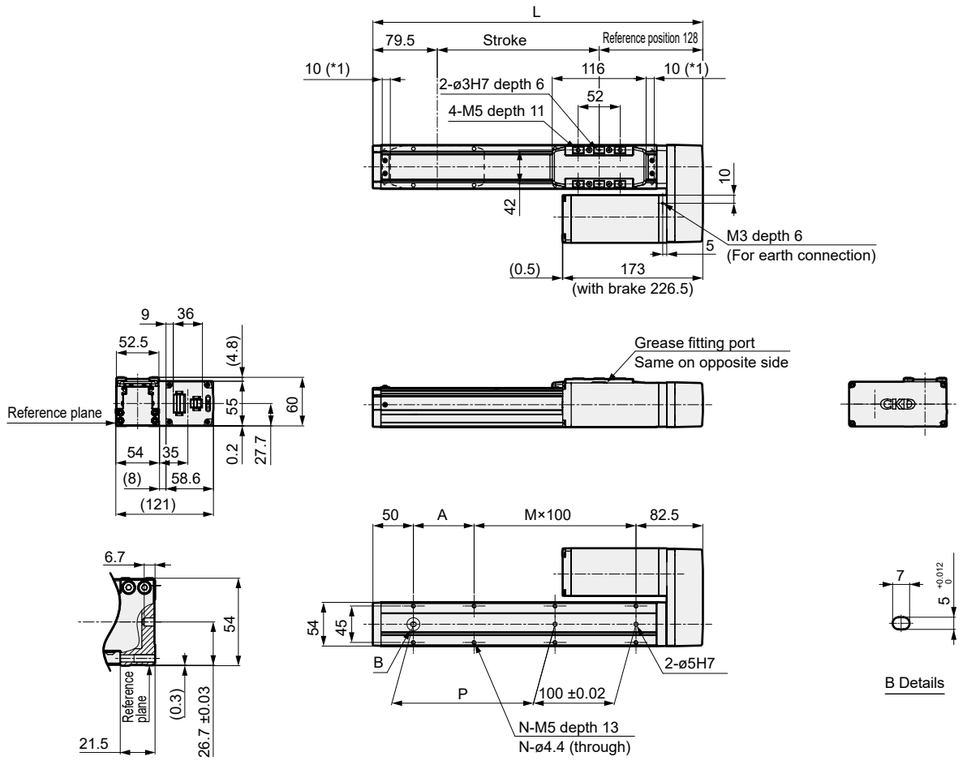
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing Motor Right Side Return Mount

● EJSG-05R

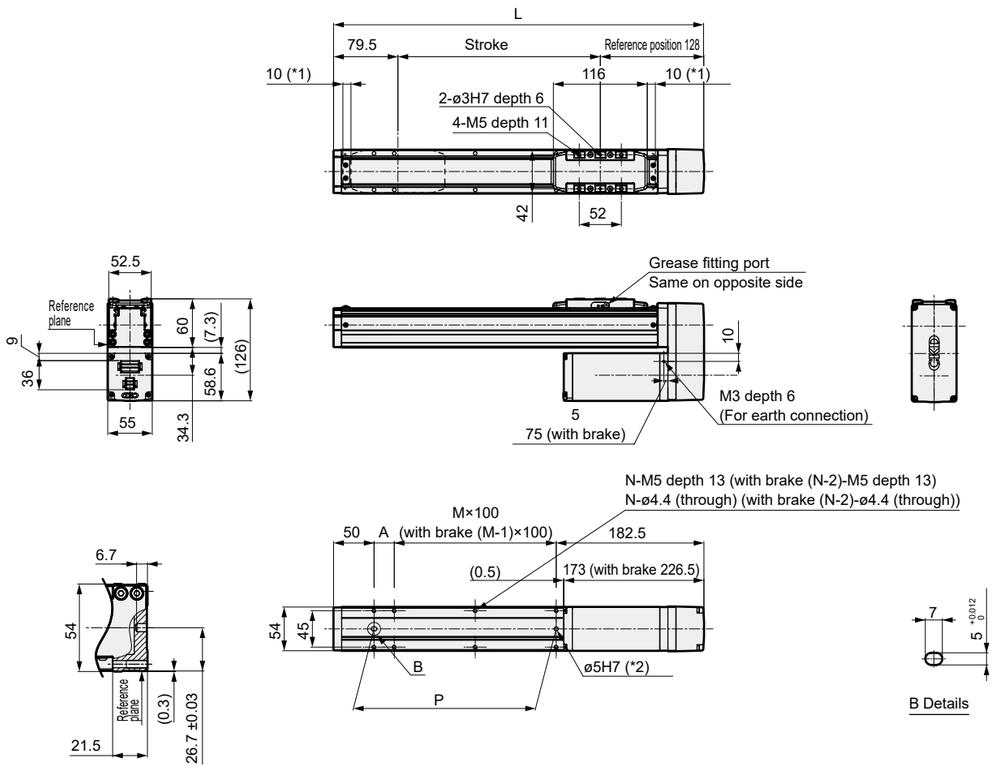


*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.6	2.7	2.8	3.0	3.1	3.3	3.4	3.5	3.7	3.8	3.9	4.1	4.2	4.4	4.5	4.6
	With Brake	3.3	3.5	3.6	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.3	5.4

External Dimension Drawing Bottom-Mounted Reverse Parallel Motor Mount

● EJSG-05D

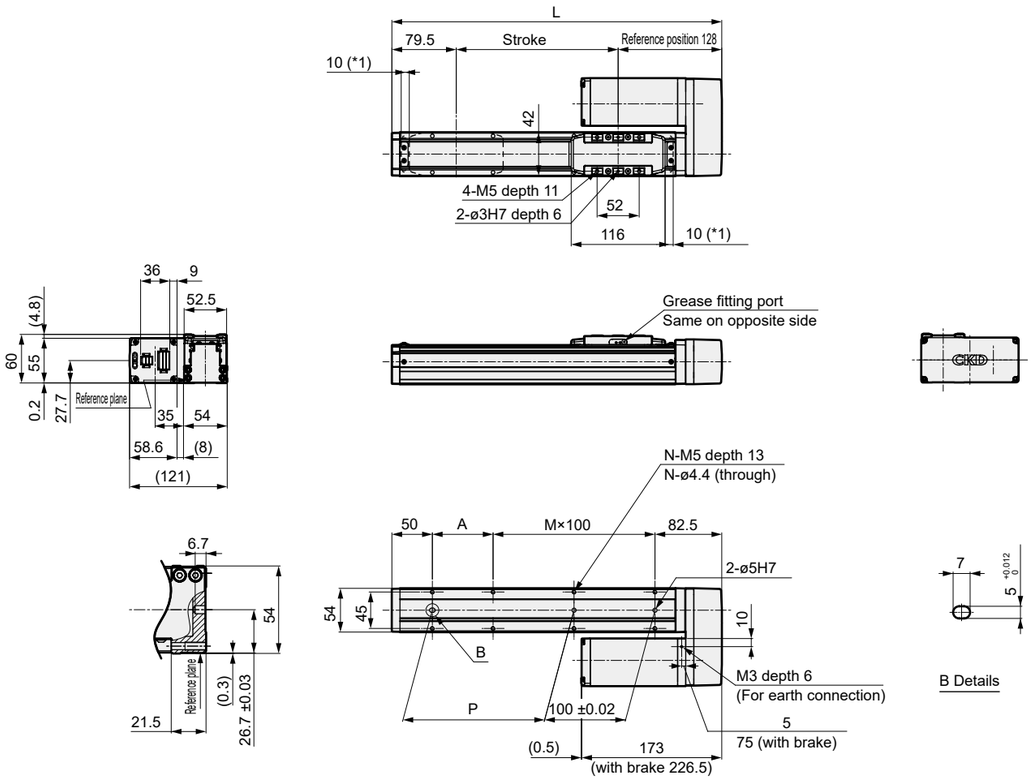


*1: Operating range to the mechanical stopper
*2: When with brake, ø5H7 is hidden by the motor part and cannot be used.

Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		250	300	350	400	450	500	550	600	650	700	750	800
L		457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7
N		8	8	10	10	12	12	14	14	16	16	18	18
P		225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	3.1	3.3	3.4	3.5	3.7	3.8	3.9	4.1	4.2	4.4	4.5	4.6
	With Brake	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.3	5.4

External Dimension Drawing Left-Side Reverse Parallel Motor Mount

● EJSG-05L



*1: Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.6	2.7	2.8	3.0	3.1	3.3	3.4	3.5	3.7	3.8	3.9	4.1	4.2	4.4	4.5	4.6
	With Brake	3.3	3.5	3.6	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.3	5.4

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EJSG-08E

Inline Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 ❶ E ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - C ❼ S03

❶Body Size	
08	Body width 82 mm

Applicable Controller *1
ECMG
ECG

❷Motor Mounting Direction	
E	Inline Mount

❸Screw Lead	
05	5 mm
10	10 mm
20	20 mm

❹Stroke	
0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake *2	
N	None
B	Yes

❻Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Relay Cable*3	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG		
Motor		□56 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø16					
Stroke mm		50 to 1100					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	43.3	28.3	3.3	43.3	28.3	3.3
Operating Speed Range *2 mm/s		6 to 230	12 to 430	25 to 800	6 to 150	12 to 250	25 to 500
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 37.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)								
	50 to 700	750	800	850	900	950	1,000	1050	1100
5	230	220	200	175	160	145	130	120	110
10	430		400	355	320	290	260	240	220
20	800			710	640	580	530	480	440

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)				
	50 to 900	950	1,000	1050	1100
5	150	145	130	120	110
10	250			240	220
20	500			480	440

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
150	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	50.0	70.0	26.7
200	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	18.3	40.0	26.7
230	18.3	70.0	30.0	18.3	70.0	26.7	18.3	43.3	26.7		40.0	24.2
250		70.0	30.0		70.0	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
350		43.3	30.0		43.3	26.7		43.3	26.7		3.8	24.2
400		40.0	30.0		40.0	26.7		29.2	26.7			24.2
430		12.5	30.0		12.5	26.7		12.5	26.7			16.7
500			30.0			26.7			26.7			16.7
600			22.9			22.5			22.5			13.8
700			22.5			22.5			22.5			12.5
800			5.4			5.0			5.0			2.5

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	80.0	70.0	30.0	80.0	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	70.0	18.3
150	40.0	70.0	30.0	35.0	70.0	18.3
200		28.3	30.0		17.5	18.3
250		28.3	26.7		17.5	18.3
300			26.7			18.3
400			20.0			11.7
500			3.3			

[Vertical Installation]

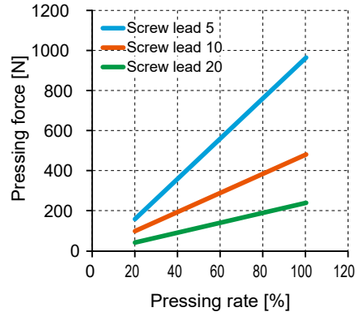
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20
6	43.3			43.3		
12	43.3	28.3		43.3	28.3	
25	43.3	28.3	3.3	43.3	28.3	3.3
50	43.3	28.3	3.3	43.3	28.3	3.3
100	16.7	24.2	3.3	16.7	12.1	3.3
150	16.7	22.5	3.3	16.7	12.1	3.3
200	5.0	14.2	3.3	5.0	12.1	3.3
230	0.8	13.3	3.3		12.1	3.3
250		13.3	3.3		12.1	3.3
300		5.4	3.3		2.1	3.3
350		5.4	3.3		2.1	3.3
400		2.1	3.3		2.1	3.3
500			3.3			3.3
600			2.5			2.5
700			0.8			0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	43.3		
12	43.3	28.3	
25	43.3	28.3	3.3
50	43.3	28.3	3.3
75	15.0	12.5	3.3
100	15.0	12.5	3.3
125	2.9	10.0	3.3
150	2.9	10.0	3.3
200		1.7	3.3
250		1.7	3.3
300			3.3
350			0.8

Pushing Force

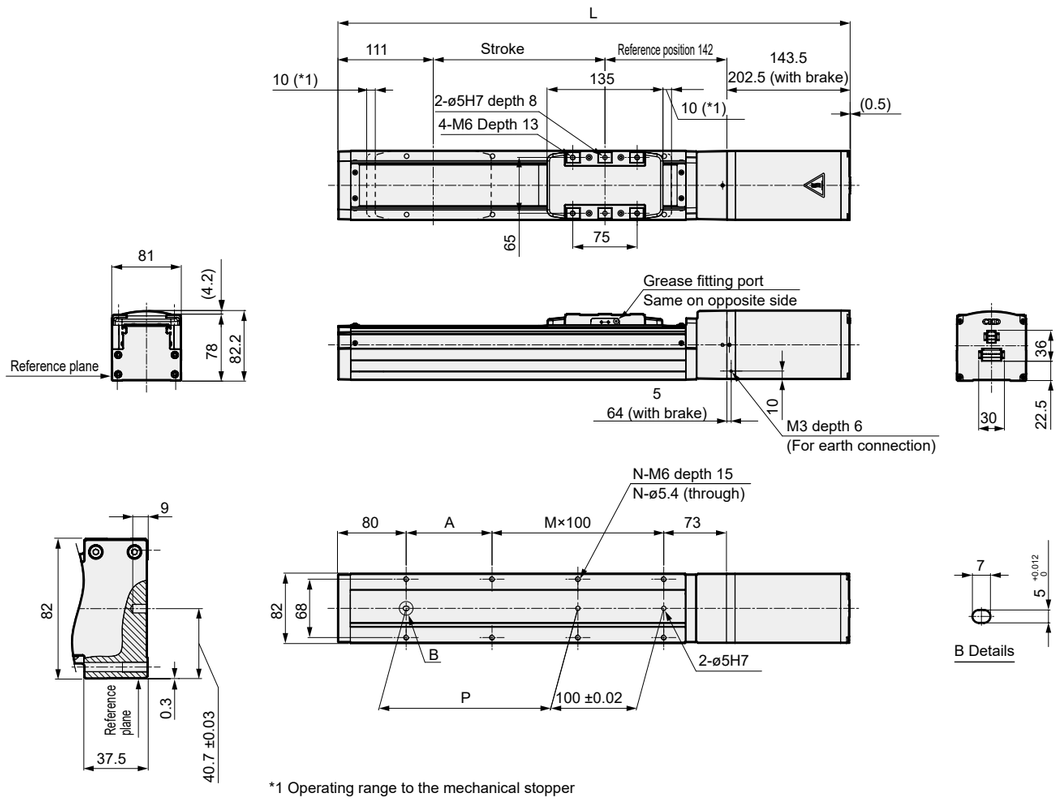


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

EJSG-08E

Outline Dimensions, Inline Motor Mount

● EJSG-08E



*1 Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without Brake	446.5	496.5	546.5	596.5	646.5	696.5	746.5	796.5	846.5	896.5	946.5	996.5	1046.5	1096.5	1146.5	1196.5
	With Brake	505.5	555.5	605.5	655.5	705.5	755.5	805.5	855.5	905.5	955.5	1005.5	1055.5	1105.5	1155.5	1205.5	1255.5
A		150	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		4	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without Brake	5.7	6.0	6.4	6.7	7.0	7.4	7.7	8.0	8.4	8.7	9.0	9.4	9.7	10.0	10.4	10.7
	With Brake	6.7	7.1	7.4	7.7	8.1	8.4	8.7	9.1	9.4	9.7	10.1	10.4	10.7	11.1	11.4	11.8

Stroke Code		0850	0900	0950	1,000	1050	1100
Stroke (mm)		850	900	950	1,000	1050	1100
L	Without Brake	1246.5	1296.5	1346.5	1396.5	1446.5	1496.5
	With Brake	1305.5	1355.5	1405.5	1455.5	1505.5	1555.5
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	11.0	11.4	11.7	12.1	12.4	12.7
	With Brake	12.1	12.4	12.8	13.1	13.4	13.8

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EJSG-08□

Reverse Parallel Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 ❶ R ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - C ❼ S03

❶Body Size

08	Body width 82 mm

Applicable Controller *1

ECMG
ECG

❷Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹Stroke *2

0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake *3

N	None
B	Yes

❻Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "1100 (1100 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, please refer to P. 576.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG	
Motor		□56 Stepping Motor				
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				
Drive Method		Ball screw ø16				
Stroke mm		50 to 1100				
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	33.3	21.7	3.3	33.3	18.3	3.3
Operating Speed Range mm/s		6 to 200	12 to 430	25 to 800	6 to 125	12 to 250	25 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 41.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 750	800	850	900	950	1,000	1050	1100
5	200		175	160	145	130	120	110
10	430	400	355	320	290	260	240	220
20	800		710	640	580	530	480	440

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)		
	50 to 1000	1050	1100
5	125	120	110
10	250	240	220
20	400		

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)											
	0.3			0.5			0.7			1.0		
	Screw lead (mm)											
	5	10	20	5	10	20	5	10	20	5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
50	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	40.0	70.0	30.0
150	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7	8.8	70.0	26.7
200	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7		40.0	26.7
250		70.0	30.0		68.3	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
350		43.3	30.0		43.3	26.7		40.0	26.7		3.8	16.3
400		40.0	30.0		40.0	26.7		25.0	26.7			16.3
430		12.5	30.0		12.5	26.7		12.5	26.7			15.8
500			30.0			26.7			26.7			15.8
600			16.7			16.7			16.7			9.6
700			16.7			16.7			16.7			9.2
800			3.8			3.3			3.3			1.7

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.7		
	Screw lead (mm)					
	5	10	20	5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	68.3	70.0	30.0	68.3	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	30.0	18.3
150		70.0	30.0		30.0	18.3
200		28.3	30.0		17.5	18.3
250		21.7	6.7		17.5	6.7
300			6.7			6.7
400			3.3			3.3

[Vertical Installation]

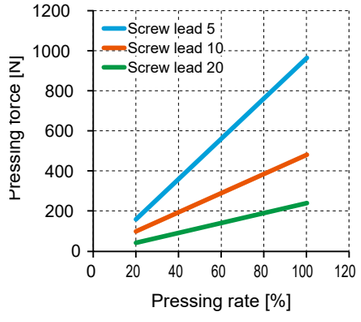
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.5		
	Screw lead (mm)					
	5	10	20	5	10	20
6	33.3			33.3		
12	33.3	21.7		33.3	21.7	
25	33.3	21.7	3.3	33.3	21.7	3.3
50	33.3	21.7	3.3	33.3	21.7	3.3
100	16.7	21.7	3.3	16.7	12.1	3.3
150	8.3	20.8	3.3	8.3	12.1	3.3
200	3.3	12.5	3.3	3.3	12.1	3.3
230		12.1	3.3		11.7	3.3
250		12.1	3.3		11.7	3.3
300		5.4	3.3		2.1	3.3
350		5.0	3.3		2.1	3.3
400		0.8	3.3			3.3
500			3.3			3.3
600			1.7			1.7

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G)		
	0.3		
	Screw lead (mm)		
	5	10	20
6	33.3		
12	33.3	18.3	
25	33.3	18.3	3.3
50	25.0	18.3	3.3
75	15.0	12.5	3.3
100	12.5	12.5	3.3
125	2.9	8.3	3.3
150		8.3	3.3
200		1.7	3.3
250			3.3
300			3.3
350			0.8

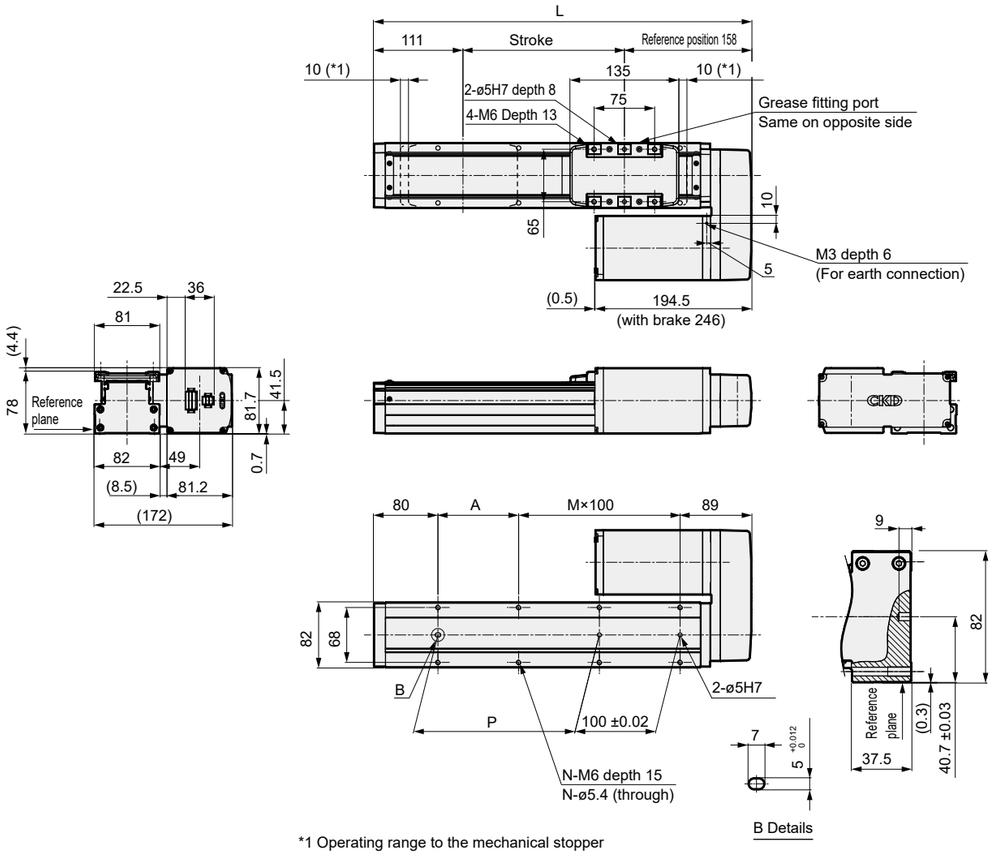
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing Motor Right Side Return Mount

● EJSG-08R



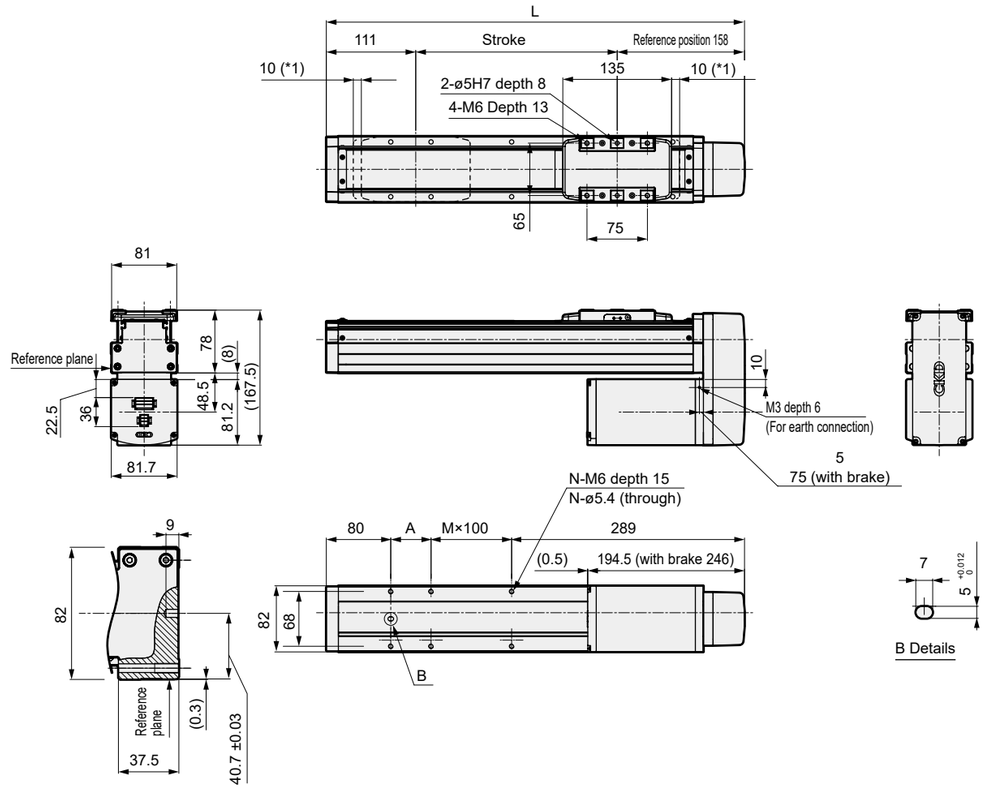
*1 Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		150	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		4	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without Brake	5.9	6.2	6.6	6.9	7.2	7.6	7.9	8.2	8.6	8.9	9.2	9.6	9.9	10.2	10.6	10.9
	With Brake	6.9	7.3	7.6	7.9	8.3	8.6	8.9	9.3	9.6	9.9	10.3	10.6	10.9	11.3	11.6	12.0

Stroke Code		0850	0900	0950	1,000	1050	1100
Stroke (mm)		850	900	950	1,000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	11.3	11.6	11.9	12.3	12.6	12.9
	With Brake	12.3	12.6	13.0	13.3	13.6	14.0

External Dimension Drawing Bottom-Mounted Reverse Parallel Motor Mount

● EJSG-08D



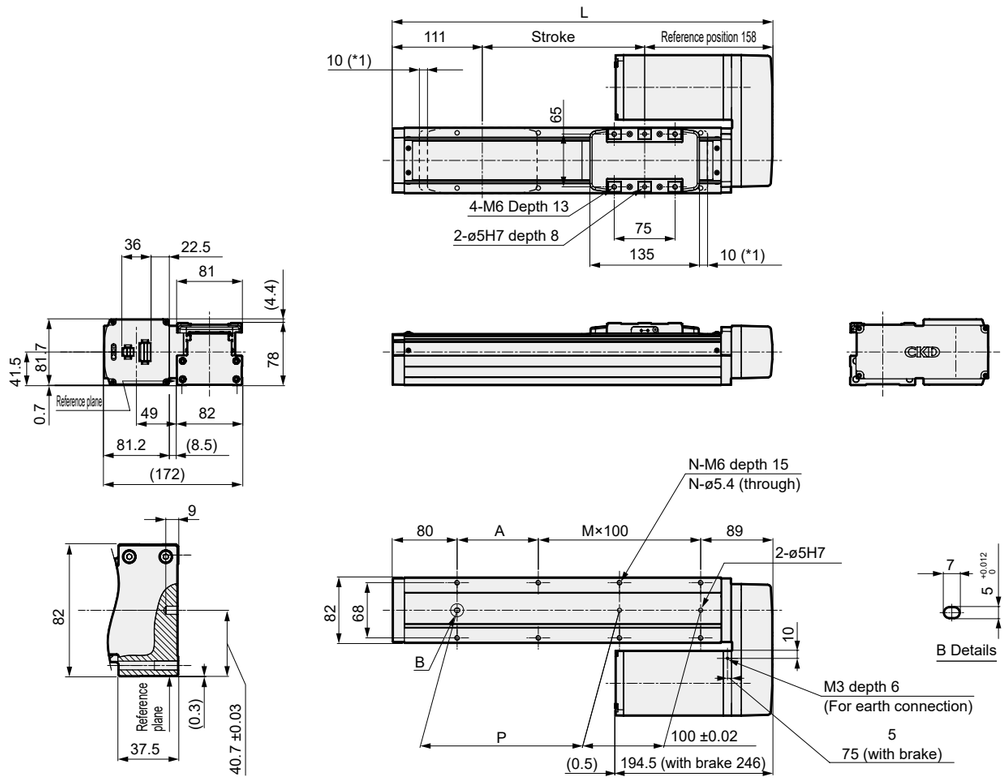
*1 Operating range to the mechanical stopper

Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1,000
Stroke (mm)		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000
L		519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
Weight (kg)	Without Brake	7.2	7.6	7.9	8.2	8.6	8.9	9.2	9.6	9.9	10.2	10.6	10.9	11.3	11.6	11.9	12.3
	With Brake	8.3	8.6	8.9	9.3	9.6	9.9	10.3	10.6	10.9	11.3	11.6	12.0	12.3	12.6	13.0	13.3

Stroke Code		1050	1100
Stroke (mm)		1050	1100
L		1319	1369
A		50	100
M		9	9
N		22	22
Weight (kg)	Without Brake	12.6	12.9
	With Brake	13.6	14.0

External Dimension Drawing Left-Side Reverse Parallel Motor Mount

● EJSG-08L



*1 Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		150	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		4	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without Brake	5.9	6.2	6.6	6.9	7.2	7.6	7.9	8.2	8.6	8.9	9.2	9.6	9.9	10.2	10.6	10.9
	With Brake	6.9	7.3	7.6	7.9	8.3	8.6	8.9	9.3	9.6	9.9	10.3	10.6	10.9	11.3	11.6	12.0

Stroke Code		0850	0900	0950	1,000	1050	1100
Stroke (mm)		850	900	950	1,000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	11.3	11.6	11.9	12.3	12.6	12.9
	With Brake	12.3	12.6	13.0	13.3	13.6	14.0

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator with Motor Specification

EJSG-G

Slider Type Dust-proof Specification

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Slider Type
EJSG
EBS
Ending

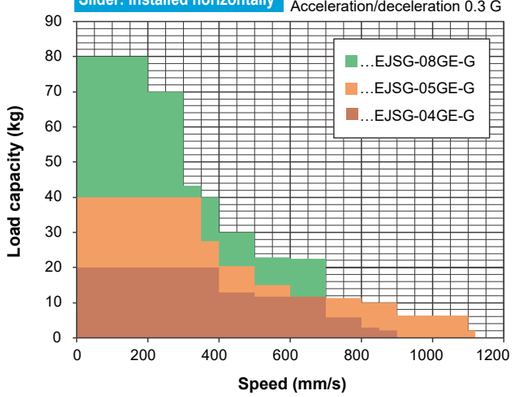
EJSG-G Series

System Table

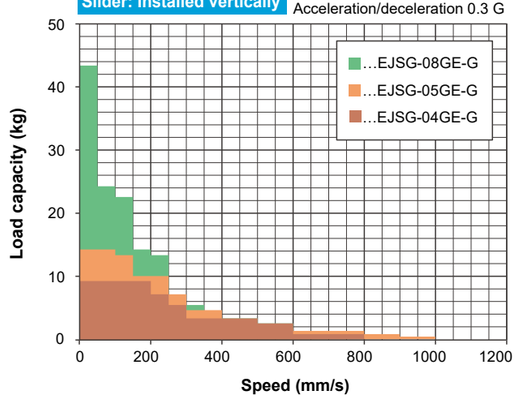
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100	Page
ECMG Series		EJSG-04E06-G	□35	Straight	44	6	20.0	9.2	155	450 mm/s									400	340	290	250	220	190	170							52
		EJSG-04E12-G				12	15.0	3.3	77	900									800	680	580	500	440	390	340							
		EJSG-04R/D/L06-G		Return		6	20.0	9.2	155	375										340	290	250	220	190	170							54
		EJSG-04R/D/L12-G				12	15.0	3.3	77	600											580	500	440	390	340							
		EJSG-05E05-G	□42	Straight	54	5	40.0	14.2	220	375									360	300	260	225	200	175	150							56
		EJSG-05E10-G				10	27.5	7.1	110	750									720	615	525	455	400	355	315							
		EJSG-05E20-G				20	18.3	2.5	55	1120											1050	910	800	710	630							
		EJSG-05R/D/L05-G		Return		5	40.0	10.0	220	350										300	260	225	220	175	150							58
		EJSG-05R/D/L10-G				10	27.5	3.3	110	635										615	525	455	400	355	315							
		EJSG-05R/D/L20-G				20	18.3	0.8	55	1120											1050	910	800	710	630							
		EJSG-08E05-G	□56	Straight	82	5	80.0	43.3	965	230														220	200	175	160	145	130	120	110	60
		EJSG-08E10-G				10	70.0	28.3	482	430															400	355	320	290	260	240	220	
		EJSG-08E20-G				20	30.0	3.3	241	800																710	640	580	530	480	440	
		EJSG-08R/D/L05-G		Return		5	80.0	33.3	965	200																175	160	145	130	120	110	62
		EJSG-08R/D/L10-G				10	70.0	21.7	482	430															400	355	320	290	260	240	220	
		EJSG-08R/D/L20-G				20	30.0	3.3	241	800																710	640	580	530	480	440	

* This data is for an acceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.

Slider: Installed horizontally Acceleration/deceleration 0.3 G



Slider: Installed vertically Acceleration/deceleration 0.3 G



Slider Type
EJSG
EBS
Ending

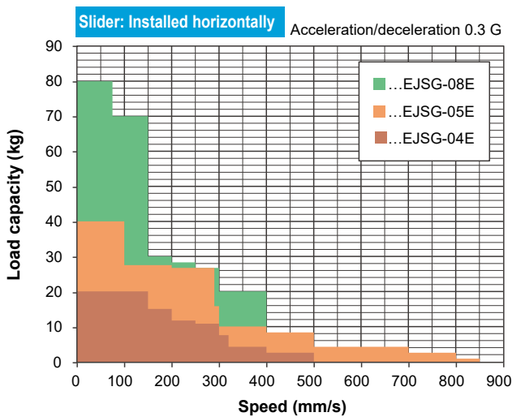
EJSG-G Series

System Table

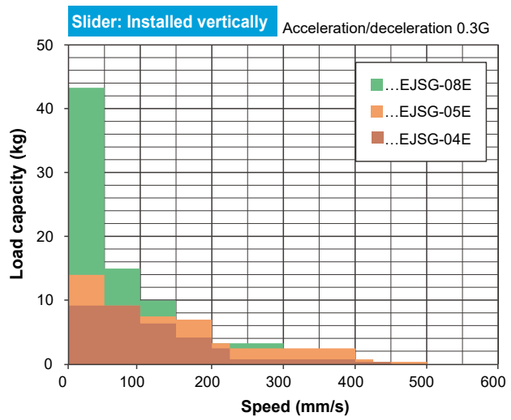
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100	Page
ECG Series		EJSG-04E06-G	□35	Straight	44	6	20.0	9.2	155	320 mm/s											290	250	220	190	170							52
		EJSG-04E12-G				12	15.0	3.3	77	500													440	390	340							
		EJSG-04R/D/L06-G		Return		6	20.0	9.2	155	250													220	190	170							54
		EJSG-04R/D/L12-G				12	11.7	3.3	77	400														390	340							
		EJSG-05E05-G	□42	Straight	54	5	40.0	14.0	220	290											260	225	200	175	150							56
		EJSG-05E10-G				10	27.5	7.0	110	500												455	400	355	315							
		EJSG-05E20-G				20	18.3	2.5	55	850													800	710	630							
		EJSG-05R/D/L05-G		Return		5	40.0	10.0	220	250												225	200	175	150							58
		EJSG-05R/D/L10-G				10	27.5	3.3	110	400														355	315							
		EJSG-05R/D/L20-G				20	18.3	0.8	55	700															630							
		EJSG-08E05-G	□56	Straight	82	5	80.0	43.3	965	150																		145	130	120	110	60
		EJSG-08E10-G				10	70.0	28.3	482	250																				240	220	
		EJSG-08E20-G				20	30.0	3.3	241	500																				480	440	
		EJSG-08R/D/L05-G		Return		5	80.0	33.3	965	125																				120	110	62
		EJSG-08R/D/L10-G				10	70.0	18.3	482	250																				240	220	
		EJSG-08R/D/L20-G				20	30.0	3.3	241	400																						

* This data is for a power supply voltage and acceleration/deceleration of 0.3G.
* For wall mounting, the payload is the same as for horizontal installation.

Slider: Installed horizontally Acceleration/deceleration 0.3 G



Slider: Installed vertically Acceleration/deceleration 0.3G



Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type Dust-proof Specification

EJSG-04E-G

Inline Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 ❶ E ❷ 06 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - G

❶Applicable Controller *1
ECMG
ECG

❶Body Size	
04	Body width 44 mm

❷Motor Mounting Direction	
E	Inline Mount

❸Screw Lead	
06	6 mm
12	12 mm

❹Stroke	
0050 to 0800	50 mm (every 50 mm) 800 mm

❺Brake *2	
N	None
B	Yes

❻Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Fitting *4	
V	Yes

❽Relay Cable*3	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG		ECG	
Motor		□35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 800			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	15.0
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 450	15 to 900	7 to 320	15 to 500
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		Corrosive gas, explosive gas			
Protection Structure		IP50			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 53.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 450	500	550	600	650	700	750	800
6	450	400	340	290	250	220	190	170
12	900	800	680	580	500	440	390	340

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
6	320	290	250	220	190	170
12	500			440	390	340

Speed and Payload

[Horizontal Installation]

[Connected Controller ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3		0.5		0.7		1.0	
	Screw Lead (mm)							
	6	12	6	12	6	12	6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
350	20.0	15.0	20.0	10.0	13.3	8.3	12.1	5.4
400	20.0	15.0	20.0	10.0	13.3	8.3	9.2	5.4
450	11.7	12.9	11.7	10.0	11.7	8.3	8.3	5.4
500		12.9		10.0		8.3		5.4
600		11.7		9.2		7.5		5.4
700		11.7		8.3		5.8		5.4
800		5.8		5.8		5.8		2.5
850		2.9		2.5		2.5		1.7
900		2.1		1.7		1.7		0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.7	
	Screw Lead (mm)			
	6	12	6	12
7	20.0		20.0	
15	20.0	15.0	20.0	15.0
50	20.0	15.0	20.0	15.0
100	20.0	15.0	20.0	15.0
150	20.0	15.0	12.5	10.8
200	15.0	15.0	12.5	10.8
250	11.7	10.8	11.7	8.3
300	7.5	10.8	7.5	8.3
320	7.5	4.2	7.5	4.2
400		4.2		4.2
500		2.5		2.5

[Vertical Installation]

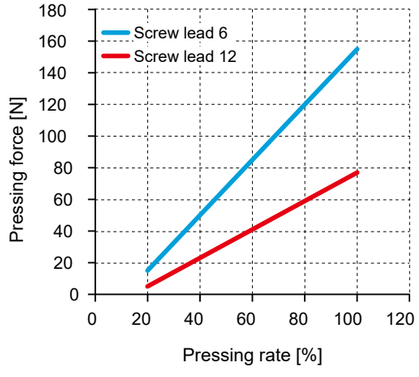
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.5	
	Screw Lead (mm)			
	6	12	6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
200	9.2	3.3	9.2	3.3
250	7.1	3.3	6.7	3.3
300	5.4	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
400	1.7	3.3		3.3
500		3.3		3.3
600		2.5		2.5
800		0.8		0.8

[Connected Controller ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)	
	0.3	
	Screw Lead (mm)	
	6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	9.2	3.3
150	6.7	3.3
200	4.2	3.3
225	1.7	2.5
250	1.7	2.5
275	0.4	2.5
300		2.5
350		0.8
400		0.8
450		0.4

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 18.
For the dimensions of the fitting, please refer to P. 64.

Electric Actuator Slider Type Dust-proof Specification

EJSG-04□-G

Reverse Parallel Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 R 06 0300 N B N - V C S03 - G

❶

Applicable Controller *1
ECMG
ECG

❶Body Size

04	Body width 44 mm

❷Motor Mounting Direction *2 *3

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸Screw Lead

06	6 mm
12	12 mm

❹Stroke *2 *3

0050 to 0800	50 mm (every 50 mm) 800 mm

❺Brake *4

N	None
B	Yes

❻Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Fitting *6

V	Yes

❽Relay Cable*5

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 When the motor mounting direction is "L", stroke 0050 (50 mm) cannot be selected.
*4 Select "Yes" for vertical use.
*5 For the external dimension drawing of the relay cable, please refer to P. 576.
*6 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG		ECG	
Motor		□35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 500			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	11.7
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 375	15 to 600	7 to 250	15 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		Corrosive gas, explosive gas			
Protection Structure		IP50			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 55.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 500	550	600	650	700	750	800
6	375	340	290	250	220	190	170
12	600		580	500	440	390	340

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)			
	50 to 650	700	750	800
6	250	220	190	170
12	400		390	340

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3		0.5		0.7		1.0	
	Screw lead (mm)							
	6	12	6	12	6	12	6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
250	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	11.7	5.4
350	20.0	15.0	20.0	10.0	13.3	8.3	11.3	5.4
375	15.8	15.0	15.8	10.0	13.3	8.3	9.2	5.4
400		15.0		10.0		8.3		5.4
450		11.7		10.0		8.3		5.4
500		0.8		0.8		0.8		

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.7	
	Screw Lead (mm)			
	6	12	6	12
7	20.0		20.0	
15	20.0	11.7	20.0	10.0
50	20.0	11.7	20.0	10.0
100	20.0	11.7	20.0	10.0
150	13.3	11.7	11.7	10.0
200	13.3	11.7	10.0	10.0
250	10.0	8.3	8.3	8.3
300		8.3		8.3
400		3.3		3.3

[Vertical Installation]

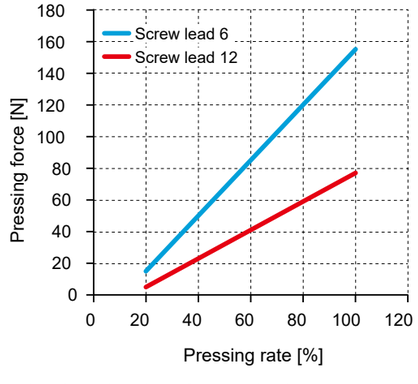
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3		0.5	
	Screw Lead (mm)			
	6	12	6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
150	9.2	3.3	9.2	3.3
200	8.3	3.3	8.3	3.3
250	5.8	3.3	5.8	3.3
300	4.6	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
375	0.8	3.3		3.3
450		2.1		2.1
500		0.8		0.8

[Connected Controller ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)	
	0.3	
	Screw Lead (mm)	
	6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	6.7	3.3
150	3.3	3.3
200	2.5	3.3
225	0.8	1.7
300		1.7
350		0.8

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 22 to 24.
For the dimensions of the fitting, please refer to P. 64.

Electric Actuator Slider Type Dust-proof Specification

EJSG-05E-G

Inline Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 E 05 0300 N B N - V C S03 - G

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

05	Body width 54 mm

❷ Motor Mounting Direction

E	Inline Mount

❸ Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹ Stroke

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *2

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting *4

V	Yes

❽ Relay Cable*3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG			ECG		
Motor		□42 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø12					
Stroke mm		50 to 800					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	14.2	7.1	2.5	14.0	7.0	2.5
Operating Speed Range *2 mm/s		6 to 375	12 to 750	25 to 1120	6 to 290	12 to 500	25 to 850
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		Corrosive gas, explosive gas					
Protection Structure		IP50					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 57.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 450	500	550	600	650	700	750	800
5	375	360	300	260	225	200	175	150
10	750	720	615	525	455	400	355	315
20	1120			1050	910	800	710	630

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
5	290	260	225	200	175	150
10	500		455	400	355	315
20	850			800	710	630

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
200	40.0	27.5	18.3	40.0	25.0	11.7	40.0	18.3	10.0	30.4	14.2	6.7
250	40.0	27.5	15.0	40.0	25.0	11.7	33.3	18.3	8.3	20.4	12.9	6.3
300	40.0	27.5	15.0	40.0	25.0	11.7	24.2	18.3	8.3	13.8	12.9	6.3
350	40.0	27.5	15.0	35.8	25.0	11.7	24.2	18.3	8.3	9.2	12.9	6.3
375	20.0	27.5	15.0	20.0	25.0	11.7	20.0	18.3	8.3	7.9	12.9	6.3
400		27.5	15.0		25.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		20.4	10.0		18.3	8.3		10.8	6.3
600		15.0	13.3		15.0	10.0		15.0	8.3		6.3	6.3
700		6.7	11.3		6.7	8.3		6.7	6.7		3.3	5.0
750		2.9	11.3		2.9	7.5		2.9	6.7		2.9	4.2
800			11.3			7.5			6.7			4.2
900			10.0			7.5			6.7			4.2
1,000			6.3			6.3			5.0			2.9
1100			6.3			4.2			2.5			1.7
1120			2.1			2.1			2.1			1.7

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	8.3
50	40.0	27.5	18.3	40.0	27.5	8.3
100	40.0	27.5	18.3	40.0	27.5	8.3
150	26.7	27.5	10.0	26.7	27.5	6.7
200	26.7	27.5	10.0	26.7	27.5	6.7
250	26.7	15.8	10.0	26.7	12.5	6.7
290	26.7	15.8	10.0	15.8	12.5	6.7
300		15.8	10.0		12.5	6.7
400		10.0	8.3		9.2	5.0
500		5.8	8.3		2.5	5.0
700			4.2			2.5
800			2.5			1.7
850			0.8			0.4

[Vertical Installation]

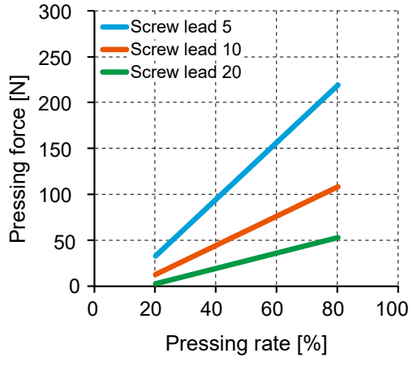
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	14.2			14.2		
12	14.2	7.1		14.2	7.1	
25	14.2	7.1	2.5	14.2	7.1	2.5
100	14.2	7.1	2.5	14.2	7.1	2.5
150	13.3	7.1	2.5	13.3	7.1	2.5
250	10.0	7.1	2.5	10.0	7.1	2.5
300	6.3	7.1	2.5	6.3	7.1	2.5
350	2.9	4.6	2.5	2.9	3.8	2.5
375	1.3	4.6	2.5	1.3	3.8	2.5
400		4.6	2.5		3.8	2.5
500		2.5	1.3		1.7	1.3
600		1.7	1.3		0.8	1.3
650		0.8	1.3			1.3
800			1.3			1.3
900			0.8			0.8
1,000			0.4			

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	14.0		
12	14.0	7.0	
25	14.0	7.0	2.5
50	14.0	7.0	2.5
100	9.2	7.0	2.5
150	7.5	7.0	2.5
200	4.2	7.0	2.5
210	3.3	2.5	2.5
225	3.3	2.5	2.5
250	2.1	2.5	2.5
300		2.5	2.5
325		2.1	2.5
350		2.1	2.5
400		1.3	2.5
425		0.8	0.4
500			0.4

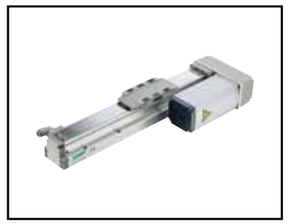
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 28.
For the dimensions of the fitting, please refer to P. 64.



Electric Actuator Slider Type Dust-proof Specification

EJSG-05□-G

Reverse Parallel Motor Mount Type

□42 Stepping Motor

CE UKCA RoHS

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 R 05 0300 N B N - V C S03 - G

❶ 05

Applicable Controller *1
ECMG
ECG

❷ R

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸ 05

05	5 mm
10	10 mm
20	20 mm

❹ 0300

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ N

N	None
B	Yes

❻ B

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ V

V	Yes

❽ S03

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 When the motor mounting direction is "L", stroke 0050 (50 mm) cannot be selected.
*4 Select "Yes" for vertical use.
*5 For the external dimension drawing of the relay cable, please refer to P. 576.
*6 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG			ECG		
Motor		□42 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø12					
Stroke mm		50 to 800					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	10.0	3.3	0.8	10.0	3.3	0.8
Operating Speed Range *2 mm/s		6 to 325	12 to 635	25 to 1120	6 to 250	12 to 400	25 to 700
Max. Acceleration/Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20					
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		Corrosive gas, explosive gas					
Protection Structure		IP50					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 59.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 450	550	600	650	700	750	800
5	350	300	260	225	200	175	150
10	635	615	525	455	400	355	315
20	1120		1050	910	800	710	630

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 600	650	700	750	800	
5	250	225	200	175	150	
10	400			355	315	
20	700				630	

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
150	40.0	27.5	15.0	40.0	20.0	11.7	40.0	18.3	10.0	23.3	14.2	6.7
200	40.0	27.5	15.0	40.0	20.0	11.7	32.5	18.3	10.0	18.3	14.2	6.7
250	40.0	27.5	15.0	40.0	20.0	11.7	25.8	18.3	8.3	13.3	12.9	6.3
300	19.2	27.5	15.0	19.2	20.0	11.7	19.2	18.3	8.3		12.9	6.3
325	19.2	27.5	15.0	19.2	20.0	11.7	16.7	18.3	8.3		12.9	6.3
400		27.5	15.0		20.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		17.5	10.0		15.0	8.3		10.8	6.3
600		15.0	13.3		13.3	10.0		13.3	8.3		6.3	6.3
635		4.6	11.3		4.6	8.3		4.6	6.7		3.3	5.0
700			11.3			8.3			6.7			5.0
800			11.3			7.5			6.7			4.2
900			10.0			7.5			6.7			4.2
1,000			6.3			6.3			5.0			2.5
1100			6.3			4.2			2.5			1.7
1120			1.3			1.3			1.3			

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	7.5
50	40.0	27.5	18.3	40.0	27.5	7.5
100	40.0	27.5	18.3	40.0	27.5	7.5
150	26.7	23.3	10.0	26.7	20.0	5.0
200	26.7	23.3	10.0	26.7	20.0	5.0
250	8.3	11.7	10.0	8.3	11.7	5.0
300		11.7	10.0		11.7	5.0
400		3.3	6.7		3.3	4.2
500			6.7			4.2
700			3.3			1.7

[Vertical Installation]

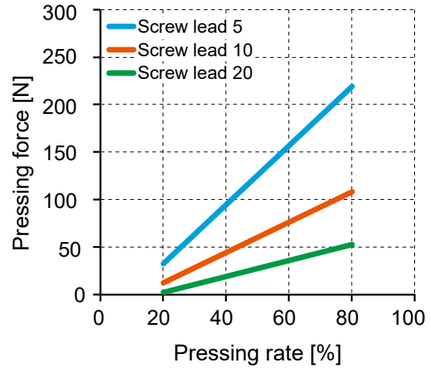
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	10.0			10.0		
12	10.0	3.3		10.0	3.3	
25	10.0	3.3	0.8	10.0	3.3	0.8
200	10.0	3.3	0.8	10.0	3.3	0.8
250	7.5	3.3	0.8	5.8	3.3	0.8
300	3.8	3.3	0.8	1.7	3.3	0.8
325	0.8	3.3	0.8		2.9	0.8
400		3.3	0.8		2.9	0.8
500		2.5	0.8		1.7	0.8
600		0.8	0.8		0.8	0.8
900			0.8			0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	10.0		
12	10.0	3.3	
25	10.0	3.3	0.8
50	10.0	3.3	0.8
100	8.3	3.3	0.8
150	6.7	2.1	0.8
200	2.5	2.1	0.8
210	0.8	1.3	0.8
300		1.3	0.8
325		0.4	0.8
400			0.8
500			0.4

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 32 to 34.
For the dimensions of the fitting, please refer to P. 64.

Electric Actuator Slider Type Dust-proof Specification

EJSG-08E-G

Inline Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 ❶ E ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - G

❶Body Size	
08	Body width 82 mm

Applicable Controller *1
ECMG
ECG

❷Motor Mounting Direction	
E	Inline Mount

❸Screw Lead	
05	5 mm
10	10 mm
20	20 mm

❹Stroke	
0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake *2	
N	None
B	Yes

❻Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting *4	
V	Yes

❽Relay Cable *3	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG			ECG		
Motor		□56 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø16					
Stroke mm		50 to 1100					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	43.3	28.3	3.3	43.3	28.3	3.3
Operating Speed Range *2 mm/s		6 to 230	12 to 430	25 to 800	6 to 150	12 to 250	25 to 500
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		Corrosive gas, explosive gas					
Protection Structure		IP50					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 61.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)								
	50 to 700	750	800	850	900	950	1,000	1050	1100
5	230	220	200	175	160	145	130	120	110
10	430		400	355	320	290	260	240	220
20	800			710	640	580	530	480	440

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)				
	50 to 900	950	1,000	1050	1100
5	150	145	130	120	110
10	250			240	220
20	500			480	440

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)											
	0.3			0.5			0.7			1.0		
	Screw lead (mm)											
	5	10	20	5	10	20	5	10	20	5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
150	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	50.0	70.0	26.7
200	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	18.3	40.0	26.7
230	18.3	70.0	30.0	18.3	70.0	26.7	18.3	43.3	26.7		40.0	24.2
250		70.0	30.0		70.0	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
350		43.3	30.0		43.3	26.7		43.3	26.7		3.8	24.2
400		40.0	30.0		40.0	26.7		29.2	26.7			24.2
430		12.5	30.0		12.5	26.7		12.5	26.7			16.7
500			30.0			26.7			26.7			16.7
600			22.9			22.5			22.5			13.8
700			22.5			22.5			22.5			12.5
800			5.4			5.0			5.0			2.5

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.7		
	Screw lead (mm)					
	5	10	20	5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	80.0	70.0	30.0	80.0	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	70.0	18.3
150	40.0	70.0	30.0	35.0	70.0	18.3
200		28.3	30.0		17.5	18.3
250		28.3	26.7		17.5	18.3
300			26.7			18.3
400			20.0			11.7
500			3.3			

[Vertical Installation]

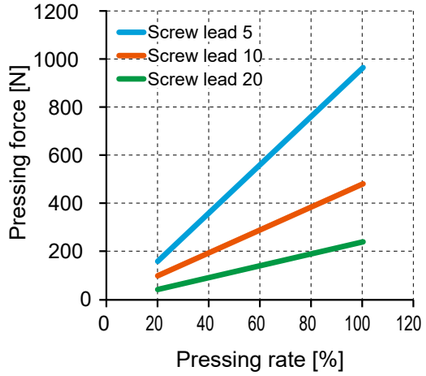
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.5		
	Screw lead (mm)					
	5	10	20	5	10	20
6	43.3			43.3		
12	43.3	28.3		43.3	28.3	
25	43.3	28.3	3.3	43.3	28.3	3.3
50	43.3	28.3	3.3	43.3	28.3	3.3
100	16.7	24.2	3.3	16.7	12.1	3.3
150	16.7	22.5	3.3	16.7	12.1	3.3
200	5.0	14.2	3.3	5.0	12.1	3.3
230	0.8	13.3	3.3		12.1	3.3
250		13.3	3.3		12.1	3.3
300		5.4	3.3		2.1	3.3
350		5.4	3.3		2.1	3.3
400		2.1	3.3		2.1	3.3
500			3.3			3.3
600			2.5			2.5
700			0.8			0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G)		
	0.3		
	Screw lead (mm)		
	5	10	20
6	43.3		
12	43.3	28.3	
25	43.3	28.3	3.3
50	43.3	28.3	3.3
75	15.0	12.5	3.3
100	15.0	12.5	3.3
125	2.9	10.0	3.3
150	2.9	10.0	3.3
200		1.7	3.3
250		1.7	3.3
300			3.3
350			0.8

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 38.
For the dimensions of the fitting, please refer to P. 64.

Electric Actuator Slider Type Dust-proof Specification

EJSG-08□-G

Reverse Parallel Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 R 05 0300 N B N - V C S03 - G

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Applicable Controller *1
ECMG
ECG

❶ Body Size	
08	Body width 82 mm

❷ Motor Mounting Direction *2	
R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸ Screw Lead	
05	5 mm
10	10 mm
20	20 mm

❹ Stroke *2	
0050 to 1100	50 mm (every 50 mm) 1100 mm

❺ Brake *3	
N	None
B	Yes

❻ Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting *5	
V	Yes

❽ Relay Cable *4	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "1100 (1100 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, please refer to P. 576.
*5 A connector cover and fitting are included to the actuator body at the time of product shipment.

Specifications

Connected Controller		ECMG			ECG		
Motor		□56 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø16					
Stroke mm		50 to 1100					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	33.3	21.7	3.3	33.3	18.3	3.3
Operating Speed Range mm/s		6 to 200	12 to 430	25 to 800	6 to 125	12 to 250	25 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		Corrosive gas, explosive gas					
Protection Structure		IP50					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 63.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)							
	50 to 750	800	850	900	950	1,000	1050	1100
5	200		175	160	145	130	120	110
10	430	400	355	320	290	260	240	220
20	800		710	640	580	530	480	440

[Connected Controller ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)		
	50 to 1000	1050	1100
5	125	120	110
10	250	240	220
20	400		

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)											
	0.3			0.5			0.7			1.0		
	Screw lead (mm)											
	5	10	20	5	10	20	5	10	20	5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
50	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	40.0	70.0	30.0
150	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7	8.8	70.0	26.7
200	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7		40.0	26.7
250		70.0	30.0		68.3	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
350		43.3	30.0		43.3	26.7		40.0	26.7		3.8	16.3
400		40.0	30.0		40.0	26.7		25.0	26.7			16.3
430		12.5	30.0		12.5	26.7		12.5	26.7			15.8
500			30.0			26.7			26.7			15.8
600			16.7			16.7			16.7			9.6
700			16.7			16.7			16.7			9.2
800			3.8			3.3			3.3			1.7

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.7		
	Screw lead (mm)					
	5	10	20	5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	68.3	70.0	30.0	68.3	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	30.0	18.3
150		70.0	30.0		30.0	18.3
200		28.3	30.0		17.5	18.3
250		21.7	6.7		17.5	6.7
300			6.7			6.7
400			3.3			3.3

[Vertical Installation]

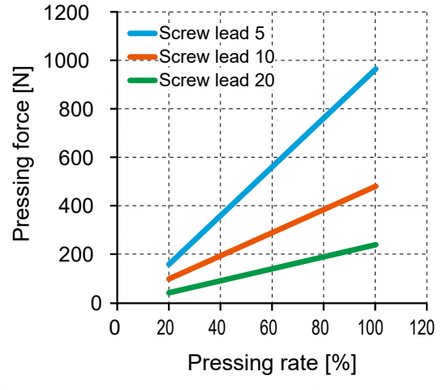
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.5		
	Screw lead (mm)					
	5	10	20	5	10	20
6	33.3			33.3		
12	33.3	21.7		33.3	21.7	
25	33.3	21.7	3.3	33.3	21.7	3.3
50	33.3	21.7	3.3	33.3	21.7	3.3
100	16.7	21.7	3.3	16.7	12.1	3.3
150	8.3	20.8	3.3	8.3	12.1	3.3
200	3.3	12.5	3.3	3.3	12.1	3.3
230		12.1	3.3		11.7	3.3
250		12.1	3.3		11.7	3.3
300		5.4	3.3		2.1	3.3
350		5.0	3.3		2.1	3.3
400		0.8	3.3			3.3
500			3.3			3.3
600			1.7			1.7

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G)		
	0.3		
	Screw lead (mm)		
	5	10	20
6	33.3		
12	33.3	18.3	
25	33.3	18.3	3.3
50	25.0	18.3	3.3
75	15.0	12.5	3.3
100	12.5	12.5	3.3
125	2.9	8.3	3.3
150		8.3	3.3
200		1.7	3.3
250			3.3
300			3.3
350			0.8

Pushing Force



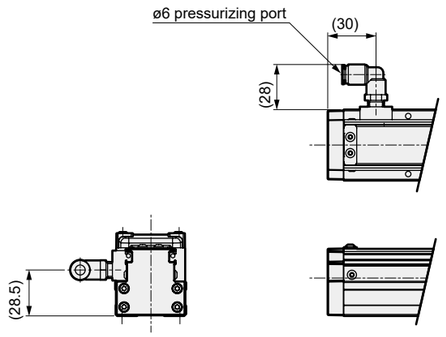
* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 42 to 44.
For the dimensions of the fitting, please refer to P. 64.

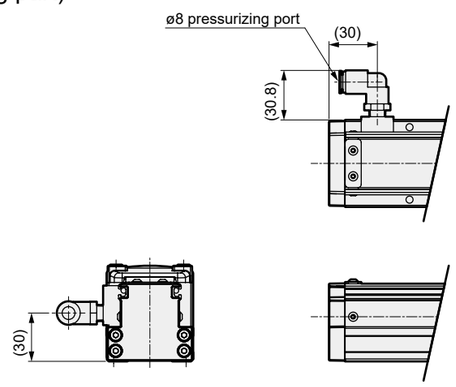
External Dimension Drawing

● EJSG-04-V-G (Fitting part)



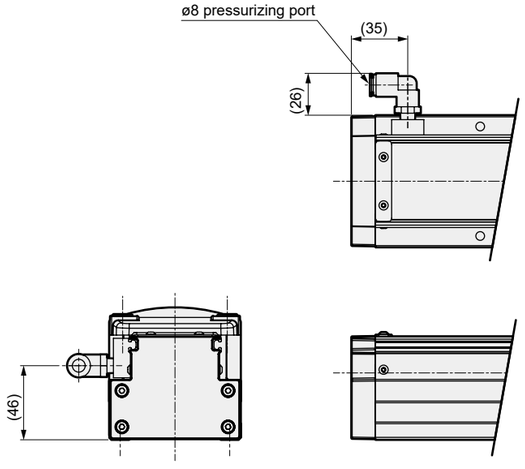
* For actuator dimensions, please refer to P. 18, 22 to 24.
* The fitting is included.

● EJSG-05-V-G (Fitting part)



* For actuator dimensions, please refer to P. 28, 32 to 34.
* The fitting is included.

● EJSG-08-V-G (Fitting part)



* For actuator dimensions, please refer to P. 38, 42 to 44.
* The fitting is included.

Protective Structure

● Protection Structure
■ IEC (International Electrotechnical Commission: International Electrotechnical Commission) Standard (IEC60529)
■ JIS C 0920 : 2003

IP− □□
- □ (first): Protection Characteristic Code (International Protection)
- □ (second): Second Characteristic Numeral (Degree of protection against ingress of water)

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

First Characteristic Numeral	Degree of Protection	
0	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.

Electric Actuator with Motor Specification

EJSG-C

Slider Type Low Dust Emission Specification

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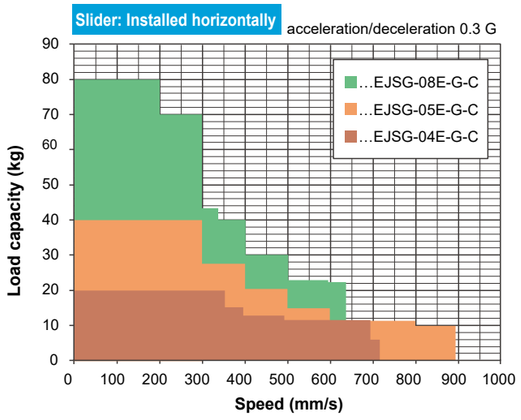
Slider Type
EJSG
EBS

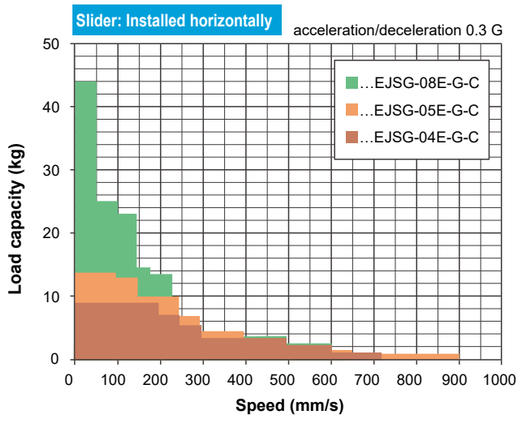
EJSG-C Series

System Table

Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100	Page
ECMG Series		EJSG-04E06-C	□35	Straight	44	6	20.0	9.2	155	360 mm/s										340	290	250	220	190	170							72
		EJSG-04E12-C				12	15.0	3.3	77	720										680	580	500	440	390	340							
		EJSG-04R/D/L06-C		Reverse Parallel		6	20.0	9.2	155	300											290	250	220	190	170							74
		EJSG-04R/D/L12-C				12	15.0	3.3	77	480													440	390	340							
		EJSG-05E05-C	□42	Straight	54	5	40.0	14.2	220	300											260	225	200	175	150							76
		EJSG-05E10-C				10	27.5	7.1	110	600											525	455	400	355	315							
		EJSG-05E20-C				20	18.3	2.5	55	895													800	710	630							
		EJSG-05R/D/L05-C		Reverse Parallel		5	40.0	10.0	220	280											260	225	200	175	150							78
		EJSG-05R/D/L10-C				10	27.5	3.3	110	505												455	400	355	315							
		EJSG-05R/D/L20-C				20	18.3	0.8	55	895													800	710	630							
		EJSG-08E05-C	□56	Straight	82	5	80.0	43.3	965	280																175	160	145	130	120	110	80
		EJSG-08E10-C				10	70.0	28.3	482	340																320	290	260	240	220		
		EJSG-08E20-C				20	30.0	3.3	241	640																580	530	480	440			
		EJSG-08R/D/L05-C		Reverse Parallel		5	80.0	33.3	965	160																145	130	120	110			82
		EJSG-08R/D/L10-C				10	70.0	21.7	482	340																320	290	260	240	220		
		EJSG-08R/D/L20-C				20	30.0	3.3	241	640																580	530	480	440			

* This data is for an acceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.





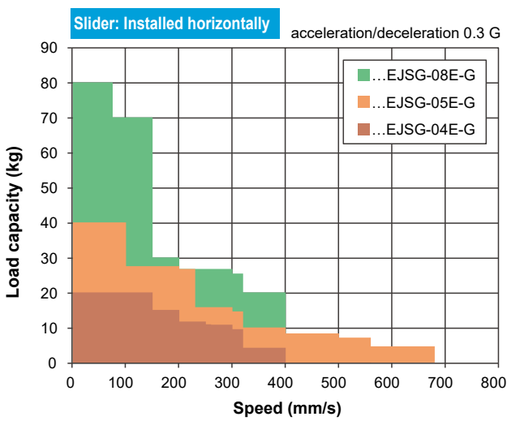
Slider Type
EJSG
EBS
Ending

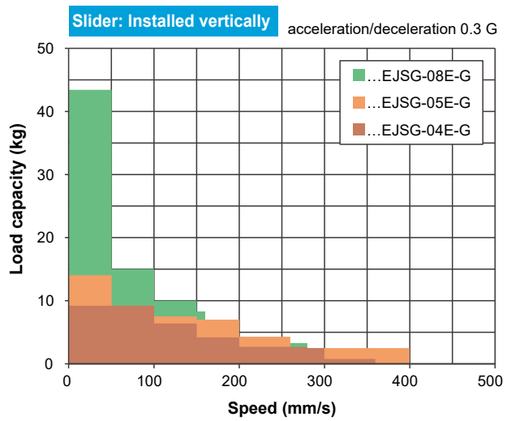
EJSG-C Series

System Table

Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100	Page
ECG Series		EJSG-04E06-C	□35	Straight	44	6	20.0	9.2	155	260 mm/s												250	220	190	170							72
		EJSG-04E12-C				12	15.0	3.3	77	400														390	340							
		EJSG-04R/D/L06-C		Reverse Parallel		6	20.0	9.2	155	200														190	170							74
		EJSG-04R/D/L12-C				12	11.7	3.3	77	320																					
		EJSG-05E05-C	□42	Straight	54	5	40.0	14.0	220	230												225	200	175	150							76
		EJSG-05E10-C				10	27.5	7.0	110	400														355	315							
		EJSG-05E20-C				20	18.3	2.5	55	680															630						
		EJSG-05R/D/L05-C		Reverse Parallel		5	40.0	10.0	220	200														175	150							78
		EJSG-05R/D/L10-C				10	27.5	3.3	110	320															315						
		EJSG-05R/D/L20-C				20	18.3	0.8	55	560																					
		EJSG-08E05-C	□56	Straight	82	5	80.0	43.3	965	120																				110	80
		EJSG-08E10-C				10	70.0	28.3	482	200																					
		EJSG-08E20-C				20	30.0	3.3	241	400																					
		EJSG-08R/D/L05-C		Reverse Parallel		5	80.0	33.3	965	100																					82
		EJSG-08R/D/L10-C				10	70.0	18.3	482	200																					
		EJSG-08R/D/L20-C				20	30.0	3.3	241	320																					

* This data is for an acceleration/deceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.





Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type Low Dust Emission Specification

EJSG-04E-C

Inline Motor Mount Type

☐35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 ❶ E ❷ 06 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - C

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

04	Body width 44 mm

❷ Motor Mounting Direction

E	Inline Mount

❸ Screw Lead

06	6 mm
12	12 mm

❹ Stroke

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *2

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting

V	Yes

❽ Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG		ECG	
Motor		☐35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 800			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	15.0
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 360	15 to 720	7 to 260	15 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			
Protection Structure		IP20			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 73.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG]

(mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 500	550	600	650	700	750	800
6	360	340	290	250	220	190	170
12	720	680	580	500	440	390	340

[Connected Controller: ECG]

(mm/s)

Screw Lead (mm)	Stroke (mm)				
	50 to 600	650	700	750	800
6	260	250	220	190	170
12	400			390	340

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
350	20.0	15.0	20.0	10.0	13.3	8.3	12.1	5.4
360	20.0	15.0	20.0	10.0	13.3	8.3	9.2	5.4
500		12.9		10.0		8.3		5.4
600		11.7		9.2		7.5		5.4
700		11.7		8.3		5.8		5.4
720		5.8		5.8		5.8		2.5

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 6	12
7	20.0		20.0	
15	20.0	15.0	20.0	11.0
50	20.0	15.0	20.0	11.0
100	20.0	15.0	20.0	11.0
150	20.0	15.0	12.5	10.8
200	15.0	15.0	12.5	10.8
250	11.7	10.8	11.7	8.3
260	10.9	10.8	10.9	8.3
300		10.8		8.3
320		9.5		7.5
400		4.2		4.2

[Vertical Installation]

[Connected Controller: ECMG]

(kg)

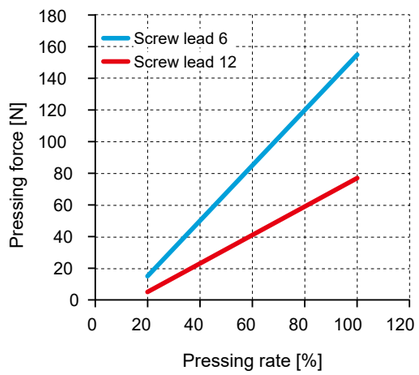
Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
200	9.2	3.3	9.2	3.3
250	7.1	3.3	6.7	3.3
300	5.4	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
360	1.7	3.3		3.3
500		3.3		3.3
600		2.5		2.5
720		0.8		0.8

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	9.2	3.3
150	6.7	3.3
180	5.2	3.3
200	4.2	3.3
220	2.2	2.7
280		2.7
300		2.5
350		0.8
360		0.8

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 18.
For the dimensions of the fitting, please refer to P. 84.

Electric Actuator Slider Type Low Dust Emission Specification

EJSG-04□-C

Reverse Parallel Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 04 R 06 0300 N B N - V C S03 - C

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

04	Body width 44 mm

❷ Motor Mounting Direction *2 *3

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸ Screw Lead

06	6 mm
12	12 mm

❹ Stroke *2 *3

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *4

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting *3

V	Yes

❽ Relay Cable *5

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 When the motor mounting direction is "L", stroke 0050 (50 mm) cannot be selected.
*4 Select "Yes" for vertical use.
*5 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG		ECG	
Motor		□35 Stepping Motor			
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder			
Drive Method		Ball screw ø10			
Stroke mm		50 to 500			
Screw lead mm		6	12	6	12
Max. Payload kg *1	Horizontal	20.0	15.0	20.0	11.7
	Vertical	9.2	3.3	9.2	3.3
Operating Speed Range *2 mm/s		7 to 300	15 to 480	7 to 200	15 to 320
Max. Acceleration/ Deceleration G	Horizontal	1.0		0.7	
	Vertical	0.5		0.3	
Max. Pushing Force N		155	77	155	77
Pushing Operation Speed Range mm/s		5 to 20		5 to 20	
Repeatability mm		±0.01			
Lost Motion mm		0.1 or less			
Static Allowable Moment N·m		MP: 62 MY: 62 MR: 92			
Motor Power Supply Voltage		24 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%			
	Power Consumption W	6.1			
	Holding Force N	140	70	140	70
Insulation Resistance		10 MΩ, 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			
Protection Structure		IP20			

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 75.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
6	300	290	250	220	190	170
12	480			440	390	340

[Connected Controller: ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)		
	50 to 700	750	800
6	200	190	170
12	320		

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	20.0		20.0		20.0		16.7	
15	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
100	20.0	15.0	20.0	15.0	20.0	14.2	16.7	5.4
150	20.0	15.0	20.0	10.0	18.3	8.3	15.0	5.4
200	20.0	15.0	20.0	10.0	15.0	8.3	14.2	5.4
250	20.0	15.0	20.0	10.0	15.0	8.3	12.1	5.4
300	20.0	15.0	20.0	10.0	15.0	8.3	11.7	5.4
400		15.0		10.0		8.3		5.4
480		11.7		10.0		8.3		5.4

Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 6	12
7	20.0		20.0	
15	20.0	11.7	20.0	10.0
50	20.0	11.7	20.0	10.0
100	20.0	11.7	20.0	10.0
150	13.3	11.7	11.7	10.0
200	13.3	11.7	10.0	10.0
300		8.3		8.3
320		7.3		7.3

[Vertical Installation]

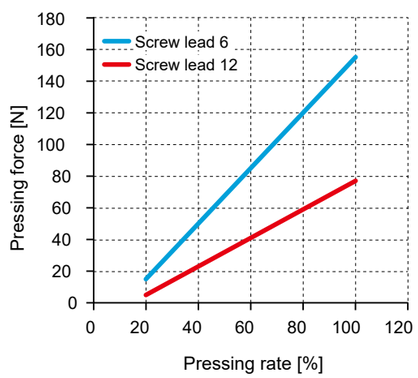
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
150	9.2	3.3	9.2	3.3
200	8.3	3.3	8.3	3.3
250	5.8	3.3	5.8	3.3
300	4.6	3.3	4.2	3.3
350		3.3		3.3
375		3.3		3.3
450		2.1		2.1
480		0.8		0.8

Connected Controller: ECG (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	6.7	3.3
150	3.3	3.3
180	2.8	3.3
200		3.3
280		2.0

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 22 to 24.
For the dimensions of the fitting, please refer to P. 84.

Electric Actuator Slider Type Low Dust Emission Specification

EJSG-05E-C

Inline Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 ❶ E ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - C

❶Body Size

05	Body width 54 mm

❷Motor Mounting Direction

E	Inline Mount

❸Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹Stroke

0050 to 0800	50 mm (every 50 mm) 800 mm

❺Brake *2

N	None
B	Yes

❻Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Fitting

V	Yes

❽Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

Applicable Controller *1

ECMG
ECG

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG			ECG		
Motor		□42 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø12					
Stroke mm		50 to 800					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	14.2	7.1	2.5	14.0	7.0	2.5
Operating Speed Range *2 mm/s		6 to 300	12 to 600	25 to 895	6 to 230	12 to 400	25 to 680
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 77.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG]

(mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
5	300	260	225	200	175	150
10	600	525	455	400	355	315
20	895			800	710	630

[Connected Controller: ECG]

(mm/s)

Screw Lead (mm)	Stroke (mm)				
	50 to 600	650	700	750	800
5	230	225	200	175	150
10	400			355	315
20	680				630

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
200	40.0	27.5	18.3	40.0	25.0	11.7	40.0	18.3	10.0	30.4	14.2	6.7
250	40.0	27.5	15.0	40.0	25.0	11.7	33.3	18.3	8.3	20.4	12.9	6.3
300	40.0	27.5	15.0	40.0	25.0	11.7	24.2	18.3	8.3	13.8	12.9	6.3
400		27.5	15.0		25.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		20.4	10.0		18.3	8.3		10.8	6.3
600		15.0	13.3		15.0	10.0		15.0	8.3		6.3	6.3
700			11.3		6.7	8.3			6.7			5.0
800			11.3			7.5			6.7			4.2
895			10.0			7.5			6.7			4.2

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	8.3
50	40.0	27.5	18.3	40.0	27.5	8.3
100	40.0	27.5	18.3	40.0	27.5	8.3
150	26.7	27.5	10.0	26.7	27.5	6.7
200	26.7	27.5	10.0	26.7	27.5	6.7
230	26.7	15.8	10.0	26.7	12.5	6.7
300		15.8	10.0		12.5	6.7
320		14.6	8.3		11.8	5.0
400		10.0	8.3		9.2	5.0
500			8.3			5.0
560			7.1			4.3
680			4.6			2.8

[Vertical Installation]

[Connected Controller: ECMG]

(kg)

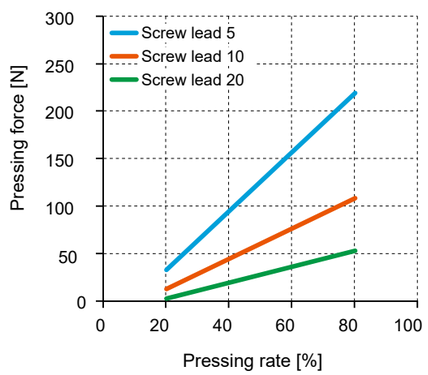
Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20
6	14.2			14.2		
12	14.2	7.1		14.2	7.1	
25	14.2	7.1	2.5	14.2	7.1	2.5
100	14.2	7.1	2.5	14.2	7.1	2.5
150	13.3	7.1	2.5	13.3	7.1	2.5
250	10.0	7.1	2.5	10.0	7.1	2.5
300	6.3	7.1	2.5	6.3	7.1	2.5
350		4.6	2.5		3.8	2.5
375		4.6	2.5		3.8	2.5
400		4.6	2.5		3.8	2.5
500		2.5	1.3		1.7	1.3
600		1.7	1.3		0.8	1.3
650			1.3			1.3
800			1.3			1.3
895			0.8			0.8

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	14.0		
12	14.0	7.0	
25	14.0	7.0	2.5
50	14.0	7.0	2.5
100	9.2	7.0	2.5
150	7.5	7.0	2.5
170	6.2	7.0	2.5
200	4.2	7.0	2.5
260		4.3	2.5
300		2.5	2.5
325		2.1	2.5
340		2.1	2.5
400			2.5

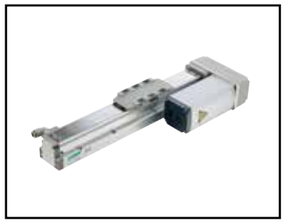
Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 28.
For the dimensions of the fitting, please refer to P. 84.



Electric Actuator Slider Type Low Dust Emission Specification

EJSG-05□-C

Reverse Parallel Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 05 R 05 0300 N B N - V C S03 - C

❶ Applicable Controller *1

ECMG	
ECG	

❶ Body Size

05	Body width 54 mm

❷ Motor Mounting Direction *2 *3

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸ Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹ Stroke *2 *3

0050 to 0800	50 mm (every 50 mm) 800 mm

❺ Brake *4

N	None
B	Yes

❻ Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼ Fitting *3

V	Yes

❽ Relay Cable *5

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 When the motor mounting direction is "L", stroke 0050 (50 mm) cannot be selected.
*4 Select "Yes" for vertical use.
*5 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG			ECG		
Motor		□42 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø12					
Stroke mm		50 to 800					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	40.0	27.5	18.3	40.0	27.5	18.3
	Vertical	10.0	3.3	0.8	10.0	3.3	0.8
Operating Speed Range *2 mm/s		6 to 280	12 to 505	25 to 895	6 to 200	12 to 320	25 to 560
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		220	110	55	220	110	55
Pushing Operation Speed Range mm/s		5 to 20					
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 103 MY: 103 MR: 144					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1					
	Holding Force N	168	84	42	168	84	42
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 79.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG] (mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 550	600	650	700	750	800
5	280	260	225	200	175	150
10	505		455	400	355	315
20	895			800	710	630

[Connected Controller: ECG] (mm/s)

Screw Lead (mm)	Stroke (mm)		
	50 to 700	750	800
5	200	175	150
10	320		315
20	560		

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	40.0			40.0			40.0			40.0		
12	40.0	27.5		40.0	25.0		40.0	23.3		40.0	22.9	
25	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
100	40.0	27.5	18.3	40.0	25.0	11.7	40.0	23.3	10.0	40.0	22.9	8.3
150	40.0	27.5	15.0	40.0	20.0	11.7	40.0	18.3	10.0	23.3	14.2	6.7
200	40.0	27.5	15.0	40.0	20.0	11.7	32.5	18.3	10.0	18.3	14.2	6.7
250	40.0	27.5	15.0	40.0	20.0	11.7	25.8	18.3	8.3	13.3	12.9	6.3
280	19.2	27.5	15.0	19.2	20.0	11.7	19.2	18.3	8.3		12.9	6.3
300		27.5	15.0		20.0	11.7		18.3	8.3		12.9	6.3
325		27.5	15.0		20.0	11.7		18.3	8.3		12.9	6.3
400		27.5	15.0		20.0	11.7		18.3	8.3		12.9	6.3
500		20.4	13.3		17.5	10.0		15.0	8.3		10.8	6.3
505		15.0	13.3		13.3	10.0		13.3	8.3		6.3	6.3
600			13.3			10.0			8.3			6.3
635			11.3			8.3			6.7			5.0
700			11.3			8.3			6.7			5.0
800			11.3			7.5			6.7			4.2
895			10.0			7.5			6.7			4.2

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	40.0			40.0		
12	40.0	27.5		40.0	27.5	
25	40.0	27.5	18.3	40.0	27.5	7.5
50	40.0	27.5	18.3	40.0	27.5	7.5
100	40.0	27.5	18.3	40.0	27.5	7.5
150	26.7	23.3	10.0	26.7	20.0	5.0
200	26.7	23.3	10.0	26.7	20.0	5.0
300		11.7	10.0		11.7	5.0
320		10.0	6.7		10.0	4.2
500			6.7			4.2
560			5.7			3.5

[Vertical Installation]

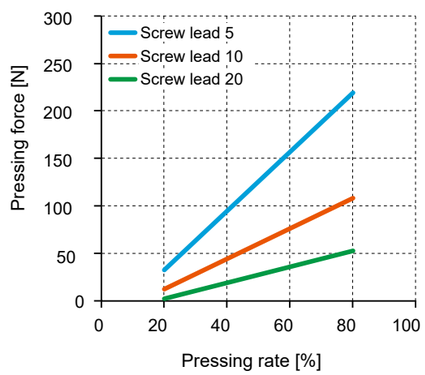
[Connected Controller: ECMG] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20
6	10.0			10.0		
12	10.0	3.3		10.0	3.3	
25	10.0	3.3	0.8	10.0	3.3	0.8
200	10.0	3.3	0.8	10.0	3.3	0.8
250	7.5	3.3	0.8	5.8	3.3	0.8
280	3.8	3.3	0.8	1.7	3.3	0.8
300		3.3	0.8		3.3	0.8
325		3.3	0.8		2.9	0.8
400		3.3	0.8		2.9	0.8
500		2.5	0.8		1.7	0.8
505		0.8	0.8		0.8	0.8
895			0.8			0.8

[Connected Controller: ECG] (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	10.0		
12	10.0	3.3	
25	10.0	3.3	0.8
50	10.0	3.3	0.8
100	8.3	3.3	0.8
150	6.7	2.1	0.8
170	5.0	2.1	0.8
200		2.1	0.8
260		1.6	0.8
400			0.8

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 32 to 34.
For the dimensions of the fitting, please refer to P. 84.

Electric Actuator Slider Type Low Dust Emission Specification

EJSG-08E-C

Inline Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 ❶ E ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - C

❶Body Size

08	Body width 82 mm

Applicable Controller *1

ECMG
ECG

❷Motor Mounting Direction

E	Inline Mount

❸Screw Lead

05	5 mm
10	10 mm
20	20 mm

❹Stroke

0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake *2

N	None
B	Yes

❻Encoder

B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Fitting

V	Yes

❽Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG			ECG		
Motor		□56 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø16					
Stroke mm		50 to 1100					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	43.3	28.3	3.3	43.3	28.3	3.3
Operating Speed Range *2 mm/s		6 to 180	12 to 340	25 to 640	6 to 120	12 to 200	25 to 400
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 81.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG]

(mm/s)

Screw Lead (mm)	Stroke (mm)						
	50 to 800	850	900	950	1,000	1050	1100
5	180	175	160	145	130	120	110
10	340		320	290	260	240	220
20	640			580	530	480	440

[Connected Controller: ECG]

(mm/s)

Screw Lead (mm)	Stroke (mm)	
	50 to 1050	1100
5	120	110
10	200	
20	400	

Speed and Payload

[Horizontal Installation]

[Connected Controller: ECMG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
150	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	50.0	70.0	26.7
180	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	26.7	18.3	40.0	26.7
200		70.0	30.0		70.0	30.0		70.0	26.7		40.0	26.7
230		70.0	30.0		70.0	26.7		43.3	26.7		40.0	24.2
250		70.0	30.0		70.0	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
340		43.3	30.0		43.3	26.7		43.3	26.7		3.8	24.2
400			30.0			26.7			26.7			24.2
430			30.0			26.7			26.7			16.7
500			30.0			26.7			26.7			16.7
600			22.9			22.5			22.5			13.8
640			22.5			22.5			22.5			12.5

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.7 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	80.0	70.0	30.0	80.0	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
120	40.0	70.0	30.0	40.0	70.0	18.3
150		70.0	30.0		70.0	18.3
200		28.3	30.0		17.5	18.3
300			26.7			18.3
320			25.4			17.0
400			20.0			

[Vertical Installation]

[Connected Controller: ECMG]

(kg)

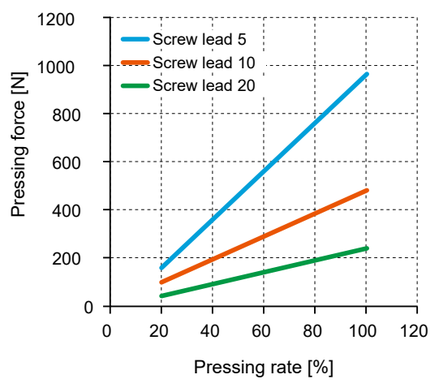
Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw lead (mm) 5	10	20	0.5 5	10	20
6	43.3			43.3		
12	43.3	28.3		43.3	28.3	
25	43.3	28.3	3.3	43.3	28.3	3.3
50	43.3	28.3	3.3	43.3	28.3	3.3
100	16.7	24.2	3.3	16.7	12.1	3.3
150	16.7	22.5	3.3	16.7	12.1	3.3
180	5.0	14.2	3.3	5.0	12.1	3.3
200		14.2	3.3		12.1	3.3
230		13.3	3.3		12.1	3.3
250		13.3	3.3		12.1	3.3
300		5.4	3.3		2.1	3.3
340		5.4	3.3		2.1	3.3
400			3.3			3.3
500			3.3			3.3
600			2.5			2.5
640			0.8			0.8

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw lead (mm) 5	10	20
6	43.3		
12	43.3	28.3	
25	43.3	28.3	3.3
50	43.3	28.3	3.3
75	15.0	12.5	3.3
100	15.0	12.5	3.3
120	5.3	10.0	3.3
150		10.0	3.3
160		8.3	3.3
200		1.7	3.3
280			3.3

Pushing Force



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 38.
For the dimensions of the fitting, please refer to P. 84.

Electric Actuator Slider Type Low Dust Emission Specification

EJSG-08□-C

Reverse Parallel Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EJSG - 08 ❶ R ❷ 05 ❸ 0300 ❹ N ❺ B ❻ N - V ❼ C S03 ❽ - C

❶Applicable Controller *1
ECMG
ECG

❶Body Size	
08	Body width 82 mm

❷Motor Mounting Direction *2	
R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❸Screw Lead	
05	5 mm
10	10 mm
20	20 mm

❹Stroke *2	
0050 to 1100	50 mm (every 50 mm) 1100 mm

❺Brake *3	
N	None
B	Yes

❻Encoder	
B	Battery-less Absolute Encoder
C	Incremental Encoder

❼Fitting	
V	Yes

❽Relay Cable *4	
N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 3 m

*1 Select the controller from P. 529.
* 2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "1100 (1100 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG			ECG		
Motor		□56 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder					
Drive Method		Ball screw ø16					
Stroke mm		50 to 1100					
Screw lead mm		5	10	20	5	10	20
Max. Payload kg *1	Horizontal	80.0	70.0	30.0	80.0	70.0	30.0
	Vertical	33.3	21.7	3.3	33.3	18.3	3.3
Operating Speed Range mm/s		6 to 160	12 to 340	25 to 640	6 to 100	12 to 200	25 to 320
Max. Acceleration/ Deceleration G	Horizontal	1.0			0.7		
	Vertical	0.5			0.3		
Max. Pushing Force N		965	482	241	965	482	241
Pushing Operation Speed Range mm/s		5 to 20			5 to 20		
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Static Allowable Moment N·m		MP: 203 MY: 203 MR: 336					
Motor Power Supply Voltage		24 VDC ±10%					
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	7.2					
	Holding Force N	768	384	192	768	384	192
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)					
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Payload varies depending on acceleration/deceleration and speed. For details, see P. 83.
*2 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[Connected Controller: ECMG]

(mm/s)

Screw Lead (mm)	Stroke (mm)					
	50 to 850	900	950	1,000	1050	1100
5	160		145	130	120	110
10	340	320	290	260	240	220
20	640		580	530	480	440

[Connected Controller: ECG]

(mm/s)

Screw Lead (mm)	Stroke (mm)
	50 to 1100
5	100
10	200
20	320

Speed and Payload

[Horizontal Installation]

[[Connected Controller: ECMG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G)											
	0.3			0.5			0.7			1.0		
	Screw lead (mm)											
	5	10	20	5	10	20	5	10	20	5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
50	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0	80.0	70.0	30.0	40.0	70.0	30.0
150	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7	8.8	70.0	26.7
180	80.0	70.0	30.0	16.7	70.0	30.0	16.7	70.0	26.7		40.0	26.7
200		70.0	30.0		70.0	30.0		70.0	26.7		40.0	26.7
250		70.0	30.0		68.3	26.7		43.3	26.7		40.0	24.2
300		70.0	30.0		61.7	26.7		43.3	26.7		15.0	24.2
340		43.3	30.0		43.3	26.7		40.0	26.7		3.8	16.3
400			30.0			26.7			26.7			16.3
430			30.0			26.7			26.7			15.8
500			30.0			26.7			26.7			15.8
600			16.7			16.7			16.7			9.6
640			16.7			16.7			16.7			9.2

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.7		
	Screw lead (mm)					
	5	10	20	5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	68.3	70.0	30.0	68.3	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
150		70.0	30.0		30.0	18.3
200		28.3	30.0		17.5	18.3
300			6.7			6.7
320			6.0			6.0

[Vertical Installation]

[Connected Controller: ECMG]

(kg)

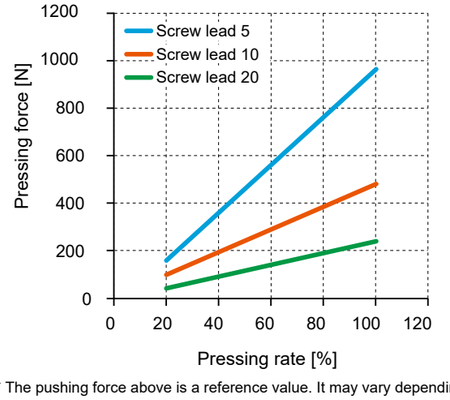
Speed (mm/s)	Acceleration/Deceleration (G)					
	0.3			0.5		
	Screw lead (mm)					
	5	10	20	5	10	20
6	33.3			33.3		
12	33.3	21.7		33.3	21.7	
25	33.3	21.7	3.3	33.3	21.7	3.3
50	33.3	21.7	3.3	33.3	21.7	3.3
100	16.7	21.7	3.3	16.7	12.1	3.3
150	8.3	20.8	3.3	8.3	12.1	3.3
160	3.3	12.5	3.3	3.3	12.1	3.3
200		12.5	3.3		12.1	3.3
230		12.1	3.3		11.7	3.3
250		12.1	3.3		11.7	3.3
300		5.4	3.3		2.1	3.3
340		5.0	3.3		2.1	3.3
350			3.3			3.3
400			3.3			3.3
500			3.3			3.3
600			1.7			1.7

[Connected Controller: ECG]

(kg)

Speed (mm/s)	Acceleration/ Deceleration (G)		
	0.3		
	Screw lead (mm)		
	5	10	20
6	33.3		
12	33.3	18.3	
25	33.3	18.3	3.3
50	25.0	18.3	3.3
75	15.0	12.5	3.3
100	12.5	12.5	3.3
150		8.3	3.3
160		7.0	3.3
200			3.3
280			3.3

Pushing Force



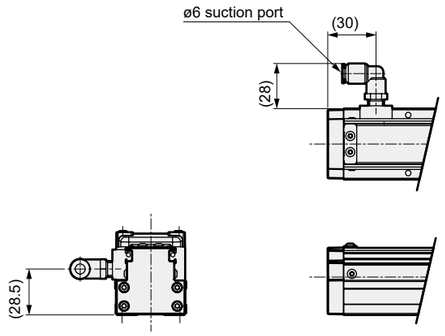
* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

For actuator dimensions, please refer to P. 42 to 44.
For the dimensions of the fitting, please refer to P. 84.

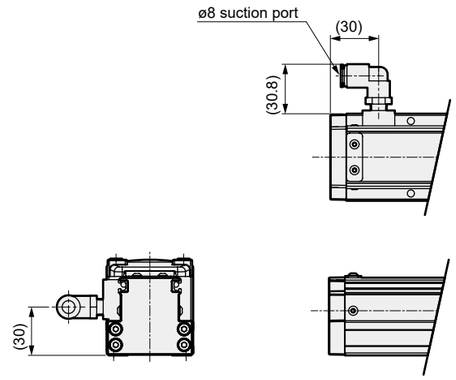
External Dimension Drawing

● EJSG-04-V-C (Fitting part)



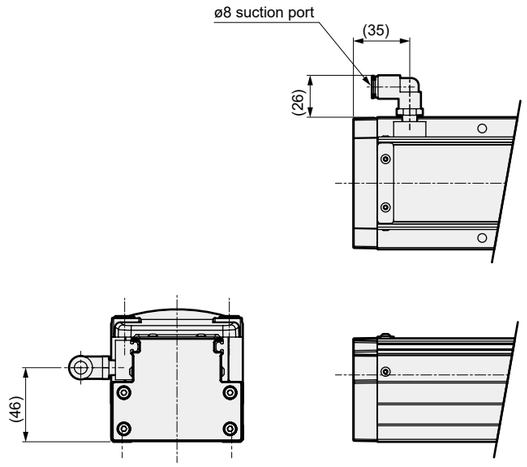
*For actuator dimensions, please refer to P. 18, 22 to 24.
* The fitting is included.

● EJSG-05-V-C (Fitting part)



*For actuator dimensions, please refer to P. 28, 32 to 34.
* The fitting is included.

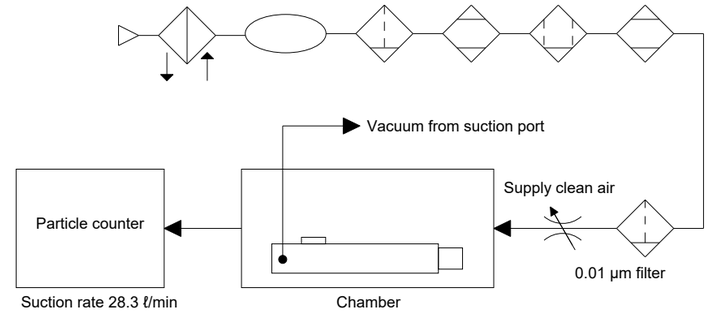
● EJSG-08-V-C (Fitting part)



* For actuator dimensions, please refer to P. 38, 42 to 44.
* The fitting is included.

Dust Generation Characteristics Reference Data

Test Circuit



Measurement Conditions

Item		Contents
Test Sample	Model No.	EJSG-04E120500□-□-C
		EJSG-05E200500□-□-C
		EJSG-08E200600□-□-C
	Operating speed	100 mm/sec
	Acceleration/ deceleration time	0.3G
	Suction flow rate	30.0 L/min
Particle counter	Name	Laser dust monitor
	Minimum measurable particle size	0.1 μm
	Suction volume	28.3 L/min
Measurement Conditions	Measurement time	10 min

Measurement Method

① Place the test sample (EJSG-□-C) in the chamber.

② Start vacuum evacuation from the test sample's suction port. Supply the same amount of clean air as the particle counter's suction volume (28.3 L/min).

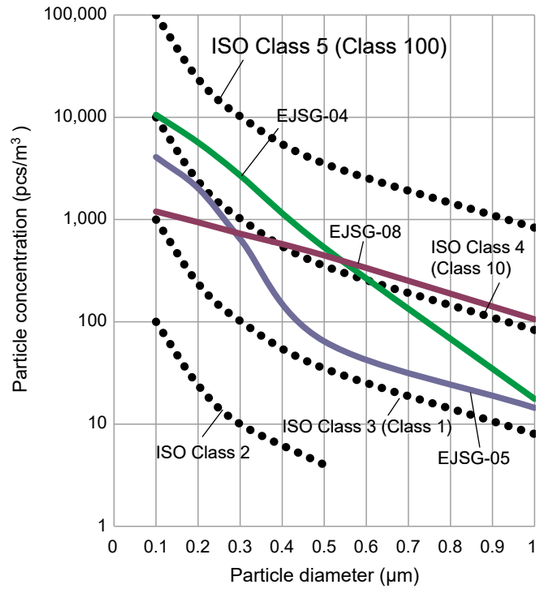
③ Confirm that the background reading is 0.

④ Operate the test sample and measure the change in particle concentration at the specified cycle.

The data are measured values under the above conditions and are not guaranteed values.

Dust Generation Data

● Operating Speed: 100 mm/sec



Model Selection/Technical Data

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Maintenance Parts 94

Slider Type
EJSG
EBS
Ending

Model Selection

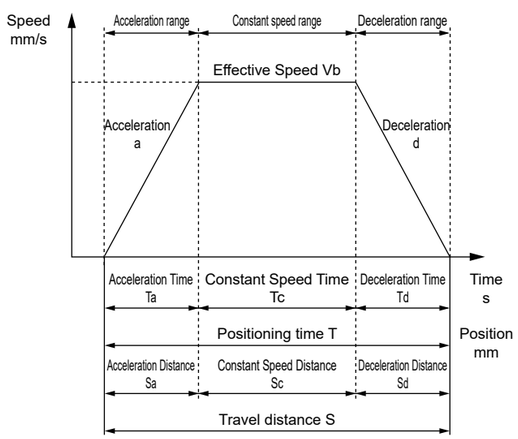
STEP1 Confirmation of Payload

The payload varies depending on the mounting orientation, screw lead, transport speed, and acceleration/deceleration. Refer to the System Tables (pages 10 to 13, 48 to 51, and 68 to 71), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

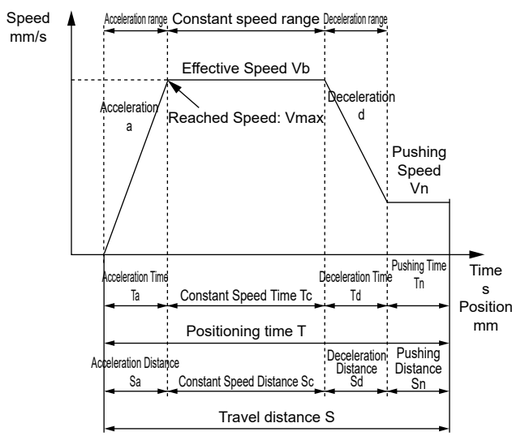
Positioning time for general transfer operations



	Contents	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=\{2\times a\times d\times S/(a+d)\}^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	$=(d\times Td^2)/2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Contents	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times(S-Sn+Vn^2/2/d)/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

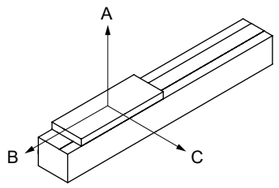
* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

STEP3 Confirmation of Allowable Overhang Length

Confirm that the overhang length of the load during operation is within the allowable overhang length (P. 90-92). For details on selection, please contact our sales representative.

Allowable Overhang Length (EJSG Series)

[Horizontal Installation]



[Allowable Overhang Length]

●EJSG-04E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	6	10	450	390	70	90
			15	400	270	45	55
			20	400	185	30	40
		12	5	800	480	130	135
			10	700	245	60	65
			15	400	270	45	55
	1.0	6	9	400	205	80	90
			12	350	160	60	70
			16	100	295	60	85
		12	1	850	800	680	615
			3	700	415	230	220
			5	700	230	135	120

●EJSG-05E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	5	20	375	345	55	65
			30	350	220	30	40
			40	350	140	20	25
		10	6	700	745	180	195
			15	600	300	65	75
			27	400	215	35	40
		20	6	1100	495	160	145
			13	600	355	80	90
			18	200	735	70	95
	1.0	5	20	250	205	55	70
			30	200	160	35	45
			40	100	125	30	45
		10	10	500	240	110	115
			15	100	560	105	145
			20	100	385	75	105
		20	2	1,000	730	510	405
			5	700	385	220	200
			8	100	1,000	205	285

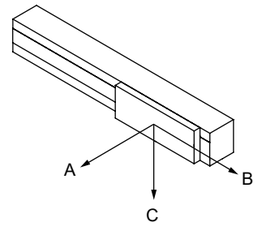
●EJSG-08E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	5	40	200	1,000	95	155
			60	200	635	60	95
			80	200	450	40	65
		10	30	400	715	115	165
			50	300	515	65	100
			70	300	340	40	65
		20	10	700	1,000	335	420
			20	700	645	160	195
			30	500	575	110	150
	1.0	5	40	150	580	105	165
			60	100	370	70	115
			80	100	235	50	80
		10	30	250	465	125	180
			50	150	450	80	130
			70	150	295	55	85
		20	10	700	600	335	340
			20	400	480	180	235
			30	100	915	160	260

* Value when the actuator's running life is 5,000 km.
* The load in the overhang direction is in a single direction only.
* Dimensions A, B, and C are from the center of the top surface of the table.
  Controller For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Allowable Overhang Length (EJSG Series)

[When Wall-Mounted]



[Allowable Overhang Length]

●EJSG-04E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	6	5	450	160	120	760
			10	450	55	40	290
			15	400	20	15	155
		12	5	800	105	95	390
			10	700	35	30	145
			15	400	20	15	155
	1.0	6	9	400	60	50	170
			12	350	40	30	125
			16	100	45	30	325
		12	1	850	595	645	800
			3	700	200	200	385
			5	700	100	100	200

●EJSG-05E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	5	5	375	280	215	1,000
			10	375	110	85	650
			20	375	25	15	190
		10	6	700	160	140	630
			10	600	80	70	370
			15	600	35	30	170
		20	6	1100	110	110	380
			13	600	50	40	235
			18	200	50	35	580
	1.0	5	5	375	260	215	675
			10	300	110	90	360
			20	250	30	20	150
		10	10	500	80	75	205
			15	100	100	70	615
			20	100	55	40	440
		20	2	1,000	380	465	700
			5	700	175	180	350
			8	100	240	170	1,000

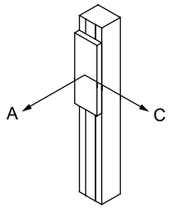
●EJSG-08E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	B	C
Straight	0.3	5	40	200	105	65	880
			60	200	45	25	480
			80	200	15	10	240
		10	30	400	120	80	600
			50	300	55	35	380
			70	300	15	10	165
		20	10	700	380	295	1,000
			20	700	155	120	540
			30	500	105	75	460
	1.0	5	40	150	120	75	535
			50	150	80	50	400
			80	100	30	20	305
		10	30	250	140	90	425
			50	150	80	50	400
			70	150	35	20	235
		20	10	700	315	295	570
			20	400	195	145	445
			30	100	210	125	1,000

* Value when the actuator's running life is 5,000 km.
* The load in the overhang direction is in a single direction only.
* Dimensions A, B, and C are from the center of the top surface of the table.
  Controller For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Allowable Overhang Length (EJSG Series)

[Vertical Installation]



[Allowable Overhang Length]

●EJSG-04E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	Overhang mm C
Straight	0.3	6	3	300	240	235
			6	250	100	100
			9	200	60	60
		12	1	600	690	635
			2	600	325	300
			3	500	215	200
	0.5	6	3	300	240	235
			6	250	100	100
			9	200	60	60
		12	1	600	680	625
			2	600	320	295
			3	500	210	200

●EJSG-05E

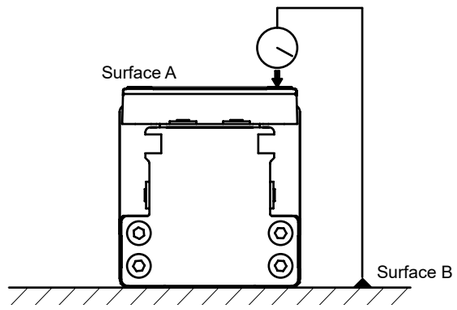
Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	Overhang mm C
Straight	0.3	5	6	300	175	170
			10	250	90	90
			14	100	75	75
		10	2	500	565	535
			4	400	275	265
			7	300	145	140
		20	0.5	900	1,000	1,000
			1	800	1,000	895
			2.5	400	470	450
	0.5	5	6	300	175	170
			10	250	90	85
			14	100	75	75
		10	2	400	590	570
			4	300	290	280
			7	300	145	140
		20	0.5	900	1,000	1,000
			1	800	985	870
			2.5	400	465	445

●EJSG-08E

Motor Mounting	Acceleration/ Deceleration G	Screw Lead	Load Weight kg	Max. Speed mm/s	Overhang mm A	Overhang mm C
Straight	0.3	5	15	150	270	265
			30	50	135	135
			43	50	80	80
		10	13	250	265	265
			20	150	185	185
			28	50	150	150
		20	1	600	1,000	1,000
			2	600	1,000	1,000
			3	500	1,000	1,000
	0.5	5	15	150	270	265
			30	50	135	135
			43	50	80	80
		10	12	250	290	290
			20	50	230	230
			28	50	150	150
		20	1	600	1,000	1,000
			2	600	1,000	1,000
			3	500	1,000	1,000

* Value when the actuator's running life is 5,000 km.
* The load in the overhang direction is in a single direction only.
* Dimensions A, B, and C are from the center of the top surface of the table.
  Controller For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Slider Parallelism *Reference Value

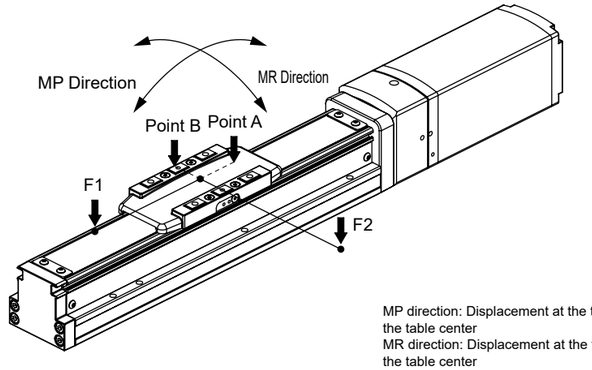


(mm)

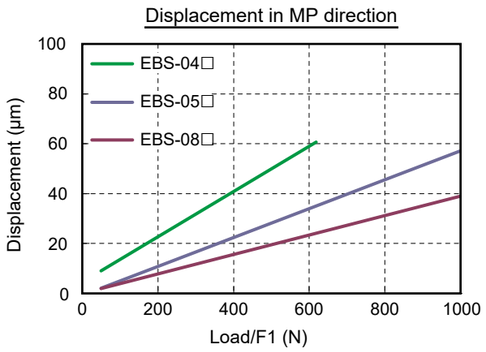
	Parallelism: Surface A with respect to Surface B
EJSG-04 Series	0.03
EJSG-05 Series	
EJSG-08 Series	

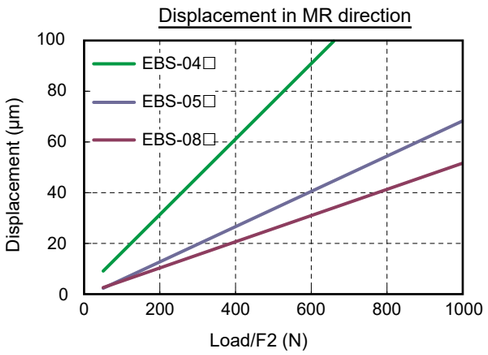
* This is the parallelism when the product is fixed to a surface plate.

Table Displacement *Reference Value



MP direction: Displacement at the table end (point A) when a load (F1) is applied at a position 100 mm away from the table center
MR direction: Displacement at the table end (point B) when a load (F2) is applied at a position 100 mm away from the table center





Maintenance Parts

■ Maintenance Parts (Motor Unit)

		Model No.	Applicable Models
Without Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-NB	EJSG-04E
		EJSG-04R-MOTORUNIT-NB	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-NB	EJSG-05E
		EJSG-05R-MOTORUNIT-NB	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-NB	EJSG-08E
		EJSG-08R-MOTORUNIT-NB	EJSG-08R/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-NC	EJSG-04E
		EJSG-04R-MOTORUNIT-NC	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-NC	EJSG-05E
		EJSG-05R-MOTORUNIT-NC	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-NC	EJSG-08E
		EJSG-08R-MOTORUNIT-NC	EJSG-08R/D/L
With Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-BB	EJSG-04E
		EJSG-04R-MOTORUNIT-BB	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-BB	EJSG-05E
		EJSG-05R-MOTORUNIT-BB	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-BB	EJSG-08E
		EJSG-08R-MOTORUNIT-BB	EJSG-08R/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-BC	EJSG-04E
		EJSG-04R-MOTORUNIT-BC	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-BC	EJSG-05E
		EJSG-05R-MOTORUNIT-BC	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-BC	EJSG-08E
		EJSG-08R-MOTORUNIT-BC	EJSG-08R/D/L

■ Maintenance Parts / Motor Mounting Direction: For right, bottom, and left folded-back type (Timing Belt)

Model No.	Applicable Models
EJSG-04R-BELT	EJSG-04R/D/L
EJSG-05R-BELT	EJSG-05R/D/L
EJSG-08R-BELT	EJSG-08R/D/L

Maintenance Parts

■ Maintenance Parts (Steel Belt)

Model No.	Applicable Models
EJSG-04-STEELBELT (4-digit stroke code)	EJSG-04 (corresponding stroke product)
EJSG-05-STEELBELT (4-digit stroke code)	EJSG-05 (corresponding stroke product)
EJSG-08-STEELBELT (4-digit stroke code)	EJSG-08 (corresponding stroke product)

■ Maintenance Parts/(Connector Cover)

Model No.	Applicable Models
EJSG-04-CNCOVER	EJSG-04-G
EJSG-05-CNCOVER	EJSG-05-G, EJSG-08-G

Special Order Products

● Intermediate Stroke Support
Can be manufactured in 10 mm increments. The minimum stroke is 50 mm.
* The stroke range varies depending on the model.

● Change of Machined Hole Position
It is possible to change the position of the positioning pin hole on the bottom of the body.

● Change of Grease
It is possible to change the grease used in the sliding parts of the actuator to your specified grease.
There are restrictions on the greases that can be used.

● Change of Fitting Position
It is possible to change the position of the port (fitting) for pressurization and vacuum scavenging.
It is also possible to change the shape of the fitting, such as to a straight type.

*For details on special order products, please contact our sales office.

To Use This Product Safely

Be sure to read this before use.
For general information on electric actuators, please see intro 17.

Individual Precautions: Electric Actuator EJSG Series

During Design and Selection

1. Common

Danger

■Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

■Be sure to use a DC stabilized power supply (24 VDC ±10%) for the motive power supply and control power supply.
Direct connection to an AC power supply can cause fire, bursting, damage, etc.

■Please use only a 24 VDC power supply.
Using a 48 V power supply may cause the controller to malfunction.

Warning

■Use the product within its specific specification range.

■Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 80% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■If using the actuator in an installation other than horizontal or wall-mounted, select the one with a brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■The brake cannot completely hold the actuator in all cases. When performing maintenance on applications that move the slider with an unbalanced load, or when stopping the machine for a long time, if safety needs to be ensured, be sure to bring it to a balanced state or provide a mechanical locking mechanism.

■When using the actuator in a vertical installation, position the motor as high as possible.
If the motor is on the lower side, there is no problem in normal operation, but if it is stopped for a long period of time, the grease may separate and flow into the motor, which may cause a malfunction in rare cases.

■Observe the operating and storage temperatures, and use and store in a condensation-free state.
Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 10 to 40°C, Operating Humidity: 35% to 80% (This may cause product malfunction or reduced service life.) Ventilate if heat builds up.

■Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■Do not use in places with impact or vibration.

■Do not apply a load to the product that exceeds the allowable value in the selection data.

■When pushing workpieces, etc., please use the pushing operation.

Caution

■Please use within a range where the moving table does not collide at the stroke end.

■Clearly state the maintenance conditions in the equipment's instruction manual.
Depending on the usage status, usage environment, and maintenance, the functions of this product may be significantly degraded, and safety may not be ensured. If maintenance is performed correctly, the product functions can be fully demonstrated.

■The product is manufactured in accordance with various standards. Never disassemble or modify.

■Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
Control power supply 0.4 A/unit
Motive power supply
[ECMG]
□35...12.4 A/unit, □42...12.2 A/unit
□56...12.5 A/unit
[ECG]
□35...2.4 A/unit, □42...2.7 A/unit
□56...4.0 A/unit

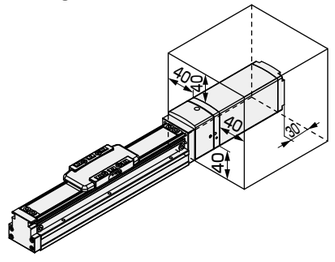
■Fixed cables cannot be used for applications involving repeated bending, so please fix them so that they do not move easily. For use in locations involving repeated bending, please use a flexible cable.

■Please use the fixed/flexible cable with a bending radius of 51 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■When the power is turned on, to recognize the home position, if there is an external stopper or holding mechanism (brake, etc.), there is a possibility that an unintended position will be recognized as the home position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■When using the EJSG series, do not apply a magnetic field with a magnetic flux density of 0.7 mT or more to the product surface of the motor section.
This can cause damage to the product or malfunction.

■When using multiple EJSG series units, please install them with the motor parts separated by the distance shown in the figure below or more.
Installation at close intervals can cause malfunction.



■When transporting or installing the actuator, hold the main body and avoid applying excessive force to the motor part.

■Please confirm that there is no interference between the workpiece attached to the slider and the motor part.
Some types have a motor part dimension that is larger than the slider mounting surface height.
(EJSG-08E, EJSG-08R, EJSG-08L)

■When using the EJSG-G series, please use a purge flow rate from the pressurizing port of 40 NL/min or more.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

EJSG Model Selection Checklist -> **for CKD** (Contact)

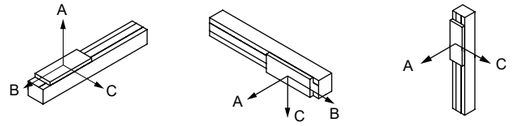
Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

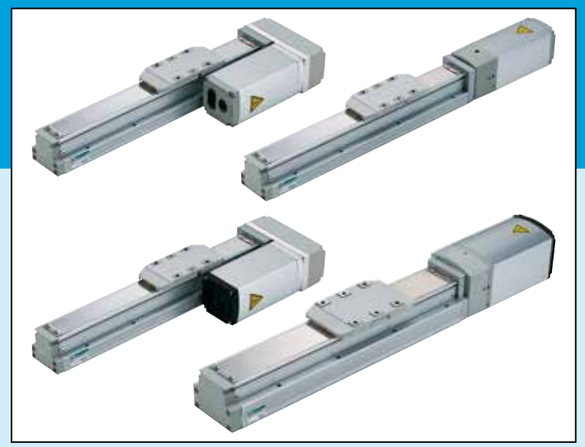
Desired Model	(EJSG)-
Basic Specifications	Max. Stroke: mm, Ball screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Set Speed: mm/s
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)
	Repeatability: ± mm
Load Conditions	Slider Type
	Payload: kg
	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other 
	Distance from slider center to load's center of gravity
	Direction A: mm Direction B: mm Direction C: mm
	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to the slider center ( )
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

Slider Type
EJSG
EBS
Ending

Electric Actuator with Motor Specification

EBS-M/G

Slider Type



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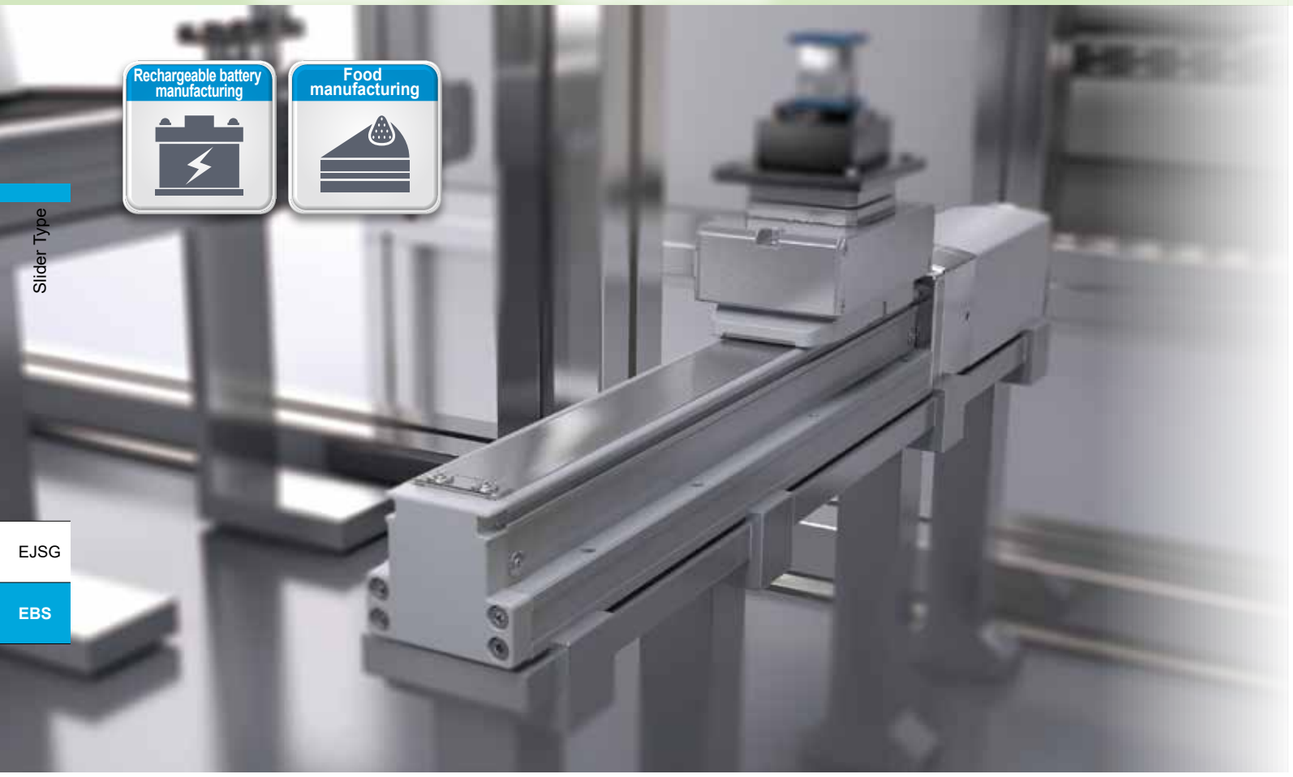
· EBS-08□ 128
●Model Selection 138
●Technical Data 140
Precautions for Use 154
Model Selection Check Sheet 156

Slider Type
EJSG
EBS
Ending

Slider EBS-G/M Series



Ideal for high-speed transport

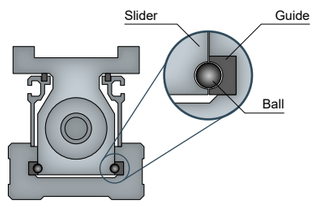
Line-up		Size 04	Size 05	Size 08	Catalog page
Actuator	Slider EBS-G/M	●	●	●	104
Application Controller	ECMG	●	●	●	535
	ECG-A *1	●	●	●	565
	ECR *2	●	●	●	595

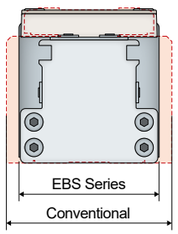
*1. EBS-P4 (for rechargeable battery manufacturing processes) can be connected to only Controllers ECG-A.
*2. EBS-FP1 (for food manufacturing processes) can be connected to Controllers ECR only.

High rigidity | Space saving | Reduced design | Reduced parts | Reduced man-hours

Compact, high-rigidity body

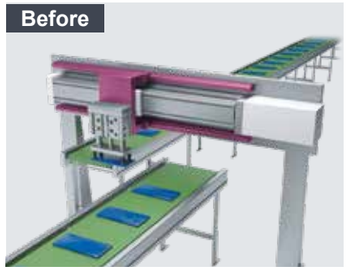
The guide that supports the load uses an outer rail. The wide guide integrated with the body achieves both high rigidity and space saving.





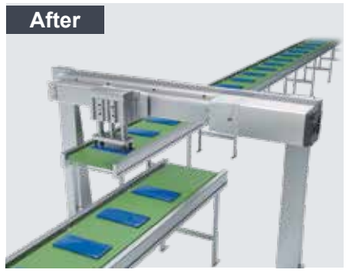
		Conventional Product	EBS-05
Body Width		64 mm	54 mm
Static Allowable Moment	MP	25.7 N·m	103 N·m
	MY	25.7 N·m	103 N·m
	MR	58 N·m	144 N·m

Before



Use of an additional guide to reduce moment

After

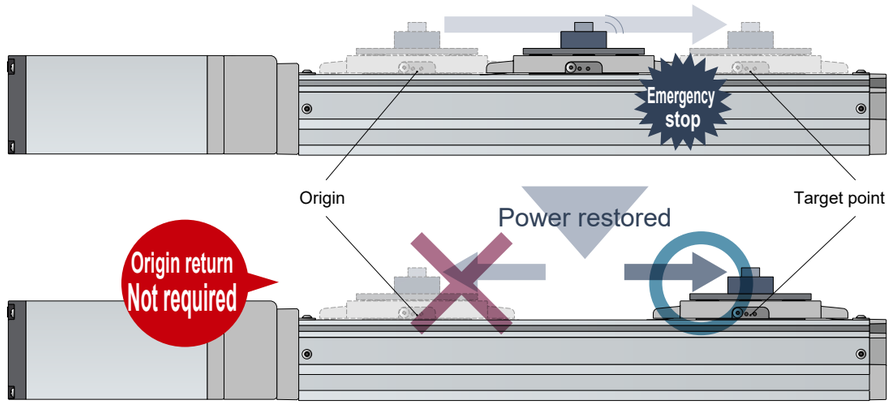


The high-rigidity body supports the moment, so the number of additional guides can be reduced

Easy maintenance | Reduced parts

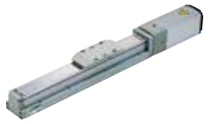
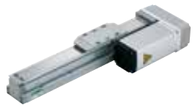
Battery-less Absolute Encoder

Equipped with an absolute encoder that retains current position information.
Because it is a battery-less specification, battery replacement maintenance is not required.
* Option for all series



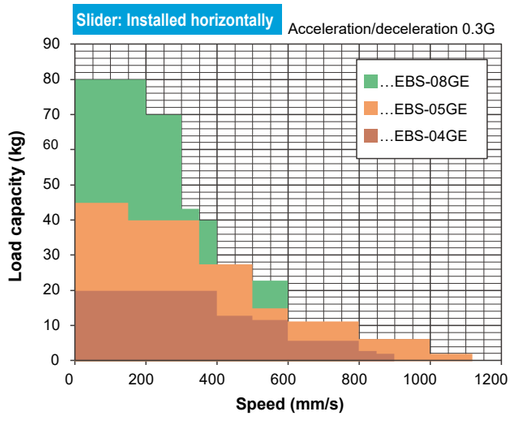
EBS Series

System Table

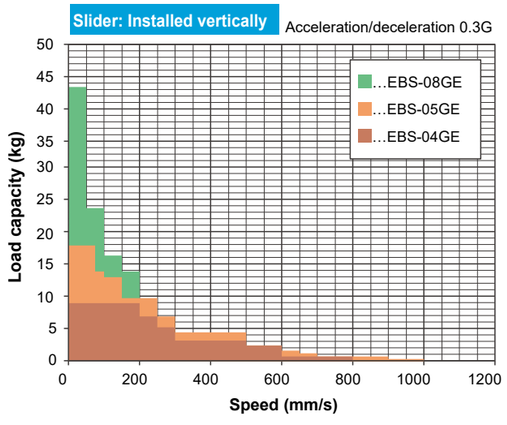
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s)	Page
ECMG Series		EBS-04GE-06	□35	Straight	44	6	20.0	9.2	155	50 mm: 450 mm/s; 100–450: 450 mm/s; 500: 400	108
		EBS-04GE-12				12	15.0	3.3	77	50 mm: 900; 100–450: 900; 500: 850	
		EBS-04GR/D/L-06		Reverse Parallel		6	20.0	9.2	155	50 mm: 375; 100–500: 375	112
		EBS-04GR/D/L-12				12	15.0	3.3	77	50 mm: 600; 100–500: 600	
		EBS-05GE-02	□42	Straight	54	2	45.0	18.3	550	50 mm: 130; 100–450: 130; 500: 120; 550: 105; 600: 95; 650: 80; 700: 70	118
		EBS-05GE-05				5	40.0	14.2	220	50 mm: 375; 100–450: 375; 500: 310; 550: 270; 600: 235; 650: 200; 700: 185	
		EBS-05GE-10				10	27.5	7.1	110	50 mm: 750; 100–450: 750; 500: 625; 550: 540; 600: 475; 650: 415; 700: 370	
		EBS-05GE-20				20	18.3	2.5	55	50 mm: 1120; 100–450: 1120; 500: 1080; 550: 950; 600: 830; 650: 740	
		EBS-05GR/D/L-02		Reverse Parallel		2	45.0	18.3	55	50 mm: 130; 100–450: 130; 500: 120; 550: 105; 600: 95; 650: 80; 700: 70	122
		EBS-05GR/D/L-05				5	40.0	10.0	220	50 mm: 350; 100–450: 350; 500: 310; 550: 270; 600: 235; 650: 200; 700: 185	
		EBS-05GR/D/L-10				10	27.5	3.3	110	50 mm: 635; 100–450: 635; 500: 625; 550: 540; 600: 475; 650: 415; 700: 370	
		EBS-05GR/D/L-20				20	18.3	0.8	55	50 mm: 1120; 100–450: 1120; 500: 1080; 550: 950; 600: 830; 650: 740	
		EBS-08GE-05	□56	Straight	82	5	80.0	43.3	965	50 mm: 230; 100–450: 230; 500: 220; 550: 200; 600: 180; 650: 135; 700: 120; 750: 110; 800: 100	128
		EBS-08GE-10				10	70.0	28.3	482	50 mm: 430; 100–450: 430; 500: 410; 550: 370; 600: 270; 650: 240; 700: 225; 750: 200	
		EBS-08GE-20				20	30.0	3.3	241	50 mm: 800; 100–450: 800; 500: 740; 550: 540; 600: 490; 650: 450; 700: 410	
		EBS-08GR/D/L-05		Reverse Parallel		5	80.0	33.3	965	50 mm: 200; 100–450: 200; 500: 180; 550: 135; 600: 120; 650: 110; 700: 100	132
		EBS-08GR/D/L-10				10	70.0	21.7	482	50 mm: 430; 100–450: 430; 500: 410; 550: 370; 600: 270; 650: 240; 700: 225; 750: 200	
		EBS-08GR/D/L-20				20	30.0	3.3	241	50 mm: 800; 100–450: 800; 500: 740; 550: 540; 600: 490; 650: 450; 700: 410	

* This data is for an acceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.

Slider: Installed horizontally Acceleration/deceleration 0.3G

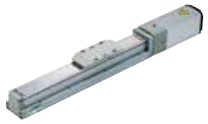


Slider: Installed vertically Acceleration/deceleration 0.3G

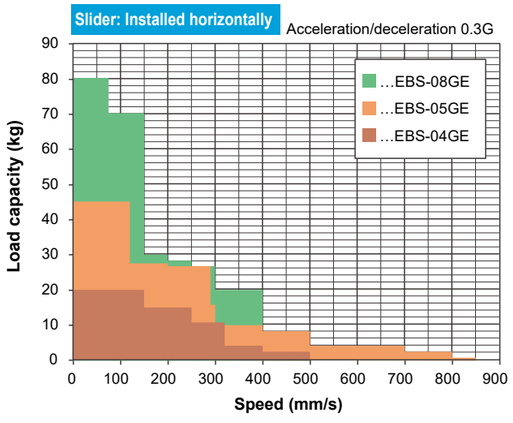


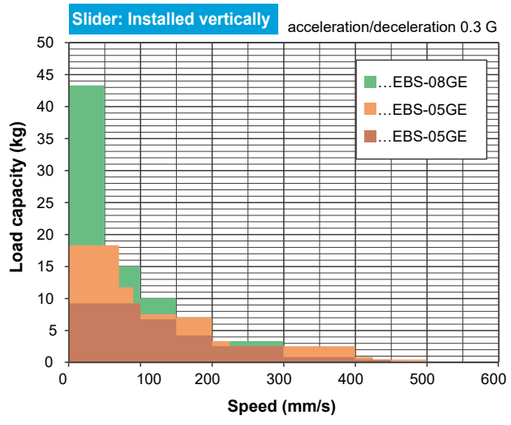
Slider Type
EJSG
EBS
Ending

System Table

Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s)	Page
ECG Series		EBS-04GE-06	□35	Straight	44	6	20.0	9.2	155	320 mm/s	108
		EBS-04GE-12				12	15.0	3.3	77	500	
		EBS-04GR/D/L-06		Reverse Parallel		6	20.0	9.2	155	250	112
		EBS-04GR/D/L-12				12	11.7	3.3	77	400	
		EBS-05GE-02	□42	Straight	54	2	45.0	18.3	550	120 (105, 95, 80, 70)	118
		EBS-05GE-05				5	40.0	14.0	220	290 (270, 235, 200, 185)	
		EBS-05GE-10				10	27.5	7.0	110	500 (475, 415, 370)	
		EBS-05GE-20				20	18.3	2.5	55	850 (830, 740)	
		EBS-05GR/D/L-02		Reverse Parallel		2	45.0	18.3	550	100 (95, 80, 70)	122
		EBS-05GR/D/L-05				5	40.0	10.0	220	250 (235, 200, 185)	
		EBS-05GR/D/L-10				10	27.5	3.3	110	400 (370)	
		EBS-05GR/D/L-20				20	18.3	0.8	55	700	
		EBS-08GE-05	□56	Straight	82	5	80.0	43.3	965	150 (135, 120, 110, 100)	128
		EBS-08GE-10				10	70.0	28.3	482	250 (240, 225, 200)	
		EBS-08GE-20				20	30.0	3.3	241	500 (490, 450, 410)	
		EBS-08GR/D/L-05		Reverse Parallel		5	80.0	33.3	965	125 (120, 110, 100)	132
		EBS-08GR/D/L-10				10	70.0	18.3	482	250 (240, 225, 200)	
		EBS-08GR/D/L-20				20	30.0	3.3	241	400	

* This data is for an acceleration/deceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.





Electric Actuator Slider Type

EBS-04□E

Inline Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 04 M E - 06 0300 N A N - C S03

❶

04	Body width 44 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

0050 to 0500	50 mm (every 50 mm) 500 mm

❻Brake*2

N	None
B	Yes

❼Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG		ECR	
Motor		□35 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				Battery-less Absolute Encoder	
Drive Method		Ball screw ø10					
Stroke	mm	50 to 500					
Screw lead	mm	6	12	6	12	6	12
Max. Payload *1*2	Horizontal kg	20.0	15.0	20.0	15.0	16.6 (16.6)	11.6 (13.3)
	Vertical kg	9.2	3.3	9.2	3.3	6.6 (8.3)	2.5 (3.3)
Operating Speed Range *1*3	mm/s	7 to 450	15 to 900	7 to 320	15 to 500	7 to 200 (400)	15 to 600 (800)
Max. Acceleration/ Deceleration G*1	Horizontal	1.0		0.7		0.7 (1.0)	
	Vertical	0.5		0.3		0.3 (0.5)	
Max. Pushing Force	N	155	77	155	77	177	89
Pushing Operation Speed Range	mm/s	5 to 20		5 to 20		5 to 25	5 to 30
Repeatability	mm	±0.01					
Lost Motion	mm	0.1 or less					
Static Allowable Moment	N·m	MP: 62 MY: 62 MR: 92					
Motor Power Supply Voltage		24 VDC ±10%				24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1				7	
	Holding Force N	140	70	140	70	126	63
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)				0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-04G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm) 50 to 450	Stroke (mm) 500
6	24 VDC	450	400
12	24 VDC	900	850

[EBS-04G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm) 50 to 500
6	24 VDC	320
12	24 VDC	500

* For EBS-04M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-04G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	1.0 6	1.0 12
7	20.0		16.7	
15	20.0	15.0	16.7	5.4
100	20.0	15.0	16.7	5.4
150	20.0	15.0	15.0	5.4
200	20.0	15.0	14.2	5.4
350	20.0	15.0	12.1	5.4
400	20.0	15.0	9.2	5.4
450	11.7	12.9	8.3	5.4
500		12.9		5.4
600		11.7		5.4
800		5.8		2.5
850		2.9		1.7
900		2.1		0.8

[Vertical Installation]

■ EBS-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	0.5 6	0.5 12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
200	9.2	3.3	9.2	3.3
250	7.1	3.3	6.7	3.3
300	5.4	3.3	4.2	3.3
350	2.5	3.3	1.7	3.3
400	1.7	3.3		3.3
500		3.3		3.3
600		2.5		2.5
800		0.8		0.8

[EBS-04G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	0.7 6	0.7 12
7	20.0		20.0	
15	20.0	15.0	20.0	15.0
100	20.0	15.0	20.0	10.8
150	20.0	15.0	12.5	10.8
200	15.0	15.0	12.5	10.8
250	11.7	10.8	11.7	8.3
300	7.5	10.8	7.5	8.3
320	7.5	4.2	7.5	4.2
400		4.2		4.2
500		2.5		2.5

*This is for an acceleration/deceleration of 0.3 G.
*For ECR, please refer to P. 144.

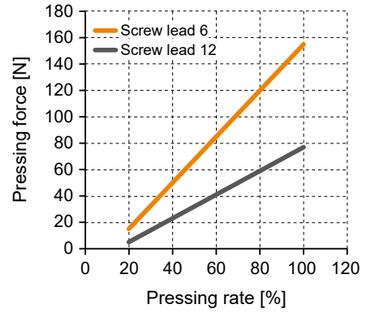
[Vertical Installation]

■ EBS-04GE (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12
7	9.2	
15	9.2	3.3
100	9.2	3.3
150	6.7	3.3
200	4.2	3.3
225	1.7	2.5
250	1.7	2.5
275	0.4	2.5
300		2.5
350		0.8
400		0.8
450		0.4

Pushing Force

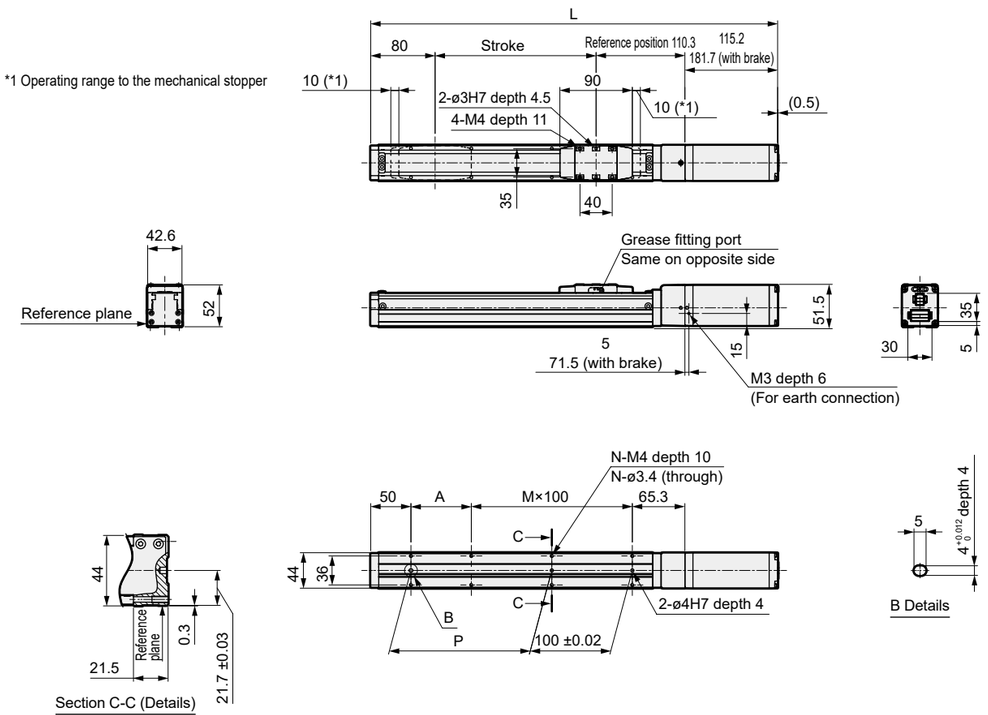
[EBS-04G (Connected Controller ECMG/ECG)]



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

Outline Dimensions, Inline Motor Mount

● EBS-04□E



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke (mm)		50	100	150	200	250	300	350	400	450	500
L	Without Brake	355.5	405.5	455.5	505.5	555.5	605.5	655.5	705.5	755.5	805.5
	With Brake	422	472	522	572	622	672	722	772	822	872
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without Brake	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.6	2.7
	With Brake	2.0	2.1	2.3	2.4	2.5	2.7	2.8	2.9	3.1	3.2

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EBS-04 □□

Reverse Parallel Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 04 ❶ | M ❷ | R ❸ | - 06 ❹ | 0300 ❺ | N ❻ | A ❼ | N - C | S03 ❽

❶Body Size

04	Body width 44 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke *2

0050 to 0500	50 mm (every 50 mm) 500 mm

❻Brake *3

N	None
B	Yes

❼Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0500 (500 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG		ECR	
Motor		□35 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				Battery-less Absolute Encoder	
Drive Method		Ball screw ø10					
Stroke	mm	50 to 500					
Screw lead	mm	6	12	6	12	6	12
Max. Payload *1*2	kg Horizontal	20.0	15.0	20.0	11.7	16.6 (16.6)	11.6 (13.3)
	Vertical	9.2	3.3	9.2	3.3	6.6 (8.3)	2.5 (3.3)
Operating Speed Range *1*3	mm/s	7 to 375	15 to 600	7 to 250	15 to 400	7 to 200 (400)	15 to 500 (700)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0		0.7		0.7 (1.0)	
	Vertical	0.5		0.3		0.3 (0.5)	
Max. Pushing Force	N	155	77	155	77	177	89
Pushing Operation Speed Range	mm/s	5 to 20		5 to 20		5 to 25	5 to 30
Repeatability	mm	±0.01					
Lost Motion	mm	0.1 or less					
Static Allowable Moment	N·m	MP: 62 MY: 62 MR: 92					
Motor Power Supply Voltage		24 VDC ±10%				24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1				7	
	Holding Force N	140	70	140	70	126	63
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)				0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP20					

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-04G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm) 50 to 500
6	24 VDC	375
12	24 VDC	600

[EBS-04G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm) 50 to 500
6	24 VDC	250
12	24 VDC	400

* For EBS-04M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-04G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-04GR/L/D (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	1.0 6	1.0 12
7	20.0		16.7	
15	20.0	15.0	16.7	5.4
100	20.0	15.0	16.7	5.4
150	20.0	15.0	15.0	5.4
200	20.0	15.0	14.2	5.4
250	20.0	15.0	12.1	5.4
300	20.0	15.0	11.7	5.4
350	20.0	15.0	11.3	5.4
375	15.8	15.0	9.2	5.4
400		15.0		5.4
500		11.7		5.4
600		0.8		

[Vertical Installation]

■ EBS-04GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	0.5 6	0.5 12
7	9.2		9.2	
15	9.2	3.3	9.2	3.3
150	9.2	3.3	9.2	3.3
200	8.3	3.3	8.3	3.3
250	5.8	3.3	5.8	3.3
300	4.6	3.3	4.2	3.3
350	2.5	2.1	1.7	2.1
375	0.8	2.1		2.1
400		2.1		2.1
500		0.8		0.8
600				
800				

[EBS-04G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-04GR/L/D (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12	0.7 6	0.7 12
7	20.0		20.0	
100	20.0	11.7	20.0	10.0
150	13.3	11.7	11.7	10.0
200	13.3	11.7	10.0	10.0
250	10.0	8.3	8.3	8.3
300		8.3		8.3
400		3.3		3.3

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 144.

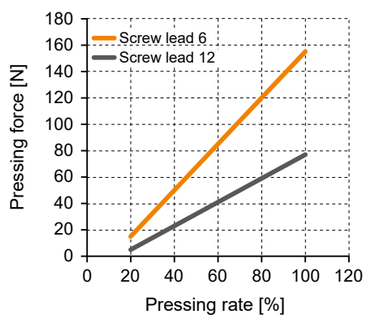
[Vertical Installation]

■ EBS-04GR/D/L (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw Lead (mm) 6	0.3 12
7	9.2	
15	9.2	3.3
50	9.2	3.3
100	6.7	3.3
150	3.3	3.3
200	2.5	3.3
225	0.8	1.7
300		1.7
350		0.8

Pushing Force

[EBS-04G (Connected Controller ECMG/ECG)]

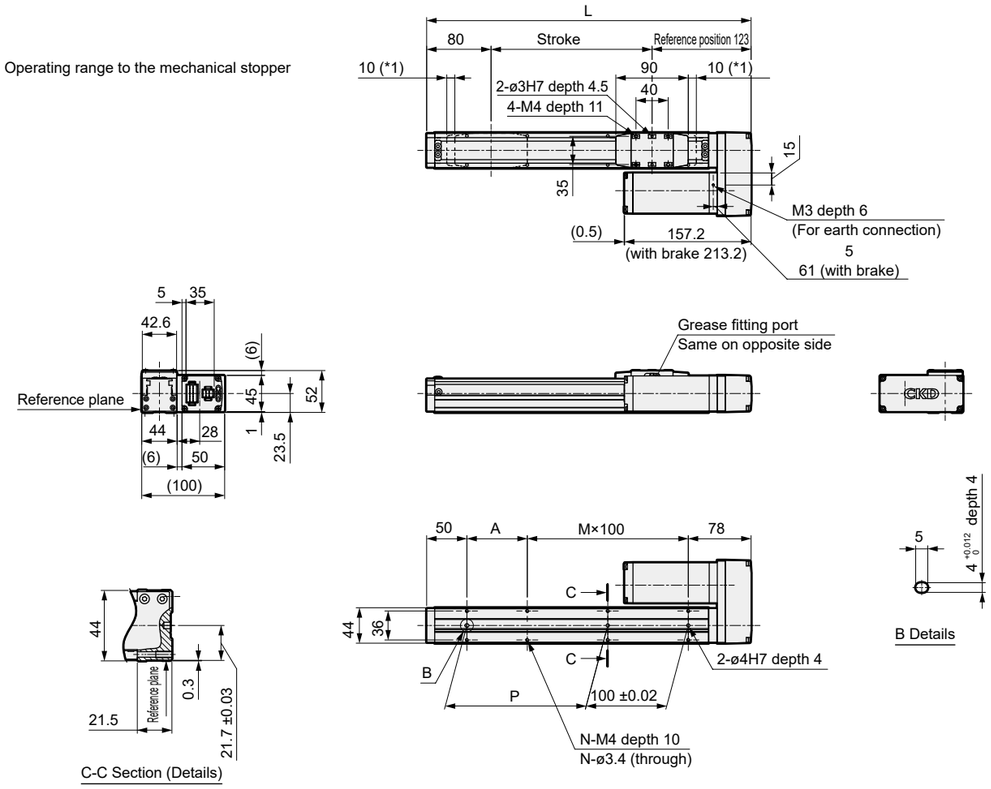


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

External Dimension Drawing Motor Right Side Return Mount

● EBS-04□R

*1 Operating range to the mechanical stopper

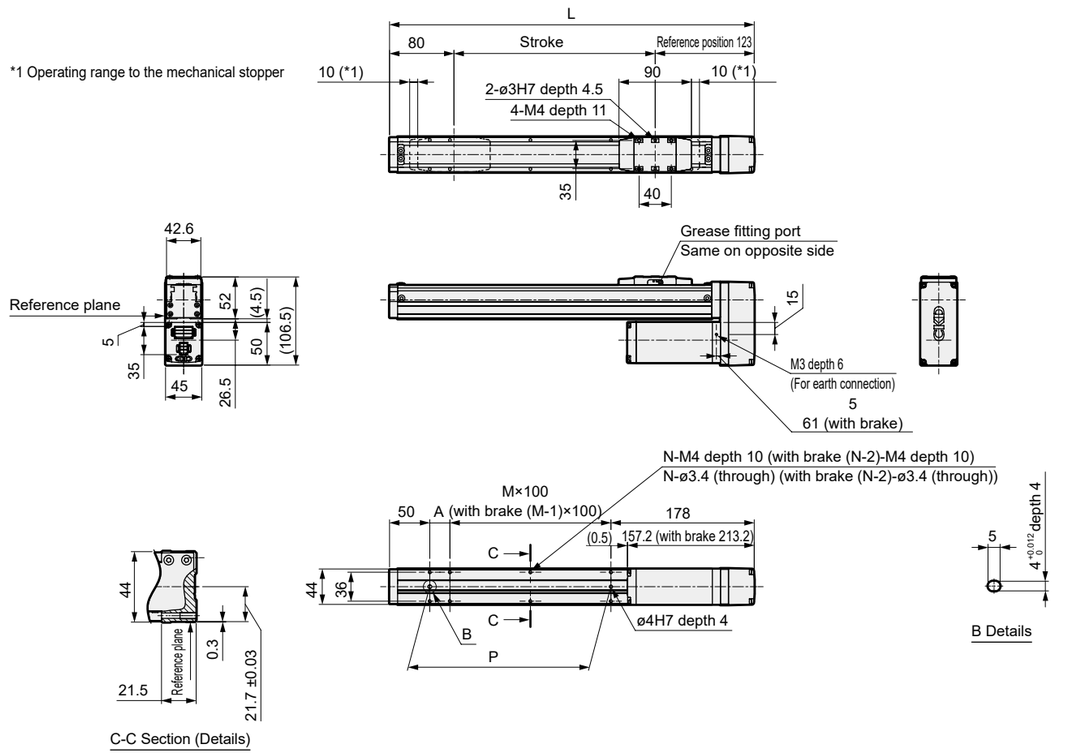


Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke (mm)		50	100	150	200	250	300	350	400	450	500
L		253	303	353	403	453	503	553	603	653	703
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without Brake	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.1	3.3
	With Brake	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8

External Dimension Drawing Motor Bottom Side Return Mount

● EBS-04□D

*1 Operating range to the mechanical stopper

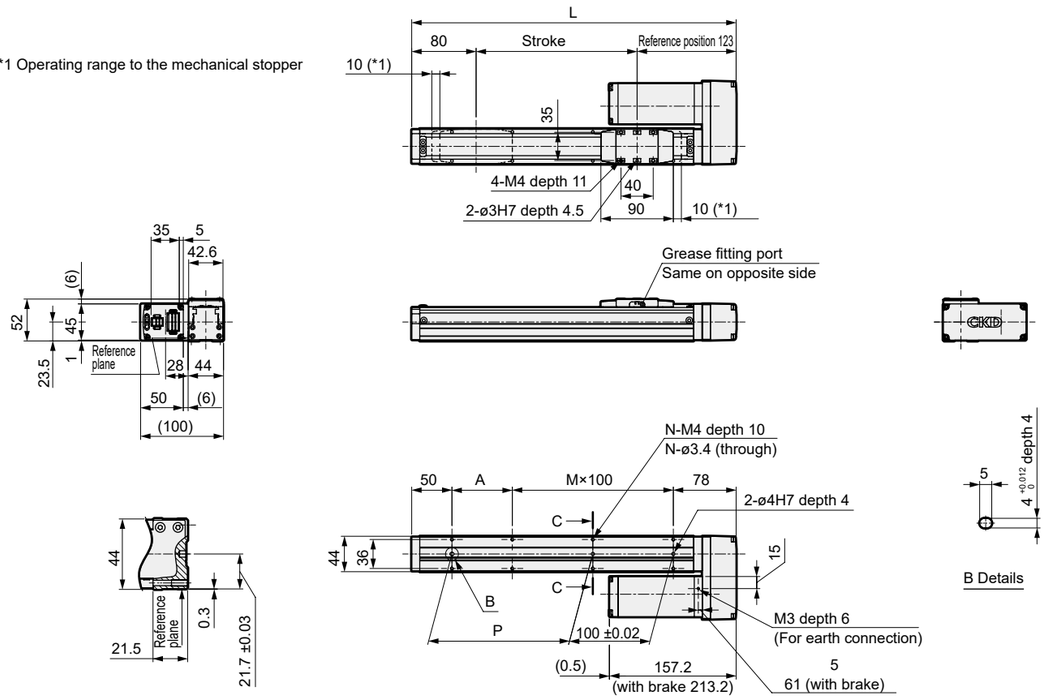


Stroke Code		0250	0300	0350	0400	0450	0500
Stroke (mm)		250	300	350	400	450	500
L		453	503	553	603	653	703
A		25	75	25	75	25	75
M		2	2	3	3	4	4
N		8	8	10	10	12	12
P		225	275	325	375	425	475
Weight (kg)	Without Brake	2.4	2.6	2.7	2.9	3.1	3.3
	With Brake	2.9	3.1	3.2	3.4	3.6	3.8

External Dimension Drawing Motor Left Side Return Mount

● EBS-04□L

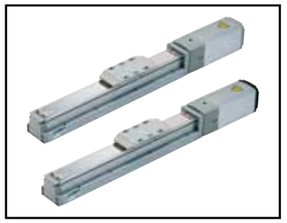
*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke (mm)		50	100	150	200	250	300	350	400	450	500
L		253	303	353	403	453	503	553	603	653	703
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without Brake	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.1	3.3
	With Brake	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8

MEMO

Slider Type
EJSG
EBS
Ending



Electric Actuator Slider Type

EBS-05□E

Inline Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 05 M E - 05 0300 N A N - C S03

❶ Body Size

05	Body width 54 mm

❷ Connected Controller*1

G	ECMG/ECG
M	ECR

❸ Motor Mounting Direction

E	Inline Mount

❹ Screw Lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

❺ Stroke

0050 to 0800	50 mm (every 50 mm) 800 mm

❻ Brake*2

N	None
B	Yes

❼ Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽ Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG				ECG				ECR		
Motor		□42 Stepping Motor										
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder								Battery-less Absolute Encoder		
Drive Method		Ball screw ø12										
Stroke	mm	50 to 800										
Screw lead	mm	2	5	10	20	2	5	10	20	2	5	10	20
Max. Payload *1*2	kg Horizontal	45.0	40.0	27.5	18.3	45.0	40.0	27.5	18.3	45.0 (45.0)	40.0 (40.0)	35.0 (35.0)	16.6 (16.6)
	Vertical	18.3	14.2	7.1	2.5	18.3	14.0	7.0	2.5	24.0 (24.0)	16.6 (16.6)	8.3 (8.3)	4.5 (4.5)
Operating Speed Range *1*3	mm/s	2 to 130	6 to 375	12 to 750	25 to 1120	2 to 120	6 to 290	12 to 500	25 to 850	2 to 70 (130)	6 to 250 (300)	12 to 600 (700)	25 to 900 (1100)
Max. Acceleration/ Deceleration G *1	Horizontal	0.7	1.0			0.7				0.7 (0.7)	0.7 (1.0)		
	Vertical	0.5				0.3				0.3 (0.5)			
Max. Pushing Force	N	550	220	110	55	550	220	110	55	385	250	121	44
Pushing Operation Speed Range	mm/s	5 to 20				5 to 20				5 to 25		5 to 30	
Repeatability	mm	±0.01											
Lost Motion	mm	0.1 or less											
Static Allowable Moment	N·m	MP: 103 MY: 103 MR: 144											
Motor Power Supply Voltage		24 VDC ±10%								24 VDC ±10% or 48 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%											
	Power Consumption W	6.1								7			
	Holding Force N	420	168	84	42	420	168	84	42	471	188	94	47
Insulation Resistance		10 MΩ, 500 VDC											
Dielectric Strength		500 VAC for 1 minute											
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)								0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)											
Atmosphere		No corrosive gas, explosive gas, or dust											
Protection Structure		IP20											

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-05G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)					
		50 to 500	500 to 600	650	700	750	800
2	24 VDC	130	120	105	95	80	70
5	24 VDC	375	310	270	235	200	185
10	24 VDC	750	625	540	475	415	370
20	24 VDC	1120		1080	950	830	740

[EBS-05G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 600	650	700	750	800
2	24 VDC	120	105	95	80	70
5	24 VDC	290	270	235	200	185
10	24 VDC	500		475	415	370
20	24 VDC	850				740

* For EBS-05M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-05G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.7 2	5	10	20	1.0 2	5	10	20
2	45.0				45.0							
6	45.0	40.0			45.0	40.0						
12	45.0	40.0	27.5		45.0	40.0	22.9					
25	45.0	40.0	27.5	18.3	45.0	40.0	22.9	8.3				
100	45.0	40.0	27.5	18.3	45.0	40.0	22.9	8.3				
130	45.0	40.0	27.5	18.3		30.4	14.2	6.7				
200		40.0	27.5	18.3		30.4	14.2	6.7				
250		40.0	27.5	15.0		20.4	12.9	6.3				
300		40.0	27.5	15.0		13.8	12.9	6.3				
350		40.0	27.5	15.0		9.2	12.9	6.3				
375		20.0	27.5	15.0		7.9	12.9	6.3				
400			27.5	15.0			12.9	6.3				
500			20.4	13.3			10.8	6.3				
600			15.0	13.3			6.3	6.3				
700			6.7	11.3			3.3	4.2				
750			2.9	11.3			2.9	4.2				
800				11.3				4.2				
1,000				6.3				2.9				
1120				2.1				1.7				

[Vertical Installation]

■ EBS-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20
2	18.3				18.3			
6	18.3	14.2			18.3	14.2		
12	18.3	14.2	7.1		18.3	14.2	7.1	
25	18.3	14.2	7.1	2.5	18.3	14.2	7.1	2.5
75	18.3	14.2	7.1	2.5	18.3	14.2	7.1	2.5
100	14.2	14.2	7.1	2.5	7.9	14.2	7.1	2.5
130	4.2	13.3	7.1	2.5		13.3	7.1	2.5
150		13.3	7.1	2.5		13.3	7.1	2.5
250		10.0	7.1	2.5		10.0	7.1	2.5
300		6.3	7.1	2.5		6.3	7.1	2.5
350		2.9	4.6	2.5		2.9	3.8	2.5
375		1.3	4.6	2.5		1.3	3.8	2.5
400			4.6	2.5			3.8	2.5
500			2.5	1.3			1.7	1.3
600			1.7	1.3			0.8	1.3
650			0.8	1.3				1.3
700				1.3				1.3
900				0.8				0.8
1,000				0.4				

[EBS-05G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.7 2	5	10	20
2	45.0				45.0			
6	45.0	40.0			45.0	40.0		
12	45.0	40.0	27.5		45.0	40.0	27.5	
25	45.0	40.0	27.5	18.3	45.0	40.0	27.5	8.3
100	45.0	40.0	27.5	18.3	45.0	40.0	27.5	8.3
120	45.0	26.7	27.5	10.0	45.0	26.7	27.5	6.7
200		26.7	27.5	10.0		26.7	27.5	6.7
250		26.7	15.8	10.0		26.7	12.5	6.7
290		26.7	15.8	10.0		15.8	12.5	6.7
300			15.8	10.0			12.5	6.7
400			10.0	8.3			9.2	5.0
500			5.8	8.3			2.5	5.0
700				4.2				2.5
800				2.5				1.7
850				0.8				0.4

[Vertical Installation]

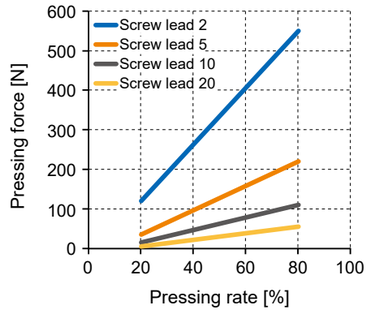
■ EBS-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20
2	18.3			
6	18.3	14.0		
12	18.3	14.0	7.0	
20	18.3	14.0	7.0	
25	18.3	14.0	7.0	2.5
50	18.3	14.0	7.0	2.5
70	18.3	9.2	7.0	2.5
90	11.7	9.2	7.0	2.5
100	2.5	9.2	7.0	2.5
120	2.5	7.5	7.0	2.5
150		7.5	7.0	2.5
200		4.2	7.0	2.5
225		3.3	2.5	2.5
250		2.1	2.5	2.5
300			2.5	2.5
350			2.1	2.5
400			1.3	2.5
425			0.8	0.4
500				0.4

* This is for an acceleration/deceleration of 0.3 G.
*For ECR, please refer to P. 144.

Pushing Force

[EBS-05G (Connected Controller ECMG/ECG)]

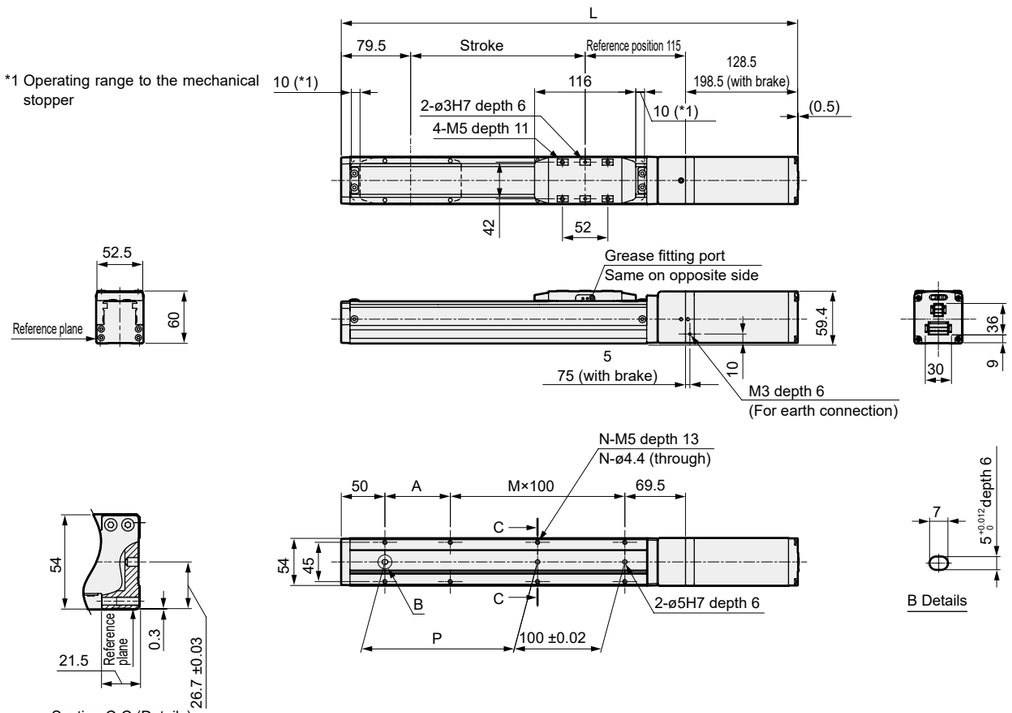


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

Outline Dimensions, Inline Motor Mount

● EBS-05□E

*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without Brake	373	423	473	523	573	623	673	723	773	823	873	923	973	1023	1073	1123
	With Brake	443	493	543	593	643	693	743	793	843	893	943	993	1043	1093	1143	1193
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7	4.8	5.0
	With Brake	3.5	3.6	3.8	3.9	4.1	4.2	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.4	5.5	5.7

MEMO

Slider Type
EJSG
EBS
Ending

Electric Actuator Slider Type

EBS-05□□

Reverse Parallel Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 05 ❶ M ❷ R ❸ - 05 ❹ 0300 ❺ N ❻ A ❼ N - C ❽ S03

❶Body Size

05	Body width 54 mm

❷Connected Controller*1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Screw Lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

❺Stroke *2

0050 to 0800	50 mm (every 50 mm) 800 mm

❻Brake *3

N	None
B	Yes

❼Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0800 (800 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG				ECG				ECR		
Motor		□42 Stepping Motor										
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder								Battery-less Absolute Encoder		
Drive Method		Ball screw ø12										
Stroke	mm	50 to 800										
Screw lead	mm	2	5	10	20	2	5	10	20	2	5	10	20
Max. Payload *1*2	kg Horizontal	45.0	40.0	27.5	18.3	45.0	40.0	27.5	18.3	45.0 (45.0)	40.0 (40.0)	35.0 (35.0)	16.6 (16.6)
	Vertical	18.3	10.0	3.3	0.8	18.3	10.0	3.3	0.8	24.0 (24.0)	16.6 (16.6)	8.3 (8.3)	4.5 (4.5)
Operating Speed Range *1*3	mm/s	2 to 130	6 to 325	12 to 635	25 to 1120	2 to 100	6 to 250	12 to 400	25 to 700	2 to 70 (130)	6 to 250 (300)	12 to 500 (600)	25 to 900 (1100)
Max. Acceleration/ Deceleration G *1	Horizontal	0.7	1.0			0.7				0.7 (0.7)	0.7 (1.0)		
	Vertical	0.5				0.3				0.3 (0.5)			
Max. Pushing Force	N	550	220	110	55	550	220	110	55	385	250	121	44
Pushing Operation Speed Range	mm/s	5 to 20				5 to 20				5 to 25		5 to 30	
Repeatability	mm	±0.01											
Lost Motion	mm	0.1 or less											
Static Allowable Moment	N·m	MP: 103 MY: 103 MR: 144											
Motor Power Supply Voltage		24 VDC ±10%								24 VDC ±10% or 48 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%											
	Power Consumption W	6.1								7			
	Holding Force N	420	168	84	42	420	168	84	42	471	188	94	47
Insulation Resistance		10 MΩ, 500 VDC											
Dielectric Strength		500 VAC for 1 minute											
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)								0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)											
Atmosphere		No corrosive gas, explosive gas, or dust											
Protection Structure		IP20											

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-05G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)					
		50 to 500	500 to 600	650	700	750	800
2	24 VDC	130	120	105	95	80	70
5	24 VDC	350	310	270	235	200	185
10	24 VDC	635	625	540	475	415	370
20	24 VDC	1120		1080	950	830	740

[EBS-05G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 650	700	750	800
2	24 VDC	100	95	80	70
5	24 VDC	250	235	200	185
10	24 VDC	400			370
20	24 VDC	700			

* For EBS-05M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-05G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.7 2	5	1.0 10	20
2	45.0				45.0			
6	45.0	40.0			45.0	40.0		
12	45.0	40.0	27.5		45.0	40.0	22.9	
25	45.0	40.0	27.5	18.3	45.0	40.0	22.9	8.3
50	45.0	40.0	27.5	18.3	45.0	40.0	22.9	8.3
70	45.0	40.0	27.5	18.3	39.2	40.0	22.9	8.3
100	45.0	40.0	27.5	18.3	3.3	40.0	22.9	8.3
130	31.3	40.0	27.5	15.0		23.3	14.2	6.7
150		40.0	27.5	15.0		23.3	14.2	6.7
200		40.0	27.5	15.0		18.3	14.2	6.7
250		40.0	27.5	15.0		13.3	12.9	6.3
325		19.2	27.5	15.0			12.9	6.3
400			27.5	15.0			12.9	6.3
500			20.4	13.3			10.8	6.3
600			15.0	13.3			6.3	6.3
635			4.6	11.3			3.3	4.2
800				11.3				4.2
1,000				6.3				2.5
1120				1.3				

[Vertical Installation]

■ EBS-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20
2	18.3				18.3			
6	18.3	10.0			18.3	10.0		
12	18.3	10.0	3.3		18.3	10.0	3.3	
25	18.3	10.0	3.3	0.8	18.3	10.0	3.3	0.8
75	18.3	10.0	3.3	0.8	18.3	10.0	3.3	0.8
100	14.2	10.0	3.3	0.8	7.9	10.0	3.3	0.8
200		10.0	3.3	0.8		10.0	3.3	0.8
250		7.5	3.3	0.8		5.8	3.3	0.8
300		3.8	3.3	0.8		1.7	3.3	0.8
325		0.8	3.3	0.8			2.9	0.8
400			3.3	0.8			2.9	0.8
500			2.5	0.8			1.7	0.8
600			0.8	0.8			0.8	0.8
900				0.8				0.8

[EBS-05G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.7 2	5	10	20
2	45.0				45.0			
6	45.0	40.0			45.0	40.0		
12	45.0	40.0	27.5		45.0	40.0	27.5	
25	45.0	40.0	27.5	18.3	45.0	40.0	27.5	7.5
100	45.0	40.0	27.5	18.3	45.0	40.0	27.5	7.5
120	45.0	26.7	23.3	10.0	45.0	26.7	20.0	5.0
200		26.7	23.3	10.0		26.7	20.0	5.0
250		8.3	11.7	10.0		8.3	11.7	5.0
300			11.7	10.0			11.7	5.0
400			3.3	6.7			3.3	4.2
500				6.7				4.2
700				3.3				1.7

[Vertical Installation]

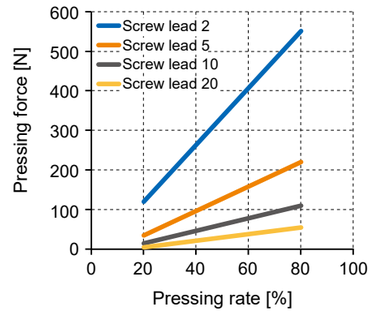
■ EBS-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20
2	18.3			
6	18.3	10.0		
12	18.3	10.0	3.3	
20	18.3	10.0	3.3	
25	18.3	10.0	3.3	0.8
50	18.3	10.0	3.3	0.8
70	18.3	8.3	3.3	0.8
90	11.7	8.3	3.3	0.8
100	2.5	8.3	3.3	0.8
120	2.5	6.7	2.1	0.8
150		6.7	2.1	0.8
200		2.5	2.1	0.8
210		0.8	1.3	0.8
300			1.3	0.8
325			0.4	0.8
400				0.8
500				0.4

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 144.

Pushing Force

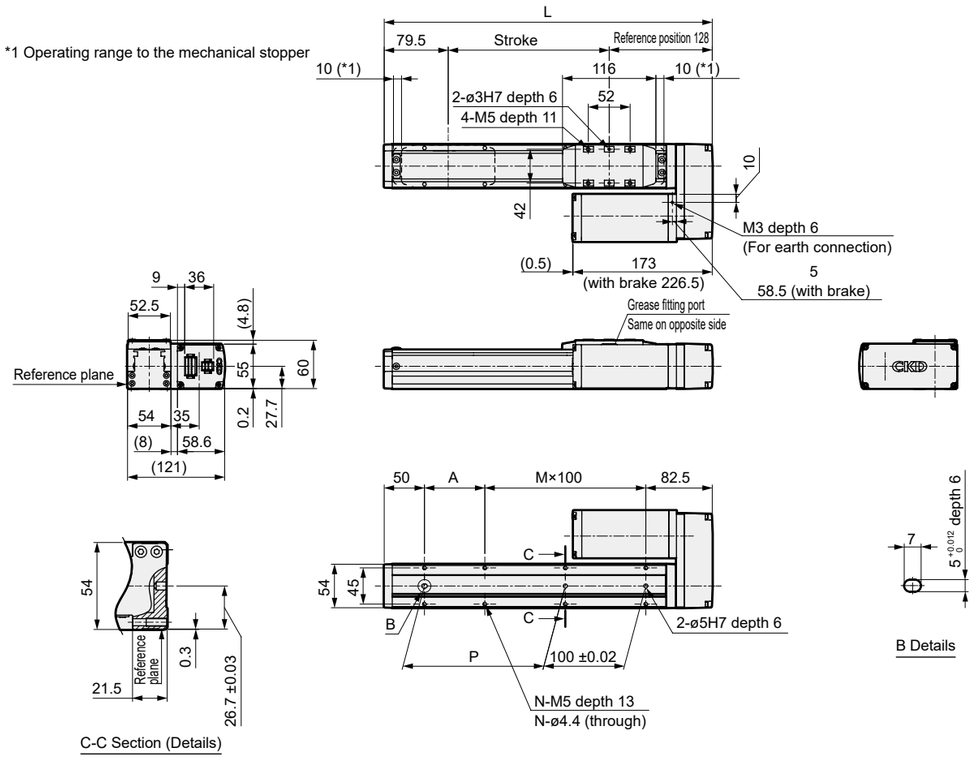
[EBS-05G (Connected Controller ECMG/ECG)]



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

External Dimension Drawing Motor Right Side Return Mount

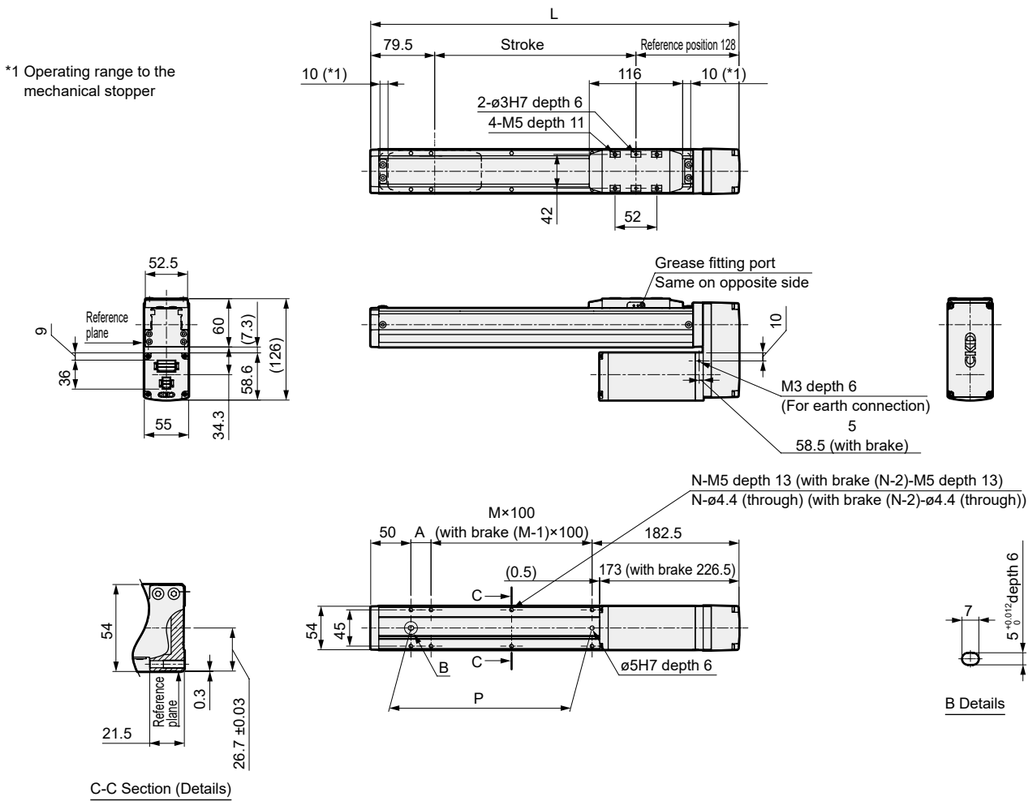
● EBS-05□R



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.7	2.8	3.0	3.1	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With Brake	3.4	3.5	3.7	3.8	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

External Dimension Drawing Motor Bottom Side Return Mount

● EBS-05□D

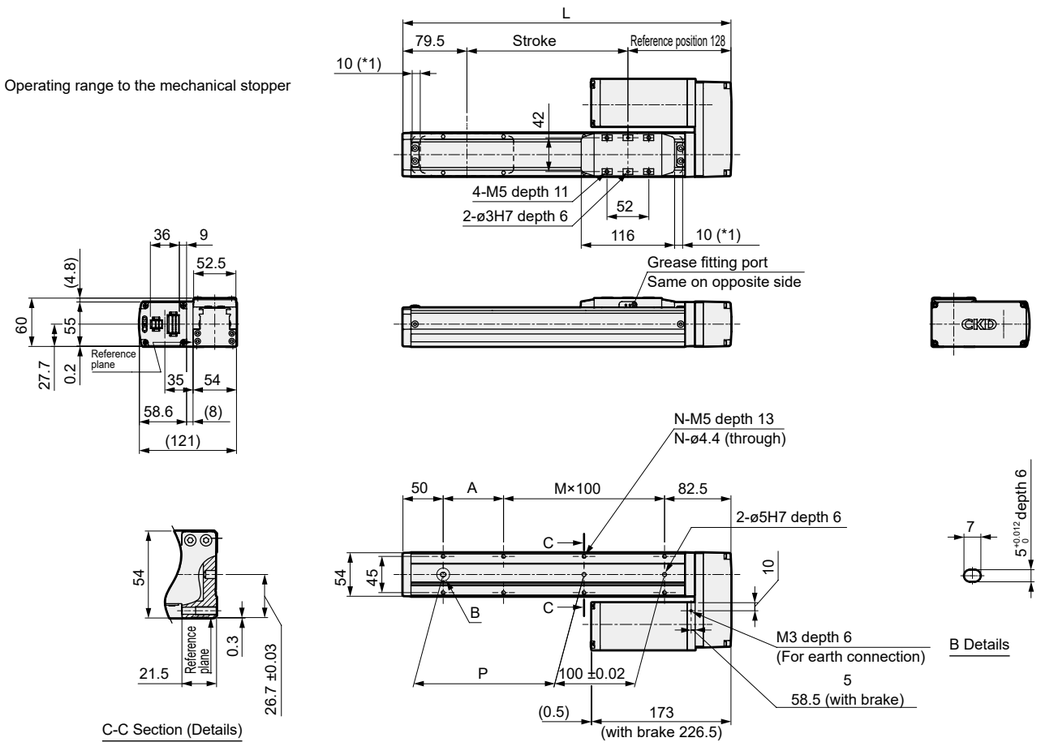


Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		250	300	350	400	450	500	550	600	650	700	750	800
L		457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7
N		8	8	10	10	12	12	14	14	16	16	18	18
P		225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With Brake	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

External Dimension Drawing Motor Left Side Return Mount

● EBS-05□L

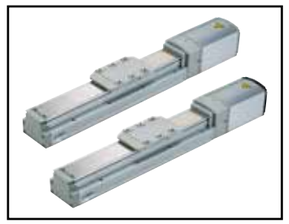
*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without Brake	2.7	2.8	3.0	3.1	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With Brake	3.4	3.5	3.7	3.8	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

MEMO

Slider Type
EJSG
EBS
Ending



Electric Actuator Slider Type

EBS-08□E

Inline Motor Mount Type

□56 Stepping Motor

CE UKCA RoHS

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 08 ❶ M ❷ E ❸ - 05 ❹ 0300 ❺ N ❻ A ❼ N - C ❽ S03

❶Body Size

08	Body width 82 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

05	5 mm
10	10 mm
20	20 mm

❺Stroke

0050 to 1100	50 mm (every 50 mm) 1100 mm

❻Brake*2

N	None
B	Yes

❼Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽Relay Cable*3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG			ECR		
Motor		□56 Stepping Motor								
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder						Battery-less Absolute Encoder		
Drive Method		Ball screw ø16								
Stroke	mm	50 to 1100								
Screw lead	mm	5	10	20	5	10	20	5	10	20
Max. Payload *1*2	kg Horizontal	80.0	70.0	30.0	80.0	70.0	30.0	80.0 (80.0)	70.0 (70.0)	43.3 (43.3)
	Vertical	43.3	28.3	3.3	43.3	28.3	3.3	38.3 (40.0)	18.3 (18.3)	10.0 (10.0)
Operating Speed Range *1*3	mm/s	6 to 230	12 to 430	25 to 800	6 to 150	12 to 250	25 to 500	6 to 150 (250)	12 to 300 (550)	25 to 600 (1100)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0			0.7			0.7 (1.0)		
	Vertical	0.5			0.3			0.3 (0.5)		
Max. Pushing Force	N	965	482	241	965	482	241	970	477	250
Pushing Operation Speed Range	mm/s	5 to 20			5 to 20			5 to 25	5 to 30	
Repeatability	mm	±0.01								
Lost Motion	mm	0.1 or less								
Static Allowable Moment	N·m	MP: 203 MY: 203 MR: 336								
Motor Power Supply Voltage		24 VDC ±10%						24 VDC ±10% or 48 VDC ±10%		
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%								
	Power Consumption W	7.2						8		
	Holding Force N	768	384	192	768	384	192	754	377	188
Insulation Resistance		10 MΩ, 500 VDC								
Dielectric Strength		500 VAC for 1 minute								
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)						0 to 40°C (no freezing) 35 to 80% RH (no condensation)		
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)								
Atmosphere		No corrosive gas, explosive gas, or dust								
Protection Structure		IP20								

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-08M (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)							
		50 to 750	800	850	900	950	1,000	1050	1100
5	24 VDC	230	220	200	180	135	120	110	100
10	24 VDC	430		410	370	270	240	225	200
20	24 VDC	800			740	540	490	450	410

[EBS-08G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 900	950	1,000	1050	1100
5	24 VDC	150	135	120	110	100
10	24 VDC	250		240	225	200
20	24 VDC	500		490	450	410

* For EBS-08M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-08G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	1.0 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	80.0	70.0	30.0
150	80.0	70.0	30.0	50.0	40.0	26.7
200	80.0	70.0	30.0	18.3	40.0	26.7
230	18.3	70.0	30.0		15.0	24.2
300		70.0	30.0		15.0	24.2
350		43.3	30.0		3.8	24.2
400		40.0	30.0			24.2
430		12.5	22.9			13.8
600			22.9			13.8
800			5.4			2.5

[Vertical Installation]

■ EBS-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	43.3			43.3		
12	43.3	28.3		43.3	28.3	
25	43.3	28.3	3.3	43.3	28.3	3.3
50	43.3	28.3	3.3	43.3	28.3	3.3
100	16.7	24.2	3.3	16.7	12.1	3.3
150	16.7	14.2	3.3	16.7	12.1	3.3
200	5.0	14.2	3.3	5.0	12.1	3.3
230	0.8	5.4	3.3		2.1	3.3
300		5.4	3.3		2.1	3.3
400		2.1	3.3		2.1	3.3
600			2.5			2.5
700			0.8			0.8

[EBS-08G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	70.0	18.3
150	40.0	70.0	30.0	35.0	70.0	18.3
200		28.3	30.0		17.5	18.3
250		28.3	26.7		17.5	18.3
300			26.7			18.3
400			20.0			11.7
500			3.3			

[Vertical Installation]

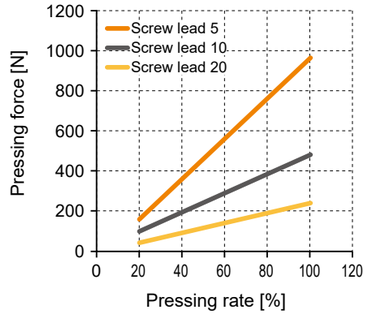
■ EBS-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	43.3		
12	43.3	28.3	
25	43.3	28.3	3.3
50	43.3	28.3	3.3
100	15.0	12.5	3.3
150	2.9	10.0	3.3
250		1.7	3.3
300			3.3
350			0.8

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 144.

Pushing Force

[EBS-08G (Connected Controller ECMG/ECG)]

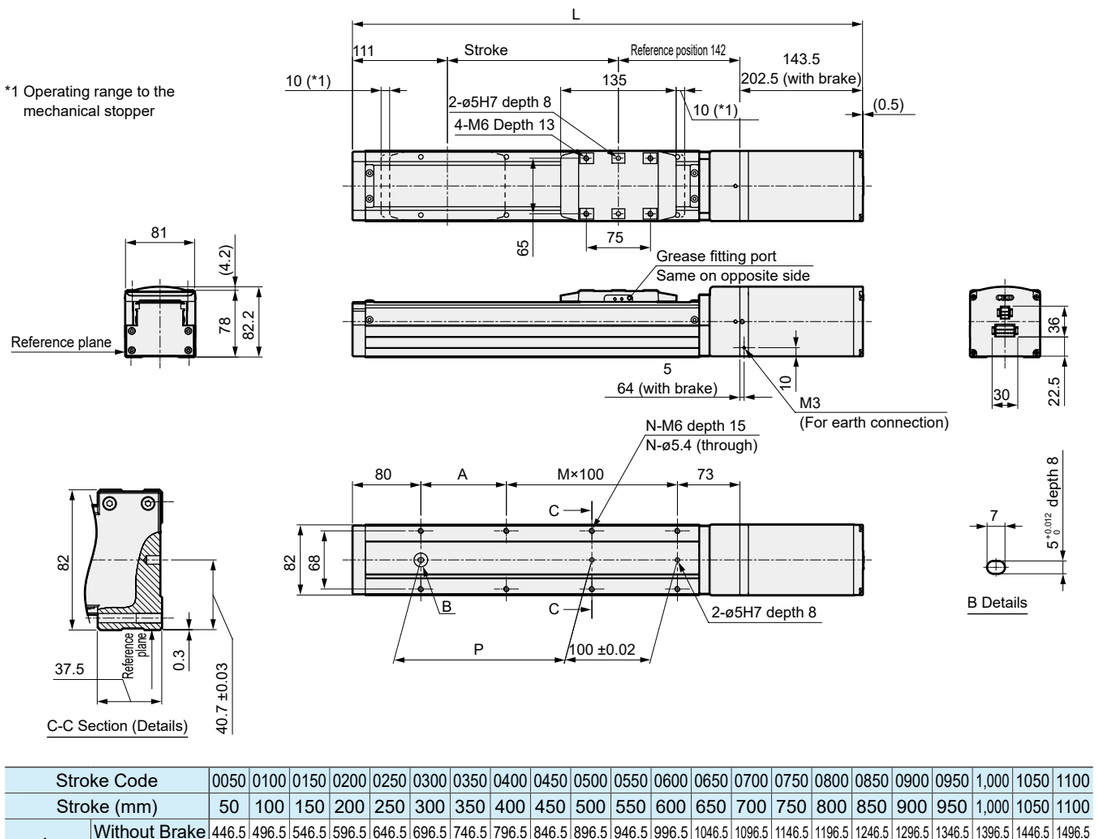


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

Outline Dimensions, Inline Motor Mount

● EBS-08□E

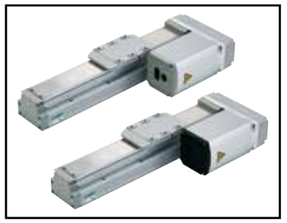
*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1,000	1050	1100
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100
L	Without Brake	446.5	496.5	546.5	596.5	646.5	696.5	746.5	796.5	846.5	896.5	946.5	996.5	1046.5	1096.5	1146.5	1196.5	1246.5	1296.5	1346.5	1396.5	1446.5	1496.5
	With Brake	505.5	555.5	605.5	655.5	705.5	755.5	805.5	855.5	905.5	955.5	1005.5	1055.5	1105.5	1155.5	1205.5	1255.5	1305.5	1355.5	1405.5	1455.5	1505.5	1555.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	6.7	7.0	7.3	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.3	10.6	10.9	11.2	11.6	11.9	12.2	12.6	12.9	13.2	13.5
	With Brake	8.0	8.3	8.6	8.9	9.3	9.6	9.9	10.3	10.6	10.9	11.2	11.6	11.9	12.2	12.5	12.9	13.2	13.5	13.9	14.2	14.5	14.8

MEMO

Slider Type
EJSG
EBS
Ending



Electric Actuator Slider Type

EBS-08□□

Reverse Parallel Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBS - 08 M R - 05 0300 N A N - C S03

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶Body Size

08	Body width 82 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Screw Lead

05	5 mm
10	10 mm
20	20 mm

❺Stroke *2

0050 to 1100	50 mm (every 50 mm) 1100 mm

❻Brake *3

N	None
B	Yes

❼Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❽Relay Cable *4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "1100 (1100 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG			ECR	
Motor		□56 Stepping Motor							
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder						Battery-less Absolute Encoder	
Drive Method		Ball screw ø16							
Stroke	mm	50 to 1100							
Screw lead	mm	5	10	20	5	10	20	5	10	20
Max. Payload *1*2	kg Horizontal	80.0	70.0	30.0	80.0	70.0	30.0	80.0 (80.0)	70.0 (70.0)	43.3 (43.3)
	Vertical	33.3	21.7	3.3	33.3	18.3	3.3	36.6 (40.0)	16.6 (18.3)	8.3 (8.3)
Operating Speed Range *1*3	mm/s	6 to 200	12 to 430	25 to 800	6 to 150	12 to 250	25 to 500	6 to 100 (225)	12 to 300 (550)	25 to 500 (1000)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0			0.7			0.7 (1.0)		
	Vertical	0.5			0.3			0.3 (0.5)		
Max. Pushing Force	N	965	482	241	965	482	241	970	477	250
Pushing Operation Speed Range	mm/s	5 to 20			5 to 20			5 to 25	5 to 30	
Repeatability	mm	±0.01							
Lost Motion	mm	0.1 or less							
Static Allowable Moment	N·m	MP: 203 MY: 203 MR: 336							
Motor Power Supply Voltage		24 VDC ±10%						24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%							
	Power Consumption W	7.2						8	
	Holding Force N	768	384	192	768	384	192	754	377	188
Insulation Resistance		10 MΩ, 500 VDC							
Dielectric Strength		500 VAC for 1 minute							
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)						0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)							
Atmosphere		No corrosive gas, explosive gas, or dust							
Protection Structure		IP20							

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 144 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBS-08G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)							
		50 to 800	850	900	950	1,000	1050	1100
5	24 VDC	200		180	135	120	110	100
10	24 VDC	430	410	370	270	240	225	200
20	24 VDC	800		740	540	490	450	410

[EBS-08G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 950	1,000	1050	1100
5	24 VDC	125	120	110	100
10	24 VDC	250	240	225	200
20	24 VDC	400			

* For EBS-08M (connected controller ECR), please refer to P. 151.

Speed and Payload

[EBS-08G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBS-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	1.0 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	30.0
50	80.0	70.0	30.0	80.0	70.0	30.0
100	80.0	70.0	30.0	40.0	70.0	30.0
150	80.0	70.0	30.0	8.8	40.0	26.7
200	80.0	70.0	30.0		40.0	26.7
300		70.0	30.0		15.0	16.3
350		43.3	30.0		3.8	16.3
400		40.0	30.0			16.3
430		12.5	16.7			9.6
600			16.7			9.6
800			3.8			1.7

[Vertical Installation]

■ EBS-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	33.3			33.3		
12	33.3	21.7		33.3	21.7	
25	33.3	21.7	3.3	33.3	21.7	3.3
50	33.3	21.7	3.3	33.3	21.7	3.3
100	16.7	21.7	3.3	16.7	12.1	3.3
150	8.3	12.5	3.3	8.3	12.1	3.3
200	3.3	12.5	3.3	3.3	12.1	3.3
300		5.4	3.3		2.1	3.3
400		0.8	3.3			3.3
600			1.7			1.7

[EBS-08G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBS-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	30.0	80.0	70.0	26.7
50	80.0	70.0	30.0	80.0	70.0	26.7
75	68.3	70.0	30.0	68.3	70.0	26.7
100	40.0	70.0	30.0	40.0	70.0	26.7
125	40.0	70.0	30.0	40.0	30.0	18.3
150		70.0	30.0		30.0	18.3
200		28.3	30.0		17.5	18.3
250		21.7	6.7		17.5	6.7
300			6.7			6.7
400			3.3			3.3

[Vertical Installation]

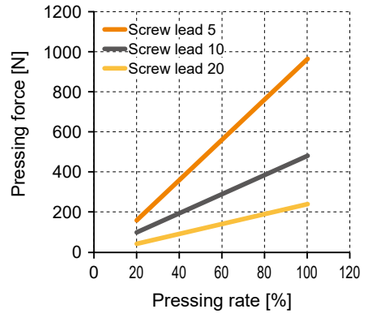
■ EBS-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	33.3		
12	33.3	18.3	
25	33.3	18.3	3.3
50	25.0	18.3	3.3
75	15.0	12.5	3.3
100	12.5	12.5	3.3
125	2.9	10.0	3.3
200		1.7	3.3
300			3.3
350			0.8

* This is for an acceleration/deceleration of 0.3 G.
*For ECR, please refer to P. 144.

Pushing Force

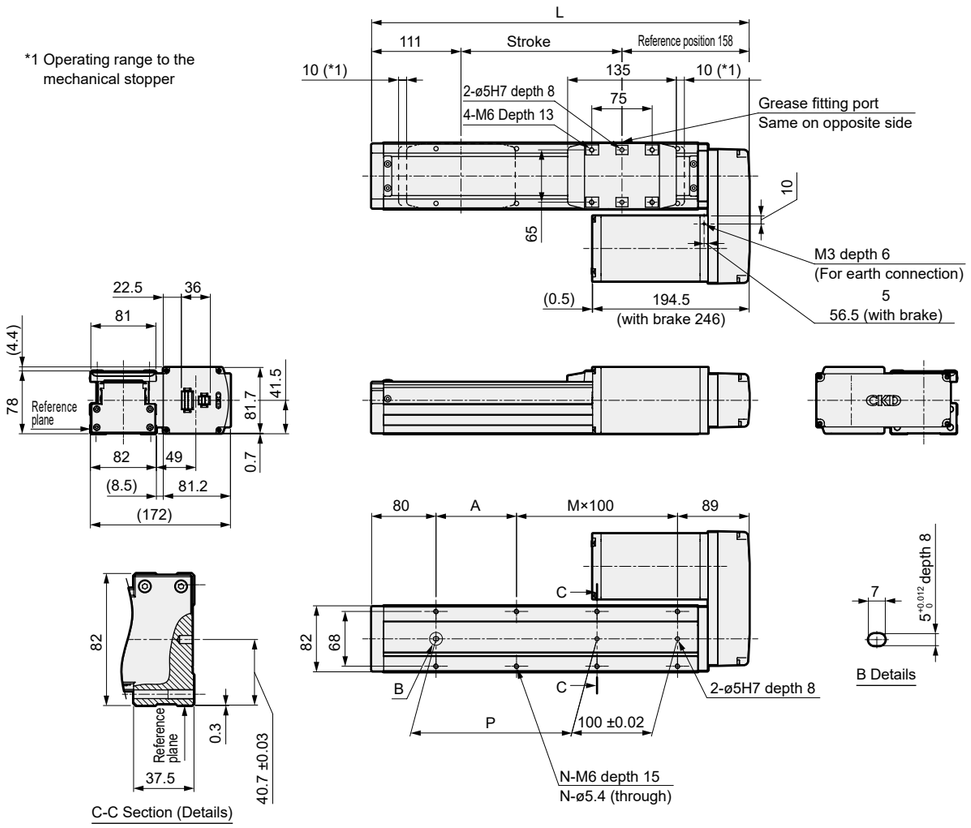
[EBS-08G (Connected Controller ECMG/ECG)]



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 151.

External Dimension Drawing Motor Right Side Return Mount

● EBS-08□R

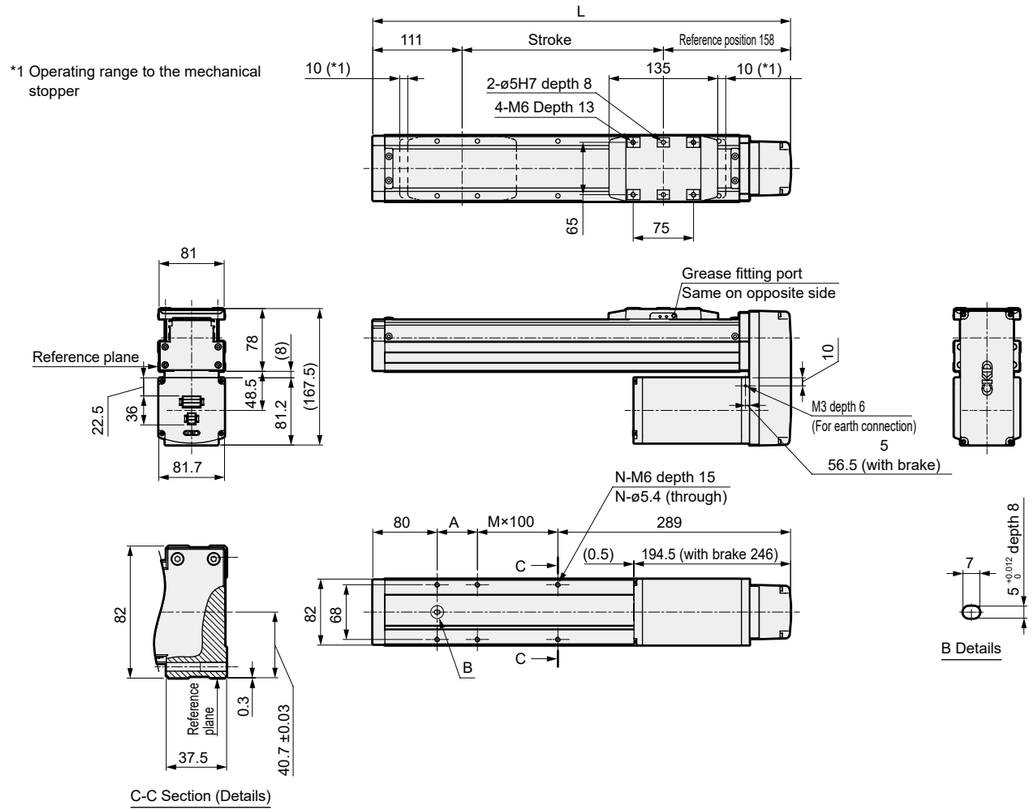


Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without Brake	5.7	6.1	6.5	6.8	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8
	With Brake	7.0	7.4	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1

Stroke Code		0850	0900	0950	1,000	1050	1100
Stroke (mm)		850	900	950	1,000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	11.2	11.4	11.8	12.1	12.5	12.9
	With Brake	12.5	12.7	13.1	13.4	13.8	14.2

External Dimension Drawing Motor Bottom Side Return Mount

● EBS-08□D



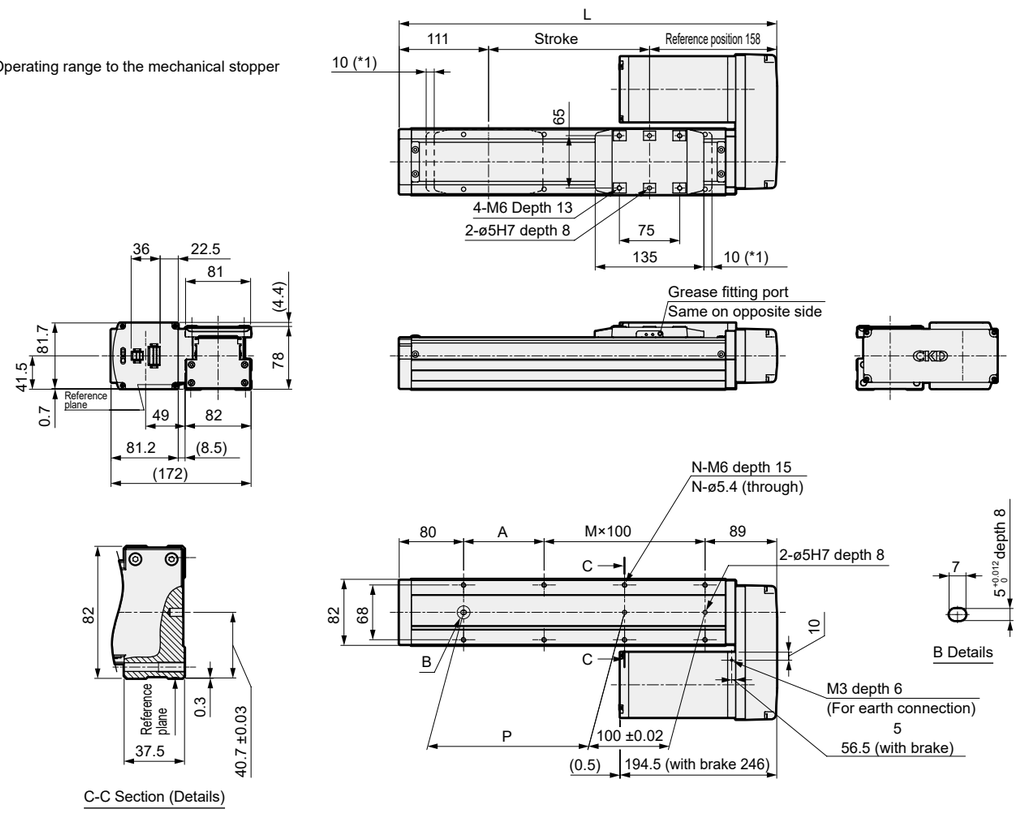
Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1,000
Stroke (mm)		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000
L		519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
Weight (kg)	Without Brake	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8	11.2	11.4	11.8	12.1
	With Brake	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1	12.5	12.7	13.1	13.4

Stroke Code		1050	1100
Stroke (mm)		1050	1100
L		1319	1369
A		50	100
M		9	9
N		22	22
Weight (kg)	Without Brake	12.5	12.9
	With Brake	13.8	14.2

External Dimension Drawing Motor Left Side Return Mount

● EBS-08□L

*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without Brake	5.7	6.1	6.5	6.8	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8
	With Brake	7.0	7.4	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1

Stroke Code		0850	0900	0950	1,000	1050	1100
Stroke (mm)		850	900	950	1,000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1,000	1050	1100
Weight (kg)	Without Brake	11.2	11.4	11.8	12.1	12.5	12.9
	With Brake	12.5	12.7	13.1	13.4	13.8	14.2

MEMO

Slider Type
EJSG
EBS
Ending

Model Selection

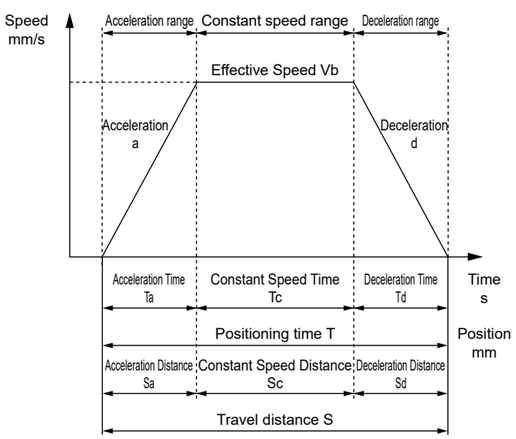
STEP1 Confirmation of Payload

The payload changes depending on the mounting orientation, screw lead, transport speed, acceleration/deceleration, and power supply voltage. Refer to the System Table (pages 104 to 107), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

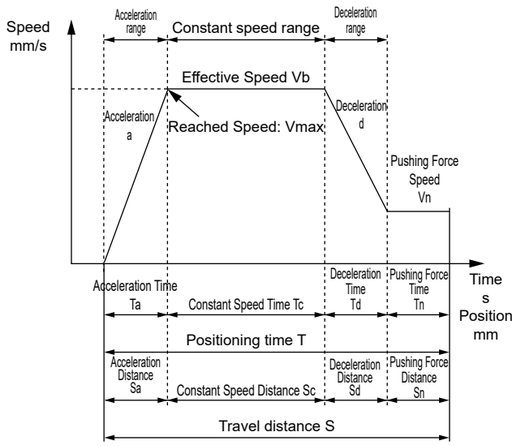
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times S/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	$=(d\times Td^2)/2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times(S-Sn+Vn^2/2/d)/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

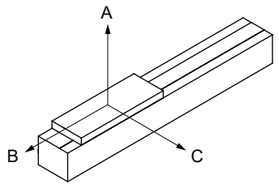
* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G≈ 9.8 m/s².

STEP3 Confirmation of Allowable Overhang Length

Make sure that the load overhang length during operation is within the allowable range (pages 140 to 142).
For details on selection, please contact our sales representative.

Allowable Overhang Length (EBS Series)

[Horizontal Installation]



[Allowable Overhang Length]

● EBS-04GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	6	7	450	590	105	135
			14	400	295	50	60
			20	400	185	30	40
		12	5	800	480	130	135
			10	600	290	65	75
			15	400	270	45	55
	1.0	6	8	450	210	90	100
			12	350	160	60	70
			16	100	85	60	50
		12	1	850	800	680	615
			3	600	485	240	250
			5	600	270	140	140

● EBS-05GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	2	15	130	1,000	100	140
			30	130	645	45	60
			45	130	400	25	35
		5	20	375	345	55	65
			30	350	220	30	40
			40	350	140	20	25
		10	6	700	745	180	195
			15	600	300	65	75
			27	400	215	35	40
		20	6	1,000	505	160	150
			13	600	355	80	90
			18	200	735	70	95
	0.7	2	15	100	950	105	145
			30	100	450	45	65
			45	100	280	25	35
	1.0	5	20	250	205	55	70
			30	200	160	35	45
			40	100	210	30	45
		10	6	600	370	190	185
			12	400	245	95	105
			22	100	425	65	95
		20	2	1,000	730	510	405
			4	800	430	270	230
			6	600	370	190	185

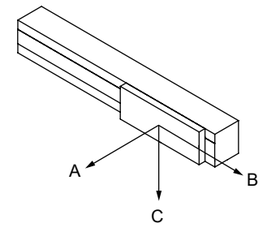
● EBS-08GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	5	40	200	1,000	95	155
			60	200	635	60	95
			80	200	450	40	65
		10	30	400	715	115	165
			50	300	515	65	100
			70	300	340	40	65
		20	10	600	1,000	345	460
			20	600	760	165	215
			30	400	715	115	165
	1.0	5	40	150	580	105	165
			60	100	485	70	115
			80	100	350	50	80
		10	30	200	595	135	205
			50	100	595	90	145
			70	100	45	45	25
		20	10	600	705	345	385
			20	400	480	180	235
			30	100	1,000	160	260

* Value when the actuator's running life is 5,000 km. (Screw lead = 2 mm is the value when the travel life is 1,000 km.)
* The load in the overhang direction is in a single direction only.
* Dimensions A, B, and C are from the center of the top surface of the table.
* Controller: For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Allowable Overhang Length (EBS Series)

[When Wall-Mounted]



[Allowable Overhang Length]

● EBS-04GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	6	7	450	100	75	495
			10	450	55	44	290
			14	400	25	20	180
		12	5	800	105	95	390
			10	600	40	35	190
			15	400	20	15	155
	1.0	6	8	450	70	60	175
			12	350	40	30	125
			16	100	35	30	60
		12	1	850	595	645	800
			3	600	225	210	455
			5	600	115	110	240

● EBS-05GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	2	10	130	170	120	1,000
			15	130	90	65	1,000
			20	130	50	35	840
		5	10	375	110	85	650
			15	375	50	40	355
			20	375	25	15	190
		10	6	700	160	140	630
			10	600	80	70	370
			15	600	35	30	170
		20	6	1,000	115	115	390
			13	600	50	40	235
			18	200	50	35	580
	0.7	2	15	100	100	70	905
			20	100	60	40	630
			25	100	35	25	450
	1.0	5	10	300	110	90	360
			15	250	60	45	250
			20	250	30	20	150
		10	6	600	155	150	335
			12	400	70	60	205
			22	100	45	35	430
		20	2	1,000	380	465	700
			4	800	205	225	400
			6	600	155	150	335

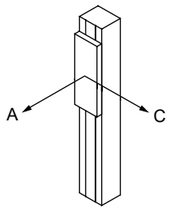
● EBS-08GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	B	C
Straight	0.3	5	20	200	285	175	1,000
			40	200	105	65	880
			60	200	45	25	480
		10	30	400	120	80	600
			40	350	80	50	460
			50	300	55	35	380
		20	10	600	420	310	1,000
			20	600	175	130	655
			30	400	120	80	600
	1.0	5	40	150	120	75	535
			60	100	65	40	485
			80	100	30	20	305
		10	20	200	275	175	890
			30	200	160	100	555
			40	200	100	65	385
		20	10	600	355	310	670
			20	400	195	145	445
			30	100	210	125	1,000

* Value when the actuator's running life is 5,000 km. (Screw lead = 2 mm is the value when the travel life is 1,000 km.)
* The load in the overhang direction is in a single direction only.
* Dimensions A, B, and C are from the center of the top surface of the table.
* Controller: For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Allowable Overhang Length (EBS Series)

[Vertical Installation]



[Allowable Overhang Length]

● EBS-04GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	Overhang (mm) C
Straight	0.3	6	2	350	370	360
			5	300	125	125
			9	200	60	60
		12	1	600	690	635
			2	600	325	300
			3	500	215	200
	0.5	6	2	300	380	370
			5	250	130	130
			9	200	60	60
		12	1	400	760	730
			2	300	380	370
			3	300	240	235

● EBS-05GE

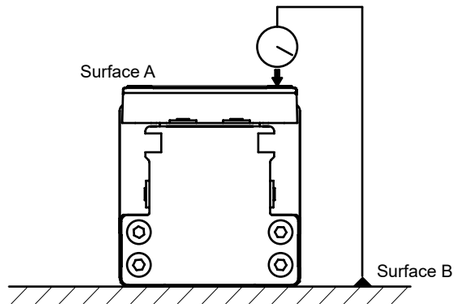
Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	Overhang (mm) C
Straight	0.3	2	6	100	240	240
			12	100	95	95
			18	75	50	50
		5	6	300	175	170
			10	250	90	90
			14	100	75	75
		10	2	500	565	535
			4	400	275	265
			7	300	145	140
		20	0.5	900	1,000	1,000
			1	700	1,000	960
			2	400	600	575
	0.5	2	6	100	240	240
			12	75	100	100
			18	75	50	50
		5	6	300	175	170
			10	250	90	80
			14	100	70	70
		10	2	400	590	570
			4	300	290	280
			7	300	140	140
		20	0.5	900	1,000	1,000
			1	700	1,000	940
			2	400	590	570

● EBS-08GE

Motor Mounting	Acceleration/ Deceleration (G)	Screw Lead (mm)	Payload (kg)	Max. Speed (mm/s)	Overhang (mm) A	Overhang (mm) C
Straight	0.3	5	16	150	250	240
			24	50	180	180
			43	50	80	80
		10	12	200	320	310
			20	100	210	200
			28	50	150	150
		20	1	600	1,000	1,000
			2	600	1,000	1,000
			3	400	1,000	1,000
	0.5	5	16	150	240	240
			24	50	185	185
			43	50	80	80
		10	12	200	320	310
			20	50	230	230
			28	50	150	150
		20	1	600	1,000	1,000
			2	400	1,000	1,000
			3	400	1,000	1,000

* Value when the actuator's running life is 5,000 km. (Screw lead = 2 mm is the value when the travel life is 1,000 km.)
* The load in the overhang direction is in a single direction only.
* Dimensions A and C are from the center of the top surface of the table.
* Controller: For ECMG, Stroke: 350 mm, the value is the maximum speed for each payload.
* The value may differ depending on the motor mounting direction.
* For acceleration/deceleration and payload, please refer to the payload table by speed and acceleration/deceleration (specifications P. for each model).

Slider Parallelism *Reference Value

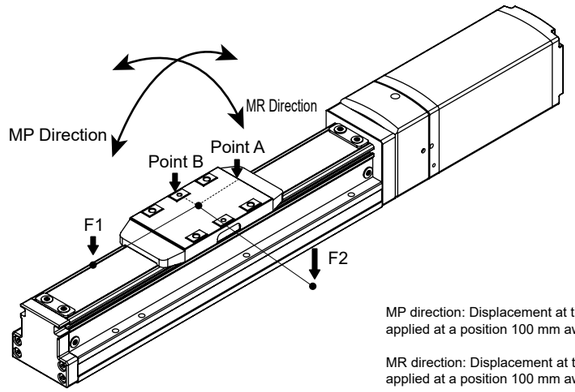


(mm)

	Parallelism: Surface A with respect to Surface B
EBS-04 Series	0.03
EBS-05 Series	
EBS-08 Series	

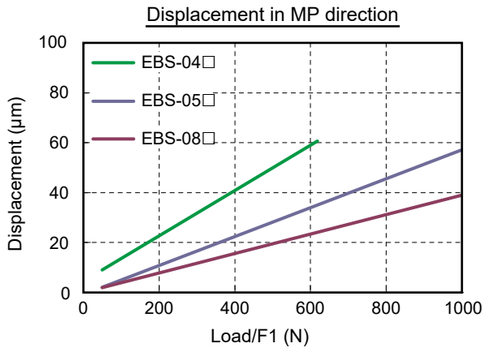
* This is the parallelism when the product is fixed to a surface plate.

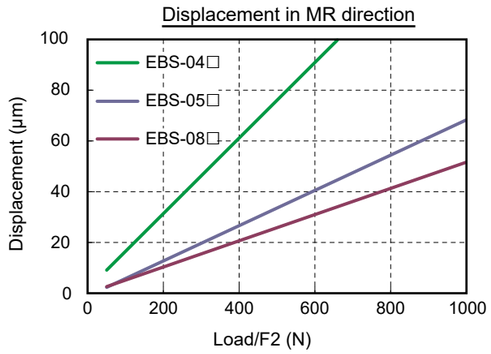
Table Displacement *Reference Value



MP direction: Displacement at the table end (point A) when a load (F1) is applied at a position 100 mm away from the table center

MR direction: Displacement at the table end (point B) when a load (F2) is applied at a position 100 mm away from the table center





Payload table by speed and acceleration/deceleration

48 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBS-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	16.6		16.6		16.6		16.6	
15	16.6	13.3	16.6	13.3	16.6	11.6	16.6	8.3
50	16.6	13.3	16.6	13.3	16.6	11.6	16.6	8.3
100	16.6	13.3	16.6	13.3	16.6	11.6	15.0	8.3
150	16.6	13.3	16.6	13.3	16.6	11.6	10.0	8.3
200	16.6	13.3	16.6	13.3	16.6	11.6	1.6	8.3
250	16.6	13.3	16.6	13.3	8.3	11.6	1.6	8.3
300	13.3	13.3	6.6	13.3	1.6	11.6		8.3
350	8.3	13.3	0.8	13.3		10.0		8.3
400	3.3	13.3		13.3		10.0		8.3
500		6.6		6.6		5.0		3.3
600		5.0		2.5		2.5		2.5
700		1.6		1.6		1.6		0.8
800		0.8						

■ EBS-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20	0.7 2	5	10	20	1.0 5	10	20
2	45.0				45.0				45.0						
6	45.0	40.0			45.0	40.0			45.0	40.0			40.0		
12	45.0	40.0	35.0		45.0	40.0	35.0		45.0	40.0	31.6		40.0	16.6	
25	45.0	40.0	35.0	16.6	45.0	40.0	35.0	16.6	45.0	40.0	31.6	16.6	40.0	16.6	10.0
50	45.0	40.0	35.0	16.6	45.0	40.0	35.0	16.6	45.0	40.0	31.6	16.6	40.0	16.6	10.0
60	45.0	40.0	35.0	16.6	45.0	40.0	35.0	16.6	13.3	40.0	31.6	16.6	40.0	16.6	10.0
70	45.0	40.0	35.0	16.6	20.0	40.0	35.0	16.6	13.3	40.0	31.6	16.6	40.0	16.6	10.0
100	45.0	40.0	35.0	16.6		40.0	35.0	16.6		40.0	31.6	16.6	40.0	16.6	10.0
110	26.6	40.0	35.0	16.6		35.0	35.0	16.6		35.0	30.0	16.6	35.0	16.6	10.0
120	18.3	40.0	35.0	16.6		35.0	35.0	16.6		35.0	30.0	16.6	35.0	16.6	10.0
150	10.0	40.0	35.0	16.6		35.0	35.0	16.6		35.0	30.0	16.6	35.0	16.6	10.0
200		40.0	35.0	16.6		28.3	35.0	16.6		18.3	30.0	16.6	18.3	16.6	10.0
250		40.0	35.0	16.6		20.0	31.6	16.6		11.6	26.6	16.6	10.0	10.0	10.0
300		26.6	35.0	16.6		15.0	23.3	16.6		6.6	18.3	16.6		8.3	10.0
400			25.0	16.6			20.0	16.6			11.6	15.0		8.3	6.6
500			21.6	16.6			15.0	16.6			10.0	13.3		5.0	3.3
600			16.6	16.6			11.6	16.6			6.6	10.0			3.3
650			10.0	15.0			6.6	11.6			3.3	8.3			3.3
700			0.8	15.0				11.6				8.3			3.3
800				10.0				10.0				6.6			1.6
900				6.6				6.6				5.0			1.6
1100				3.3				3.3				3.3			

■ EBS-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	80.0	70.0	18.3
50	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	80.0	70.0	18.3
60	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	38.3	51.6	18.3
70	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	21.6	51.6	18.3
75	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	15.0	51.6	18.3
100	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	30.0	6.6	51.6	18.3
125	80.0	70.0	43.3	58.3	70.0	33.3	46.6	51.6	30.0	6.6	51.6	18.3
150	70.0	70.0	43.3	35.0	70.0	33.3	20.0	51.6	30.0	3.3	51.6	18.3
175	70.0	70.0	43.3	16.6	62.5	33.3		38.3	30.0		18.3	18.3
200	18.3	70.0	43.3	5.0	62.5	33.3		38.3	30.0		18.3	18.3
250	3.3	68.3	36.6		41.6	33.3		21.6	26.6		5.0	18.3
300		41.6	36.6		26.6	33.3		15.0	26.6			18.3
350		36.6	26.6		20.0	23.3		5.8	16.6			8.3
400		33.3	26.6		10.0	23.3		1.6	16.6			8.3
450		25.0	21.6		6.6	20.0			11.6			3.3
500		6.6	21.6		0.8	20.0			11.6			3.3
550		3.3	18.3			16.6			10.0			1.6
600			18.3			16.6			10.0			1.6
700			16.6			15.0			8.3			0.8
800			10.0			10.0			8.3			
900			6.6			6.6			5.0			
1,000			3.3			3.3			1.6			
1100			3.3			3.3			0.8			

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBS-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	16.6		16.6		16.6		16.6	
15	16.6	13.3	16.6	13.3	16.6	11.6	16.6	8.3
100	16.6	13.3	16.6	13.3	16.6	11.6	16.6	8.3
150	16.6	13.3	16.6	13.3	16.6	11.6	13.3	8.3
200	16.6	13.3	16.6	13.3	16.6	11.6	8.3	8.3
250	16.6	13.3	16.6	13.3	8.3	11.6	1.6	8.3
300	13.3	13.3	6.6	13.3	1.6	11.6		8.3
350	8.3	13.3	0.8	13.3		10.0		8.3
400	6.6	13.3		13.3		10.0		8.3
500		6.6		6.6		5.0		3.3
600		2.5		2.5		2.5		2.5
700		1.6		1.6		1.6		0.8

■ EBS-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20	0.7 2	5	10	20	1.0 5	10	20
2	45.0				45.0				45.0						
6	45.0	40.0			45.0	40.0			45.0	40.0			40.0		
12	45.0	40.0	35.0		45.0	40.0	35.0		45.0	40.0	31.6		40.0	16.6	
25	45.0	40.0	35.0	16.6	45.0	40.0	35.0	16.6	45.0	40.0	31.6	13.3	40.0	16.6	10.0
50	45.0	40.0	35.0	16.6	45.0	40.0	35.0	16.6	45.0	40.0	31.6	13.3	40.0	16.6	10.0
60	45.0	40.0	35.0	16.6	26.6	40.0	35.0	16.6	13.3	40.0	30.0	13.3	40.0	16.6	10.0
70	45.0	40.0	35.0	16.6		40.0	35.0	16.6	13.3	40.0	30.0	13.3	40.0	16.6	10.0
100	45.0	40.0	35.0	16.6		40.0	35.0	16.6		40.0	30.0	13.3	40.0	16.6	10.0
110	26.6	40.0	35.0	16.6		31.6	35.0	16.6		23.3	25.0	13.3	18.3	16.6	8.3
120	18.3	40.0	35.0	16.6		31.6	35.0	16.6		23.3	25.0	13.3	18.3	16.6	8.3
150	10.0	40.0	35.0	16.6		31.6	35.0	16.6		23.3	25.0	13.3	18.3	16.6	8.3
200		40.0	35.0	16.6		23.3	35.0	16.6		15.0	25.0	13.3	8.3	16.6	8.3
250		40.0	35.0	16.6		16.6	26.6	16.6		8.3	20.0	13.3	8.3	10.0	8.3
300		23.3	35.0	16.6		6.6	20.0	16.6			15.0	13.3		8.3	8.3
400			25.0	16.6			15.0	16.6			8.3	11.6		6.6	6.6
500			21.6	16.6			11.6	16.6			6.6	10.0		1.6	3.3
600			8.3	16.6			3.3	13.3			1.6	8.3			3.3
700				15.0				8.3				6.6			3.3
800				10.0				8.3				5.0			1.6
900				6.6				6.6				5.0			1.6
1,000				3.3				3.3				3.3			1.6
1100				3.3				3.3				1.6			

■ EBS-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	70.0	
25	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	80.0	70.0	18.3
50	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	80.0	70.0	18.3
60	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	38.3	70.0	18.3
70	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	21.6	70.0	18.3
75	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	15.0	70.0	18.3
80	80.0	70.0	43.3	80.0	70.0	33.3	80.0	70.0	26.6	6.6	70.0	18.3
100	80.0	70.0	43.3	76.0	70.0	33.3	55.0	70.0	26.6		70.0	18.3
125	80.0	70.0	43.3	35.0	70.0	33.3	18.0	51.6	26.6		43.3	18.3
150	46.6	70.0	43.3	33.3	70.0	33.3		51.6	26.6		43.3	18.3
175	46.6	70.0	43.3	3.3	46.6	33.3		38.3	26.6		18.3	18.3
200	18.3	70.0	43.3		46.6	33.3		38.3	26.6		18.3	18.3
225	3.3	68.3	36.6		26.6	33.3		18.3	26.6		4.1	18.3
250		68.3	36.6		26.6	33.3		18.3	26.6		4.1	18.3
300		68.3	36.6		16.6	33.3		8.3	26.6			18.3
350		48.3	26.6		13.3	21.6		5.0	15.0			8.3
400		35.0	26.6		10.0	21.6		1.6	15.0			8.3
450		16.6	21.6		6.6	16.6			8.3			3.3
500		5.0	21.6		0.8	16.6			8.3			3.3
550		5.0	20.0			11.6			5.0			1.6
600			20.0			11.6			5.0			1.6
700			20.0			10.0			5.0			1.6
800			18.3			8.3			3.3			
900			10.0			3.3			0.8			
1,000			1.6									

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBS-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	8.3		8.3	
15	8.3	3.3	8.3	3.3
100	8.3	3.3	8.3	3.3
150	5.0	3.3	6.6	3.3
200	5.0	3.3	5.0	3.3
250	5.0	3.3	3.3	3.3
300	3.3	3.3	1.6	3.3
350	1.6	3.3	0.4	2.5
400	0.4	3.3		2.5
500		2.5		1.6

■ EBS-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	10	20
2	24.0				24.0			
6	24.0	16.6			24.0	16.6		
12	24.0	16.6	8.3		24.0	16.6	8.3	
20	24.0	16.6	8.3		24.0	16.6	8.3	
25	24.0	16.6	8.3	4.5	24.0	16.6	8.3	4.5
50	24.0	16.6	8.3	4.5	24.0	16.6	8.3	4.5
60	24.0	15.0	8.3	4.5	18.3	15.0	8.3	4.5
70	24.0	15.0	8.3	4.5	13.3	15.0	8.3	4.5
90	18.3	15.0	8.3	4.5	6.6	15.0	8.3	4.5
100	18.3	15.0	8.3	4.5	6.6	15.0	8.3	4.5
110	18.3	11.6	6.6	4.1		11.6	6.6	4.1
120	6.6	11.6	6.6	4.1		11.6	6.6	4.1
130	1.6	11.6	6.6	4.1		11.6	6.6	4.1
150		11.6	6.6	4.1		11.6	6.6	4.1
200		10.0	6.6	4.1		10.0	6.6	4.1
250		10.0	5.0	4.1		10.0	5.0	4.1
300		5.0	5.0	4.1		3.3	5.0	4.1
450			5.0	3.3			3.3	3.3
500			5.0	3.3				3.3
600			1.6	3.3				3.3
700				2.9				2.9
1100				2.5				2.0

■ EBS-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	40.0			35.0		
12	40.0	18.3		35.0	18.3	
25	40.0	18.3	10.0	35.0	18.3	8.3
50	40.0	18.3	10.0	35.0	18.3	8.3
75	30.0	18.3	10.0	31.6	18.3	8.3
100	25.0	18.3	10.0	25.0	18.3	8.3
125	23.3	18.3	10.0	25.0	11.6	8.3
150	23.3	18.3	10.0	11.6	11.6	8.3
175	18.3	18.3	10.0	5.0	11.6	8.3
200	11.6	18.3	10.0		11.6	8.3
225	5.0	10.0	8.3		10.0	6.6
250	3.3	10.0	8.3		10.0	6.6
300		10.0	8.3		10.0	6.6
400		5.0	6.6		1.6	5.0
500		1.6	6.6		1.6	5.0
600			5.0			3.3
700			3.3			3.3
800			3.3			1.6
900			1.6			1.6

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBS-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	8.3		8.3	
15	8.3	3.3	8.3	3.3
100	8.3	3.3	8.3	3.3
200	5.0	3.3	5.0	3.3
250	2.5	3.3	1.6	3.3
300	1.6	3.3	0.4	3.3
350	1.6	3.3	0.4	2.5
400		3.3		2.5
500		0.8		0.4
600		0.8		0.4

■ EBS-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	10	20
2	24.0				24.0			
6	24.0	16.6			24.0	16.6		
12	24.0	16.6	8.3		24.0	16.6	8.3	
20	24.0	16.6	8.3		24.0	16.6	8.3	
25	24.0	16.6	8.3	4.5	24.0	16.6	8.3	4.5
50	24.0	16.6	8.3	4.5	24.0	16.6	8.3	4.5
60	24.0	15.0	8.3	4.5	18.3	15.0	8.3	4.5
70	11.6	15.0	8.3	4.5	8.3	15.0	8.3	4.5
80	1.6	15.0	8.3	4.5		15.0	8.3	4.5
100		15.0	8.3	4.5		15.0	8.3	4.5
150		11.6	6.6	4.5		11.6	6.6	4.5
200		10.0	6.6	4.5		10.0	6.6	4.5
250		10.0	5.0	4.5		5.0	5.0	4.5
300		3.3	5.0	4.5		3.3	5.0	4.5
400			5.0	4.5			3.3	4.5
450			3.3	4.5			3.3	4.1
500			3.3	4.5				4.1
600			0.4	4.1				3.3
700				3.3				2.9
800				3.3				2.0
900				1.6				2.0
1,000				1.6				1.6
1100				0.8				0.8

■ EBS-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	40.0			35.0		
12	40.0	18.3		35.0	18.3	
25	40.0	18.3	8.3	35.0	18.3	8.3
50	40.0	18.3	8.3	35.0	18.3	8.3
75	30.0	13.3	8.3	31.6	13.3	8.3
100	25.0	13.3	8.3	25.0	13.3	8.3
125	20.0	13.3	8.3	18.3	11.6	8.3
150	11.6	13.3	8.3	6.6	11.6	8.3
175	6.6	13.3	8.3	0.8	11.6	8.3
200	3.3	13.3	8.3		11.6	8.3
225	0.8	10.0	8.3		10.0	6.6
250		10.0	8.3		10.0	6.6
300		8.3	8.3		8.3	6.6
400		5.0	6.6		1.6	5.0
500		0.8	5.8			4.1
600			5.0			3.3
700			3.3			2.5
800			1.6			0.8
900			0.8			

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBS-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	16.6		16.6	
15	16.6	11.6	16.6	11.6
100	16.6	11.6	16.6	11.6
150	16.6	11.6	4.1	11.6
200	6.6	11.6		11.6
300		10.0		5.0
400		3.3		1.6
500		1.6		0.8
600		1.6		

■ EBS-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	0.7 Screw Lead (mm) 10	20
2	45.0				45.0			
6	45.0	40.0			45.0	40.0		
12	45.0	40.0	35.0		45.0	40.0	31.6	
25	45.0	40.0	35.0	16.6	45.0	40.0	31.6	16.6
40	45.0	40.0	35.0	16.6	45.0	40.0	31.6	16.6
50	45.0	40.0	35.0	16.6		40.0	31.6	16.6
60	35.0	40.0	35.0	16.6		23.3	31.6	16.6
70	2.5	40.0	35.0	16.6		23.3	31.6	16.6
100		40.0	35.0	16.6		23.3	31.6	16.6
150		40.0	35.0	16.6		6.6	23.3	16.6
200		18.3	35.0	16.6			23.3	16.6
250		8.3	21.6	16.6			7.5	11.6
300			21.6	16.6			7.5	11.6
350			15.0	16.6			1.6	8.3
400			10.0	16.6				8.3
450			7.5	12.5				5.0
500			5.0	12.5				5.0
550			5.0	8.3				2.5
600			0.8	8.3				2.5
700				4.1				0.8
800				2.5				
900				0.8				

■ EBS-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	43.3	80.0	70.0	26.6
50	80.0	70.0	43.3	80.0	70.0	26.6
75	80.0	70.0	43.3	18.3	50.0	26.6
80	76.6	70.0	43.3		50.0	26.6
100	76.6	70.0	43.3		50.0	26.6
125	43.3	58.3	31.6		15.0	21.6
150	10.0	58.3	31.6		15.0	21.6
175		29.1	31.6			21.6
200		29.1	31.6			21.6
250		11.6	26.6			6.6
300		2.5	26.6			6.6
400			15.0			3.3
500			6.2			1.6
600			2.5			

Payload table by speed and acceleration/deceleration

24 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBS-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	16.6		16.6	
15	16.6	11.6	16.6	11.6
100	16.6	11.6	16.6	11.6
150	16.6	11.6	4.1	10.0
200	6.6	11.6		10.0
300		10.0		3.3
400		3.3		
500		1.6		
600		1.6		

■ EBS-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	0.7 Screw Lead (mm) 10	20
2	45.0				45.0			
6	45.0	40.0			45.0	40.0		
12	45.0	40.0	35.0		45.0	40.0	33.3	
25	45.0	40.0	35.0	16.6	45.0	40.0	26.6	11.6
40	45.0	40.0	35.0	16.6	45.0	40.0	26.6	11.6
50	45.0	40.0	35.0	16.6		40.0	26.6	11.6
60	35.0	40.0	35.0	16.6		23.3	26.6	11.6
70	2.5	40.0	35.0	16.6		23.3	26.6	11.6
100		40.0	35.0	16.6		23.3	26.6	11.6
150		20.0	35.0	16.6			10.0	11.6
200		5.0	35.0	16.6			10.0	11.6
250		5.0	18.3	16.6			0.8	6.6
300			18.3	16.6			0.8	6.6
350			13.3	13.3				3.3
400			6.6	13.3				3.3
450			3.3	8.3				1.6
500			3.3	8.3				1.6
600				6.6				0.8
700				4.1				
800				2.5				
900				0.8				

■ EBS-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	43.3	80.0	70.0	26.6
50	80.0	70.0	43.3	80.0	70.0	26.6
75	51.6	70.0	43.3	1.6	40.0	26.6
100	3.3	70.0	43.3		40.0	26.6
150		58.3	30.0		13.3	21.6
200		29.1	30.0			21.6
250		11.6	21.6			10.0
300		2.5	21.6			10.0
400			10.0			3.3
500			8.3			

Payload table by speed and acceleration/deceleration

24 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBS-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	6.6	
15	6.6	2.5
50	6.6	2.5
100	6.6	2.5
150	5.0	2.5
200	1.6	2.5
300		1.6
400		0.8

■ EBS-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	6.6	
15	6.6	2.5
50	6.0	2.5
100	6.6	2.5
150	3.3	2.5
200	1.6	2.5
300		0.8
400		0.8

■ EBS-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20
2	24.0			
6	24.0	16.6		
12	24.0	16.6	8.3	
20	24.0	16.6	8.3	
25	24.0	16.6	8.3	4.5
40	24.0	16.6	8.3	4.5
50	16.6	16.6	8.3	4.5
60	8.3	16.6	8.3	4.5
70	0.8	16.6	8.3	4.5
100		16.6	8.3	4.5
125		11.6	6.6	4.5
150		8.3	6.6	4.5
175		5.8	6.6	4.5
200		4.1	6.6	4.5
225		2.5	3.3	4.5
250		1.6	3.3	4.5
300			3.3	4.5
350			3.3	2.5
400			2.5	2.5
450			1.6	1.6
500			0.4	1.6
600				1.2
700				0.8
800				0.4

■ EBS-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20
2	24.0			
6	24.0	16.6		
12	24.0	16.6	8.3	
20	24.0	16.6	8.3	
25	24.0	16.6	8.3	4.5
40	24.0	16.6	8.3	4.5
50	16.6	16.6	8.3	4.5
60	8.3	16.6	8.3	4.5
70	0.8	16.6	8.3	4.5
100		16.6	8.3	4.5
125		11.6	5.0	4.5
150		8.3	5.0	4.5
175		5.8	5.0	4.5
200		4.1	5.0	4.5
225		2.5	2.5	4.1
300			2.5	4.1
350			1.6	2.5
400			0.8	2.5
700				0.8
800				0.4

■ EBS-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	38.3		
12	38.3	18.3	
25	38.3	18.3	10.0
50	36.6	18.3	10.0
75	18.3	18.3	10.0
100	4.1	18.3	10.0
150	4.1	8.3	10.0
200		5.8	10.0
250		2.5	5.8
300		0.8	5.8
400			3.3
500			1.6
600			0.8

■ EBS-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	36.6		
12	36.6	16.6	
25	36.6	16.6	8.3
50	36.6	16.6	8.3
75	18.3	13.3	8.3
100	4.1	13.3	8.3
150		6.6	8.3
200		5.0	8.3
250		2.5	5.0
300			5.0
400			2.5

Stroke and Max. Speed

■ 48 VDC (mm/s)

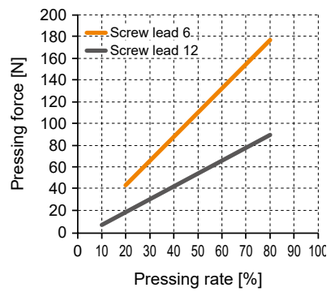
Model No.	Motor Mounting Direction	Screw Lead	Stroke 50 to 500	550	600	650	700	750	800	850	900	950	1,000	1050	1100
EBS-04ME	**Straight**	6	400												
		12	800												
EBS-04MR/D/L	**Reverse Parallel**	6	400												
		12	700												
EBS-05ME	**Straight**	2	130	120		105	95	80	70						
		5	300			270	235	200	185						
		10	700	625		540	475	415	370						
		20	1100			1080	950	830	740						
EBS-05MR/D/L	**Reverse Parallel**	2	130	120		105	95	80	70						
		5	300			270	235	200	185						
		10	600			540	475	415	370						
		20	1100			1080	950	830	740						
EBS-08ME	**Straight**	5	250						220	200	180	135	120	110	100
		10	550					510	450	410	370	270	240	225	200
		20	1100			1,000			910	820	740	540	490	450	410
EBS-08MR/D/L	**Reverse Parallel**	5	225						220	200	180	135	120	110	100
		10	550					510	450	410	370	270	240	225	200
		20	1,000						910	820	740	540	490	450	410

■ 24 VDC (mm/s)

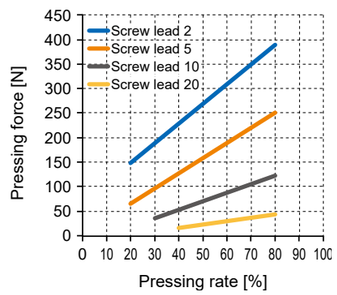
Model No.	Motor Mounting Direction	Screw Lead	Stroke 50 to 500	550	600	650	700	750	800	850	900	950	1,000	1050	1100
EBS-04ME	**Straight**	6	200												
		12	600												
EBS-04MR/D/L	**Reverse Parallel**	6	200												
		12	500												
EBS-05ME	**Straight**	2	70												
		5	250				235	200	185						
		10	600			540	475	415	370						
		20	900					830	740						
EBS-05MR/D/L	**Reverse Parallel**	2	70												
		5	250				235	200	185						
		10	500				475	415	370						
		20	900					830	740						
EBS-08ME	**Straight**	5	150									135	120	110	100
		10	300									270	240	225	200
		20	600									540	490	450	410
EBS-08MR/D/L	**Reverse Parallel**	5	100												
		10	300									270	240	225	200
		20	500										490	450	410

Pushing Force

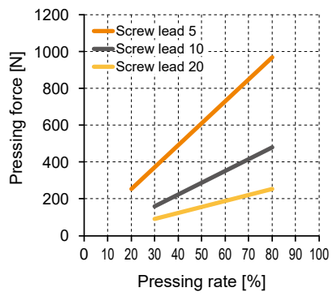
[EBS-04M (Connected Controller ECR)]



[EBS-05M (Connected Controller ECR)]



[EBS-08M (Connected Controller ECR)]



Maintenance Parts (ECMG/ECG Motor Unit)

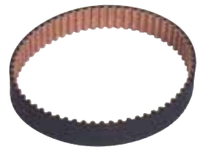
		Model No.	Applicable Models
Without Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-NB	EBS-04GE
		EJSG-04R-MOTORUNIT-NB	EBS-04GR/D/L
		EJSG-05E-MOTORUNIT-NB	EBS-05GE
		EJSG-05R-MOTORUNIT-NB	EBS-05GR/D/L
		EJSG-08E-MOTORUNIT-NB	EBS-08GE
		EJSG-08R-MOTORUNIT-NB	EBS-08GR/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-NC	EBS-04GE
		EJSG-04R-MOTORUNIT-NC	EBS-04GR/D/L
		EJSG-05E-MOTORUNIT-NC	EBS-05GE
		EJSG-05R-MOTORUNIT-NC	EBS-05GR/D/L
		EJSG-08E-MOTORUNIT-NC	EBS-08GE
		EJSG-08R-MOTORUNIT-NC	EBS-08GR/D/L
With Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-BB	EBS-04GE
		EJSG-04R-MOTORUNIT-BB	EBS-04GR/D/L
		EJSG-05E-MOTORUNIT-BB	EBS-05GE
		EJSG-05R-MOTORUNIT-BB	EBS-05GR/D/L
		EJSG-08E-MOTORUNIT-BB	EBS-08GE
		EJSG-08R-MOTORUNIT-BB	EBS-08GR/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-BC	EBS-04GE
		EJSG-04R-MOTORUNIT-BC	EBS-04GR/D/L
		EJSG-05E-MOTORUNIT-BC	EBS-05GE
		EJSG-05R-MOTORUNIT-BC	EBS-05GR/D/L
		EJSG-08E-MOTORUNIT-BC	EBS-08GE
		EJSG-08R-MOTORUNIT-BC	EBS-08GR/D/L

Maintenance Parts (ECR Motor Unit)

	Model No.	Applicable Models	
Without Brake	EBS-04ME-MOTORUNIT-N	EBS-04ME	Without Brake
	EBS-04MR-MOTORUNIT-N	EBS-04MR/D/L	
	EBS-05ME-MOTORUNIT-N	EBS-05ME	
	EBS-05MR-MOTORUNIT-N	EBS-05MR/D/L	
	EBS-08ME-MOTORUNIT-N	EBS-08ME	
	EBS-08MR-MOTORUNIT-N	EBS-08MR/D/L	
With Brake	EBS-04ME-MOTORUNIT-B	EBS-04ME	With Brake
	EBS-04MR-MOTORUNIT-B	EBS-04MR/D/L	
	EBS-05ME-MOTORUNIT-B	EBS-05ME	
	EBS-05MR-MOTORUNIT-B	EBS-05MR/D/L	
	EBS-08ME-MOTORUNIT-B	EBS-08ME	
	EBS-08MR-MOTORUNIT-B	EBS-08MR/D/L	

Maintenance Parts

Maintenance Parts / Motor Mounting Direction: For right, bottom, and left folded-back type (Timing Belt)

Model No.	Applicable Models
	
EBS-04MR-BELT	EBS-04□R/D/L
EBS-05MR-BELT	EBS-05□R/D/L
EBS-08MR-BELT	EBS-08□R/D/L

Maintenance Parts (Grease Nozzle)

Model No.	Applicable Models
EBS-NOZZLE	All models

Maintenance Parts (Steel Belt)

Model No.	Applicable Models
EBS-04-STEELBELT (4-digit stroke code)	EBS-04 (corresponding stroke product)
EBS-05-STEELBELT (4-digit stroke code)	EBS-05 (corresponding stroke product)
EBS-08-STEELBELT (4-digit stroke code)	EBS-08 (corresponding stroke product)

To Use This Product Safely

Be sure to read this before use.
For general information on electric actuators, please see Intro 17.

Individual Precautions: Electric Actuator EBS Series

During Design and Selection

⚠ Danger

■ Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■ Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■ When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

⚠ Warning

■ Use the product within its specific specification range.

■ Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■ In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■ Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 80% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■ The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ If using the actuator in an installation other than horizontal/wall-mounted, select the one with a brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■ The brake cannot completely hold the actuator in all cases. When performing maintenance on applications that move the slider with an unbalanced load, or when stopping the machine for a long time, if safety needs to be ensured, be sure to bring it to a balanced state or provide a mechanical locking mechanism.

■ When using the actuator in a vertical installation, position the motor as high as possible.
If the motor is on the lower side, there is no problem in normal operation, but if it is stopped for a long period of time, the grease may separate and flow into the motor, which may cause a malfunction in rare cases.

■ Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C (10°C to 40°C for EBS-G and EBR-G), Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■ Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Do not use in places with impact or vibration.

■ Do not apply a load to the product that exceeds the allowable value in the selection data.

⚠ Caution

■ Please use within a range where the moving table does not collide at the stroke end.

■ Clearly state the maintenance conditions in the equipment's instruction manual.
Depending on the usage status, usage environment, and maintenance, the functions of this product may be significantly degraded, and safety may not be ensured. If maintenance is performed correctly, the product functions can be fully demonstrated.

■ The product is manufactured in accordance with various standards. Never disassemble or modify.

■ Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■ Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■ Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
[In case of ECMG Series]
(□35...12.4 A/unit, □42...12.2 A/unit, □56...12.5 A/unit)
[In case of ECG Series]
(□35...2.4 A/unit, □42...2.7 A/unit, □56...4.0 A/unit)
[In case of ECR Series]
(□35...4.0 A/unit, □42...5.2 A/unit, □56...8.6 A/unit)

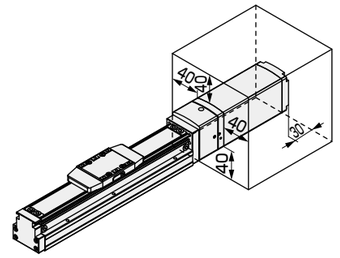
■ Fixed cables cannot be used for applications involving repeated bending, so please fix them so that they do not move easily. For use in locations involving repeated bending, please use a flexible cable.

■ Please use the fixed/flexible cable with a bending radius of 51 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ When the power is turned on, to recognize the home position, if there is an external stopper or holding mechanism (brake, etc.), there is a possibility that an unintended position will be recognized as the home position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ When using the EBS-G series, do not apply a magnetic field with a magnetic flux density of 0.7 mT or more to the product surface of the motor section.
This can cause damage to the product or malfunction.

■ When using multiple EBS-G series units, please install them with the motor parts separated by the distance shown in the figure below or more.
Installation at close intervals can cause malfunction.



■ When transporting or installing the actuator, hold the main body and avoid applying excessive force to the motor part.

■ Please confirm that there is no interference between the workpiece attached to the slider and the motor part.
Some types have a motor part dimension that is larger than the slider mounting surface height.
(EBS-08□E, EBS-08□R, EBS-08□L)

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual .

EBS Model Selection Checklist → **for CKD**(Contact)

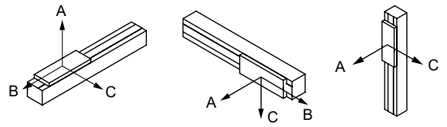
Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	EBS-	
Basic Specifications	Max. Stroke: mm, Ball screw lead: mm	
Operating Conditions	Moving stroke: mm, travel time: s	
	Set Speed: mm/s	
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)	
	Repeatability: ± mm	
Load Conditions	Slider Type	
	Payload: kg	
	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other  	
	Distance from slider center to load's center of gravity	
	Direction A: mm Direction B: mm Direction C: mm	
	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to the slider center ( )	
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %	
	Atmosphere:	
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP	
Special Notes		

Slider Type
EJSG
EBS
Ending

Electric Actuator with Motor Specification

EBR-G/M

Rod type with built-in guide

CONTENTS

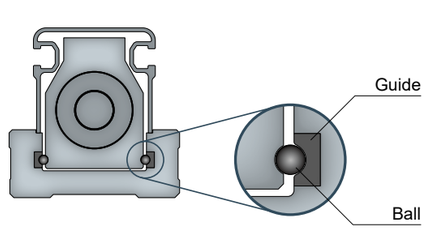
Product Introduction 160
System Table 162
●Specifications, Model No. Notation, External Dimension Drawings
· EBR-04□ 166
· EBR-05□ 176
· EBR-08□ 186
●Model Selection 196
●Technical Data 198
⚠ Precautions for Use 212
Model Selection Check Sheet 214

EBR-G/M Series

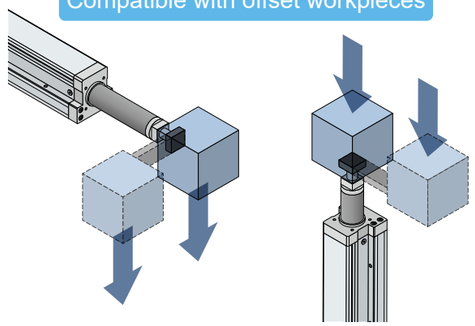
Built-in Guide Type

High rigidity | Space saving | Reduced design | Reduced parts | Reduced man-hours

It has the same built-in guide as the slider type EBS. It has a strong structure even for offset workpieces.



Compatible with offset workpieces

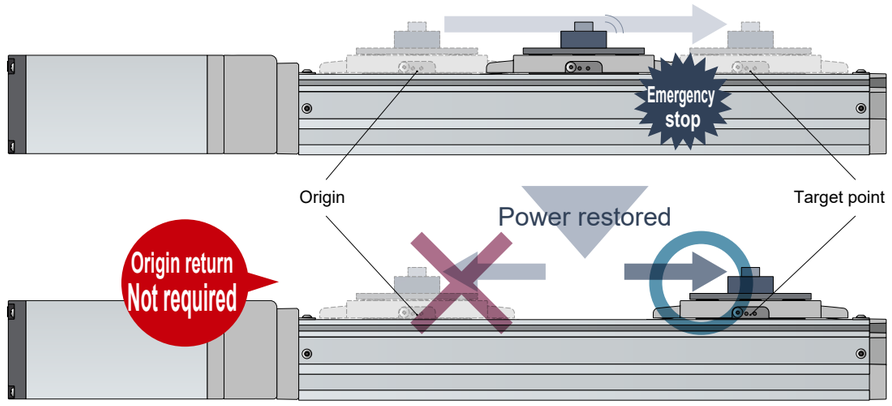


Battery-less Absolute Encoder

Easy maintenance | Reduced parts

Equipped with an absolute encoder that retains current position information. Because it is a battery-less specification, battery replacement maintenance is not required.

* Option for all series



Built-in guide makes it ideal for press-fitting and lifting

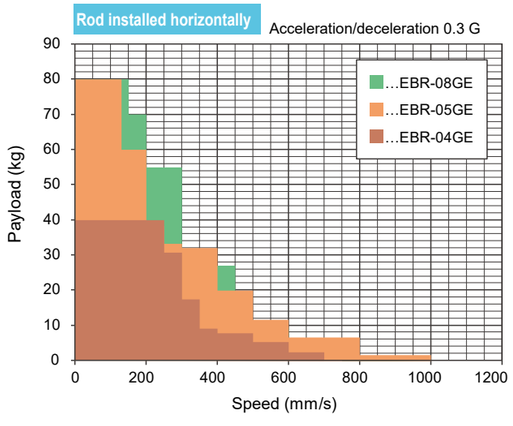
Line-up		Size 04	Size 05	Size 08	Catalog page
Actuator	Guide integrated Rod EBR-G/M	●	●	●	162
Application Controller	ECMG	●	●	●	535
	ECG-A *1	●	●	●	565
	ECR *2	●	●	●	595

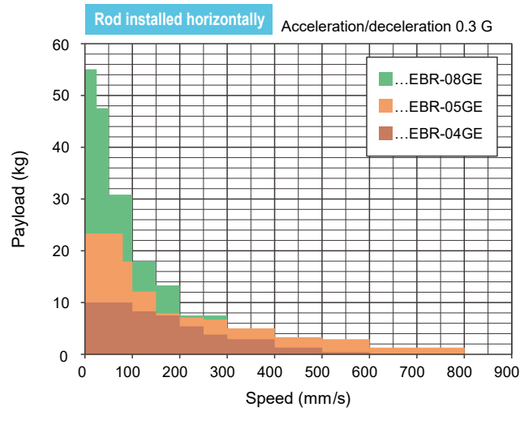
*1. EBR-P4 (for rechargeable battery manufacturing processes) can be connected to only Controllers ECG-A.
*2. EBS/EBR-FPI (for food production processes) can only be connected to the ECR controller.

System Table

Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	Page
ECMG Series		EBR-04GE-06	□35	Straight	44	6	40.0	10.0	155	400 mm/s				300		250								166
		EBR-04GE-12				12	12.5	2.9	77	700				600		430								
		EBR-04GR/D/L-06		Reverse Parallel		6	40.0	10.0	155	350				300		250								170
		EBR-04GR/D/L-12				12	12.5	2.9	77	600						490								
		EBR-05GE-02	□42	Straight	54	2	80.0	23.3	550	130						85								176
		EBR-05GE-05				5	60.0	14.2	220	375				330		210								
		EBR-05GE-10				10	41.7	7.1	110	750				650		420								
		EBR-05GE-20				20	11.7	2.9	55	1,000				800										
		EBR-05GR/D/L-02		Reverse Parallel		2	80.0	23.3	550	130						85								180
		EBR-05GR/D/L-05				5	60.0	14.2	220	375				330		210								
		EBR-05GR/D/L-10				10	38.3	6.7	110	650						420								
		EBR-05GR/D/L-20				20	11.7	1.7	55	1,000				800										
		EBR-08GE-05	□56	Straight	82	5	80.0	55.0	965	250				230				200						
		EBR-08GE-10				10	70.0	23.3	482	470				450				400						186
		EBR-08GE-20				20	35.0	10.0	241	750				600										
		EBR-08GR/D/L-05		Reverse Parallel		5	80.0	55.0	965	230						200								190
		EBR-08GR/D/L-10				10	70.0	23.3	482	450						400								
		EBR-08GR/D/L-20				20	35.0	10.0	241	750				600										

* This data is for an acceleration/deceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.



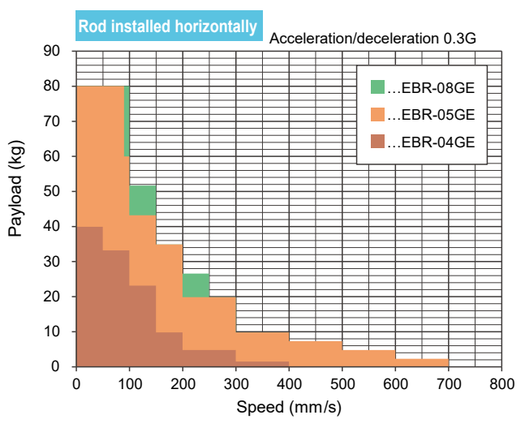


System Table

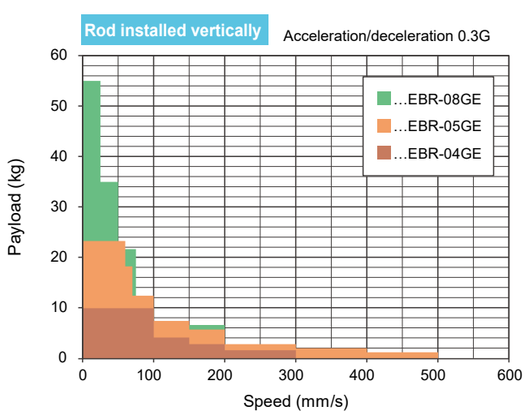
Controller	Actuator Model No.		Motor Size	Motor Mounting Direction	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical	Max. Pushing Force (N)	Stroke (mm) and Max. Speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	Page
ECG Series		EBR-04GE-06	□35	Straight	44	6	40.0	10.0	155	200 mm/s														166
		EBR-04GE-12				12	12.5	2.9	77	400														
		EBR-04GR/D/L-06		Reverse Parallel		6	40.0	8.3	155	200														170
		EBR-04GR/D/L-12				12	12.5	2.9	77	350														
		EBR-05GE-02	□42	Straight	54	2	80.0	23.3	550	90					85									176
		EBR-05GE-05				5	60.0	14.0	220	300					210									
		EBR-05GE-10				10	41.7	7.0	110	500					420									
		EBR-05GE-20				20	11.7	2.9	55	700														
		EBR-05GR/D/L-02		Reverse Parallel		2	80.0	23.3	550	90					85									180
		EBR-05GR/D/L-05				5	60.0	14.0	220	250					210									
		EBR-05GR/D/L-10				10	38.3	6.7	110	400														
		EBR-05GR/D/L-20				20	11.7	1.7	55	600														
		EBR-08GE-05	□56	Straight	82	5	80.0	55.0	965	125														186
		EBR-08GE-10				10	70.0	23.3	482	300														
		EBR-08GE-20				20	35.0	10.0	241	500														
		EBR-08GR/D/L-05		Reverse Parallel		5	80.0	55.0	965	125														190
		EBR-08GR/D/L-10				10	70.0	20.0	482	250														
		EBR-08GR/D/L-20				20	35.0	8.3	241	400														

* This data is for an acceleration/deceleration of 0.3 G.
* For wall mounting, the payload is the same as for horizontal installation.

Rod installed horizontally



Rod installed vertically



Electric Actuator Guided Rod Type

EBR-04□E

Inline Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 04 M E - 0 - 06 300 N A N - C S03

❶Body Size

04	Body width 44 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction

E	Inline Mount

❹Mounting Type

00	Basic type
FA	Rod side flange type

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke

0050 to 0400	50 mm (every 50 mm) 400 mm

❼Brake *2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and P. 576 for ECMG/ECG.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG		ECR	
Motor		□35 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				Battery-less Absolute Encoder	
Drive Method		Ball screw ø10					
Stroke mm		50 to 400					
Screw lead mm		6	12	6	12	6	12
Max. Payload kg *1*2	Horizontal	40.0	12.5	40.0	12.5	33.3 (33.3)	18.3 (18.3)
	Vertical	10.0	2.9	10.0	2.9	9.1 (10.0)	4.5 (5.0)
Operating Speed Range *1*3 mm/s		7 to 400	15 to 700	7 to 200	15 to 400	7 to 250 (350)	15 to 500 (600)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0		0.7		0.7 (1.0)	
	Vertical	0.5		0.3		0.3 (0.5)	
Max. Pushing Force N		155	77	155	77	131	69
Pushing Operation Speed Range mm/s		5 to 20		5 to 20		5 to 20	5 to 30
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Motor Power Supply Voltage		24 VDC ±10%				24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1				7	
	Holding Force N	140	70	140	70	126	63
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)				0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP40					

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. Refer to the following page (ECMG, ECG) or P. 202 (ECR) for details.
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-04G (Connected Controller: ECMG)]

(mm/s)

Screw Lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 200	250	300	350	400
6	24 VDC	400	300	250		
12	24 VDC	700	600	490		

[EBR-04G (Connected Controller: ECG)]

(mm/s)

Screw Lead (mm)	Power supply voltage	Stroke (mm)
		50 to 400
6	24 VDC	200
12	24 VDC	400

* For EBR-04M (connected controller ECR), please refer to P. 209.

Speed and Payload

[EBR-04G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	1.0 Screw Lead (mm) 6	12
7	40.0		30.0	
15	40.0	12.5	30.0	9.6
100	40.0	12.5	30.0	9.6
150	40.0	12.5	16.7	7.1
200	40.0	12.5	12.5	7.1
250	40.0	9.2	12.5	5.4
300	30.8	9.2	12.5	5.4
350	17.5	9.2	12.1	5.4
400	2.5	9.2	2.5	5.4
500		7.9		2.5
600		5.4		
700		2.5		

[Vertical Installation]

■ EBR-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	10.0		10.0	
15	10.0	2.9	10.0	2.9
100	10.0	2.9	10.0	2.9
150	8.3	2.9	8.3	2.9
200	7.5	2.9	7.5	2.9
250	5.4	2.9	5.0	2.9
300	3.8	2.9	2.5	2.9
350	1.7	2.9	0.8	2.9
400		2.9		2.9
500		1.3		1.3
600		0.4		

[EBR-04G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-04GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	40.0		40.0	
15	40.0	12.5	40.0	6.7
50	40.0	12.5	40.0	6.7
100	33.3	12.5	25.8	6.7
150	23.3	12.5	17.5	6.7
200	10.0	10.0	8.3	6.7
300		5.0		2.5
350		1.7		1.3
400		1.7		1.3

[Vertical Installation]

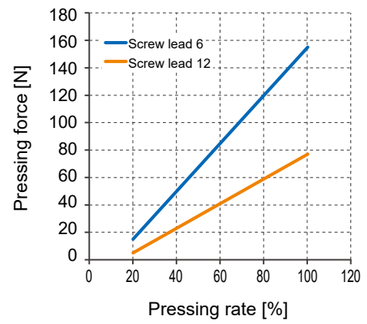
■ EBR-04GE (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	10.0	
15	10.0	2.9
100	10.0	2.9
150	4.2	2.9
175	2.5	2.9
200	2.5	2.9
225	0.8	1.7
250		1.7
300		1.7

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 202.

Pushing Force

[EBR-04G (Connected Controller ECMG/ECG)]



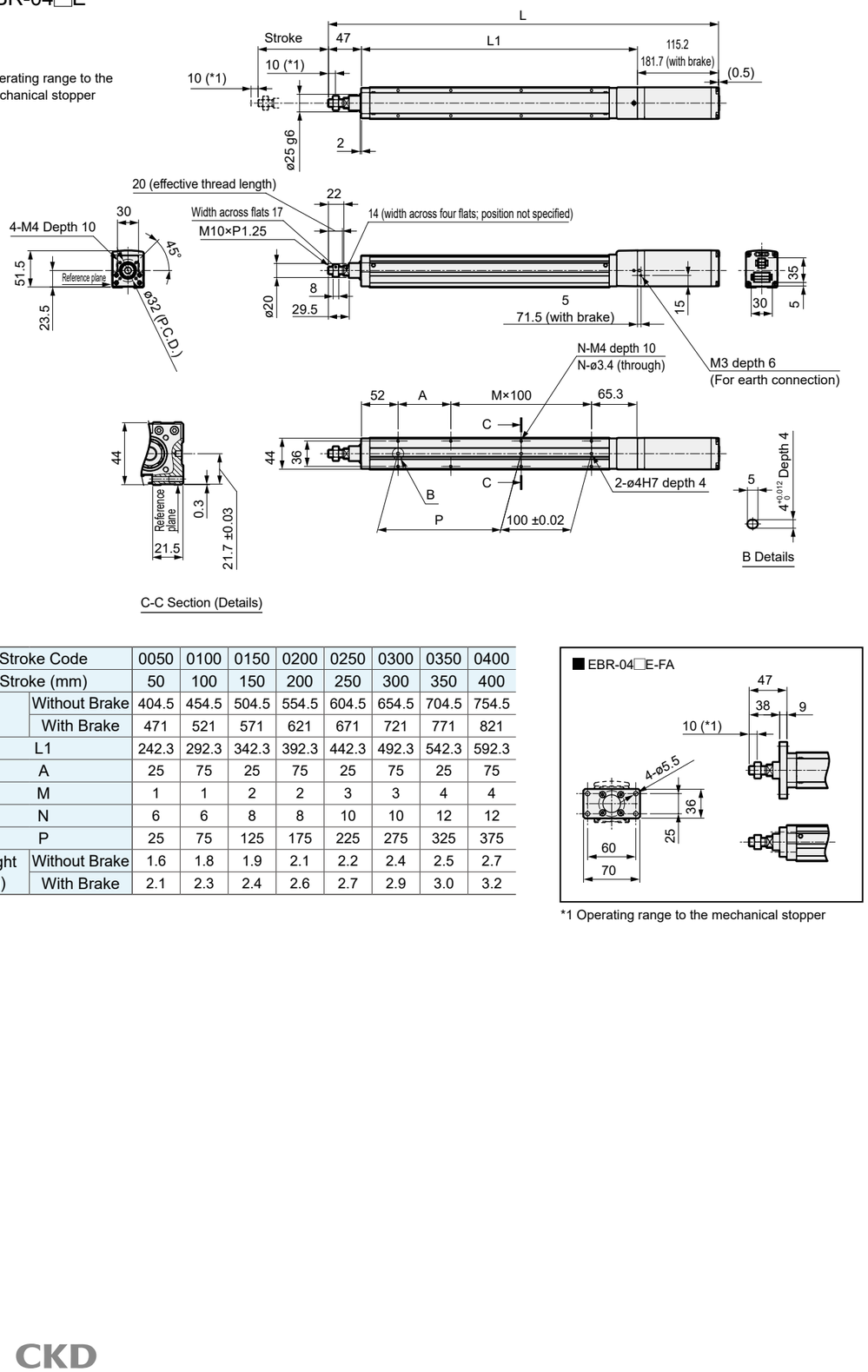
* The pushing force above is a reference value.
  It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

EBR-04□E

Outline Dimensions, Inline Motor Mount

● EBR-04□E

*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L	Without Brake	404.5	454.5	504.5	554.5	604.5	654.5	704.5	754.5
	With Brake	471	521	571	621	671	721	771	821
L1		242.3	292.3	342.3	392.3	442.3	492.3	542.3	592.3
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.7
	With Brake	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2

■ EBR-04□E-FA

*1 Operating range to the mechanical stopper

MEMO

Electric Actuator Guided Rod Type

EBR-04□□

Reverse Parallel Motor Mount Type

□35 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 04 M R - 0 - 06 300 N A N - C S03

❶Body Size

04	Body width 44 mm

❷Connected Controller*1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Mounting Type

00	Basic type
FA	Rod side flange type

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke*2

0050 to 0400	50 mm (every 50 mm) 400 mm

❼Brake*2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable*4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0400 (400 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and P. 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG		ECG		ECR	
Motor		□35 Stepping Motor					
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder				Battery-less Absolute Encoder	
Drive Method		Ball screw ø10					
Stroke mm		50 to 400					
Screw lead mm		6	12	6	12	6	12
Max. Payload kg *1*2	Horizontal	40.0	12.5	40.0	12.5	33.3 (33.3)	18.3 (18.3)
	Vertical	10.0	2.9	8.3	2.9	9.1 (9.1)	4.5 (5.0)
Operating Speed Range *1*3 mm/s		7 to 350	15 to 600	7 to 200	15 to 350	7 to 200 (350)	15 to 400 (600)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0		0.7		0.7 (1.0)	
	Vertical	0.5		0.3		0.3 (0.5)	
Max. Pushing Force N		155	77	155	77	131	69
Pushing Operation Speed Range mm/s		5 to 20		5 to 20		5 to 20	5 to 30
Repeatability mm		±0.01					
Lost Motion mm		0.1 or less					
Motor Power Supply Voltage		24 VDC ±10%				24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%					
	Power Consumption W	6.1				7	
	Holding Force N	140	70	140	70	126	63
Insulation Resistance		10 MΩ, 500 VDC					
Dielectric Strength		500 VAC for 1 minute					
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)				0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)					
Atmosphere		No corrosive gas, explosive gas, or dust					
Protection Structure		IP40					

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. Refer to the following page (ECMG, ECG) or P. 202 (ECR) for details.
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-04G (Connected Controller: ECMG)]

(mm/s)

Screw Lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 200	250	300	350	400
6	24 VDC	350	300	250		
12	24 VDC	600		490		

[EBR-04G (Connected Controller: ECG)]

(mm/s)

Screw Lead (mm)	Power supply voltage	Stroke (mm)
		50 to 400
6	24 VDC	200
12	24 VDC	350

* For EBR-04M (connected controller ECR), please refer to P. 209.

Speed and Payload

[EBR-04G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-04GR/L/D (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	1.0 Screw Lead (mm) 6	12
7	40.0		30.0	
15	40.0	12.5	30.0	10.0
50	40.0	12.5	30.0	9.2
100	40.0	12.5	17.9	9.2
150	40.0	11.7	15.0	5.0
200	32.1	11.7	11.3	5.0
250	26.7	8.3	11.3	5.0
300	15.0	8.3	11.3	5.0
350	2.1	8.3		5.0
400		8.3		5.0
500		6.7		2.5
600		0.4		

[Vertical Installation]

■ EBR-04GR/L/D (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	10.0		10.0	
15	10.0	2.9	10.0	2.9
50	10.0	2.9	10.0	2.9
100	10.0	2.9	10.0	2.9
150	8.3	2.9	8.3	2.9
200	7.1	2.9	5.8	2.9
250	3.3	0.8	3.3	0.8
300	1.3	0.8	1.3	0.8
400		0.8		0.8
500		0.4		0.4

[EBR-04G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-04GR/L/D (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	40.0		35.0	
15	40.0	12.5	35.0	6.7
50	40.0	12.5	35.0	6.7
100	33.3	12.5	25.8	6.7
150	23.3	7.5	17.5	5.0
200	10.0	7.5	8.3	5.0
300		5.0		2.5
350		0.8		0.8

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 202.

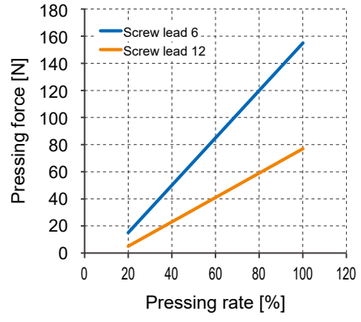
[Vertical Installation]

■ EBR-04GR/L/D (kg)

Speed (mm/s)	Acceleration/ Deceleration (G) 0.3 Screw Lead (mm) 6	12
7	8.3	
15	8.3	2.9
50	8.3	2.9
100	6.7	2.9
150	4.2	2.9
175	0.8	2.9
200		2.9
250		0.8

Pushing Force

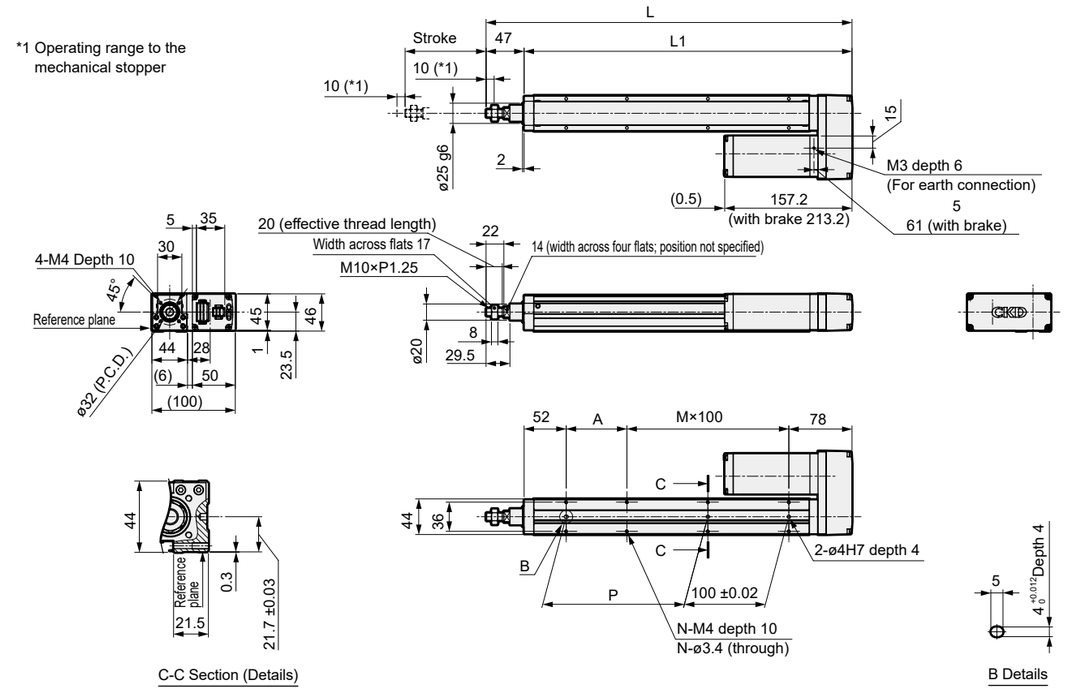
[EBR-04G (Connected Controller ECMG/ECG)]



* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

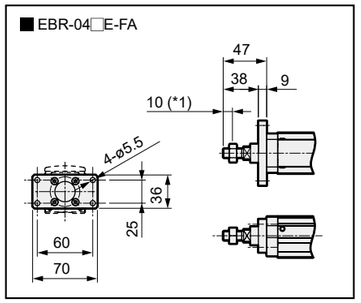
External Dimension Drawing Motor Right Side Return Mount

● EBR-04□R



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L		302	352	402	452	502	552	602	652
L1		255	305	355	405	455	505	555	605
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
	With Brake	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3

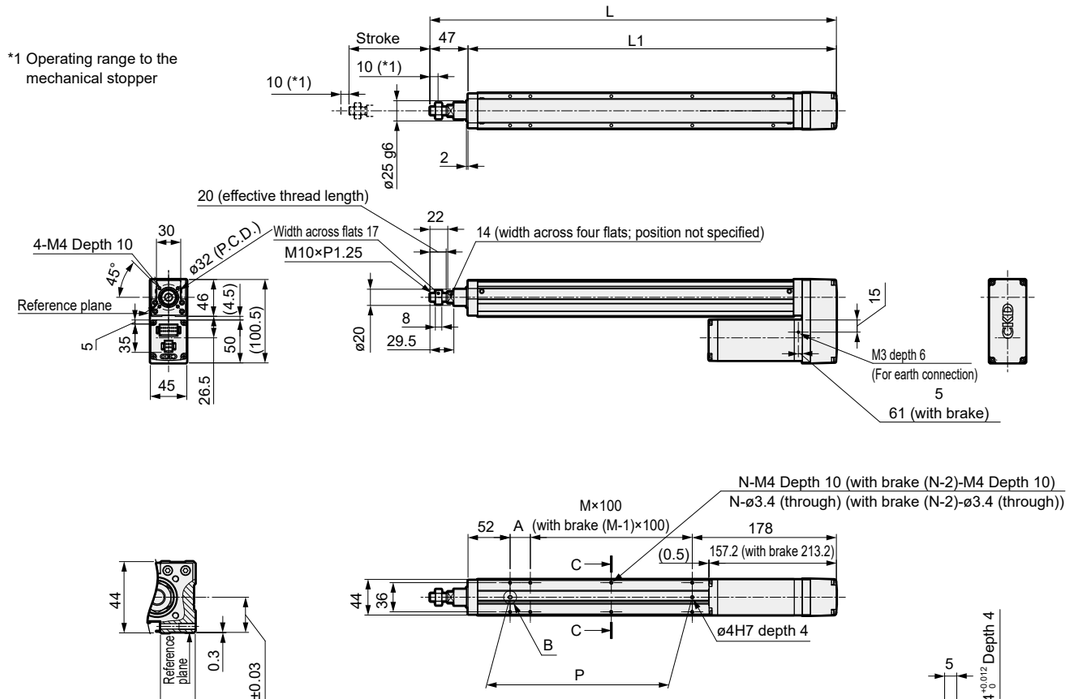
■ EBR-04□E-FA



*1 Operating range to the mechanical stopper

External Dimension Drawing Motor Bottom Side Return Mount

● EBR-04□D

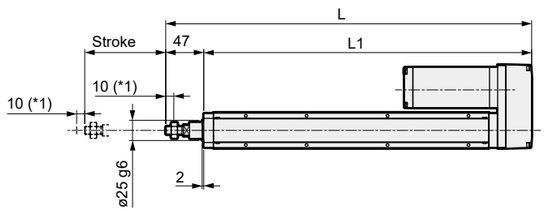


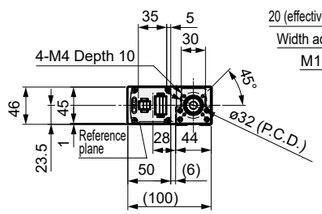
Stroke Code		0250	0300	0350	0400
Stroke (mm)		250	300	350	400
L		502	552	602	652
L1		455	505	555	605
A		25	75	25	75
M		2	2	3	3
N		8	8	10	10
P		225	275	325	375
Weight (kg)	Without Brake	2.3	2.5	2.6	2.8
	With Brake	2.8	3.0	3.1	3.3

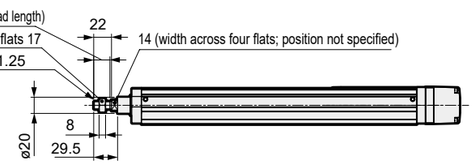
External Dimension Drawing Motor Left Side Return Mount

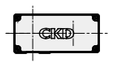
● EBR-04□L

*1 Operating range to the mechanical stopper

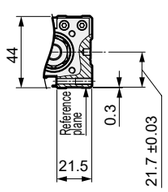




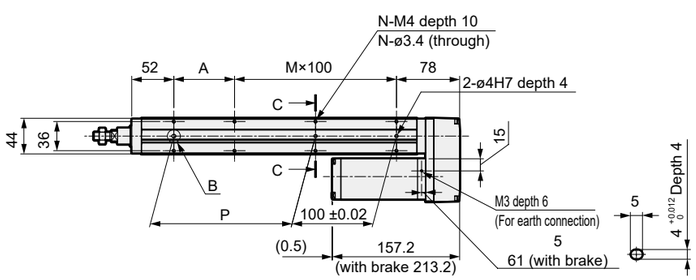




C-C Section (Details)



B Details



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L		302	352	402	452	502	552	602	652
L1		255	305	355	405	455	505	555	605
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
	With Brake	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3

MEMO

Electric Actuator Guided Rod Type

EBR-05□E

Inline Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 05 ❶ M ❷ E ❸ - 00 ❹ - 05 ❺ 0300 ❻ N ❼ A ❽ N - C S03 ❾

❶Body Size

05	Body width 54 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction

E	Inline Mount

❹Mounting Type

00	Basic type
FA	Rod side flange type

❺Screw Lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

❻Stroke

0050 to 0400	50 mm (every 50 mm) 400 mm

❼Brake *2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-subject item (product incorporating EAR99)

Specifications

Connected Controller		ECMG				ECG				ECR		
Motor		□42 Stepping Motor										
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder								Battery-less Absolute Encoder		
Drive Method		Ball screw ø12										
Stroke mm		50 to 400										
Screw lead mm		2	5	10	20	2	5	10	20	2	5	10	20
Max. Payload kg *1*2	Horizontal	80.0	60.0	41.7	11.7	80.0	60.0	41.7	11.7	80.0 (80.0)	60.0 (60.0)	50.0 (50.0)	20.0 (20.0)
	Vertical	23.3	14.2	7.1	2.9	23.3	14.0	7.0	2.9	24.0 (24.0)	15.0 (16.6)	6.6 (10.0)	4.1 (4.1)
Operating Speed Range *1*3 mm/s		2 to 130	6 to 375	12 to 750	25 to 1000	2 to 90	6 to 300	12 to 500	25 to 700	2 to 80 (130)	6 to 275 (300)	12 to 500 (600)	25 to 700 (800)
Max. Acceleration/ Deceleration G *1	Horizontal	0.5	1.0			0.5	0.7			0.5 (0.5)	0.7 (1.0)		
	Vertical	0.5				0.3				0.3 (0.5)			
Max. Pushing Force N		550	220	110	55	550	220	110	55	397	193	94	33
Pushing Operation Speed Range mm/s		5 to 20				5 to 20				5 to 20		5 to 30	
Repeatability mm		±0.01											
Lost Motion mm		0.1 or less											
Motor Power Supply Voltage		24 VDC ±10%								24 VDC ±10% or 48 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%											
	Power Consumption W	6.1								7			
	Holding Force N	420	168	84	42	420	168	84	42	471	188	94	47
Insulation Resistance		10 MΩ, 500 VDC											
Dielectric Strength		500 VAC for 1 minute											
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)								0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)											
Atmosphere		No corrosive gas, explosive gas, or dust											
Protection Structure		IP40											

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 202 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-05G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 200	250	300	350	400
2	24 VDC	130		85		
5	24 VDC	375	330	210		
10	24 VDC	750	650	420		
20	24 VDC	1,000	800			

* For EBR-05M (connected controller ECR), please refer to P. 209.

[EBR-05G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 250	300	350	400
2	24 VDC	90	85		
5	24 VDC	300	210		
10	24 VDC	500	420		
20	24 VDC	700			

Speed and Payload

[EBR-05G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3				0.5	1.0		
	Screw Lead (mm)							
	2	5	10	20	2	5	10	20
2	80.0				80.0			
6	80.0	60.0			80.0	60.0		
12	80.0	60.0	41.7		80.0	60.0	20.0	
25	80.0	60.0	41.7	11.7	80.0	60.0	20.0	8.3
100	80.0	60.0	41.7	11.7	80.0	60.0	20.0	8.3
130	80.0	60.0	41.7	11.7	80.0	42.5	11.7	8.3
150		60.0	41.7	11.7		42.5	11.7	8.3
200		60.0	41.7	11.7		25.8	11.7	8.3
250		38.3	33.3	11.7		21.7	11.7	8.3
300		32.5	33.3	11.7		14.6	11.7	8.3
350		30.0	32.1	11.7		9.2	11.7	6.7
375		21.7	32.1	11.7		5.0	11.7	6.7
400			32.1	11.7			11.7	6.7
500			20.0	11.7			10.0	6.7
600			11.7	11.7			5.8	6.7
700			6.7	6.7			1.7	4.6
750			3.8	6.7			0.4	4.6
800				6.7				4.6
1,000				1.7				0.8

[Vertical Installation]

■ EBR-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3				0.5			
	Screw Lead (mm)							
	2	5	10	20	2	5	10	20
2	23.3				23.3			
6	23.3	14.2			23.3	14.2		
12	23.3	14.2	7.1		23.3	14.2	7.1	
20	23.3	14.2	7.1		23.3	14.2	7.1	
25	23.3	14.2	7.1	2.9	23.3	14.2	7.1	2.1
80	23.3	14.2	7.1	2.9	23.3	14.2	7.1	2.1
100	17.9	14.2	7.1	2.9	16.7	14.2	7.1	2.1
110	10.0	12.1	7.1	2.9	10.0	12.1	7.1	2.1
130	2.1	12.1	7.1	2.9	2.1	12.1	7.1	2.1
150		12.1	7.1	2.9		12.1	7.1	2.1
200		7.9	7.1	2.9		7.9	7.1	2.1
250		7.1	6.7	2.9		7.1	6.7	2.1
300		6.7	6.7	2.9		6.3	6.7	2.1
350		2.5	5.0	2.9		2.5	5.0	2.1
375		1.7	5.0	2.9		1.3	5.0	2.1
400			5.0	2.9			5.0	2.1
500			3.3	2.9			2.9	2.1
600			1.7	2.9			1.7	2.1
700				1.3				0.4
800				1.3				0.4

[EBR-05G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G)							
	0.3				0.5	0.7		
	Screw Lead (mm)							
	2	5	10	20	2	5	10	20
2	80.0				80.0			
6	80.0	60.0			80.0	60.0		
12	80.0	60.0	41.7		80.0	60.0	20.0	
25	80.0	60.0	41.7	11.7	80.0	60.0	20.0	11.7
50	80.0	60.0	41.7	8.3	80.0	60.0	20.0	8.3
90	80.0	60.0	41.7	8.3	80.0	53.3	20.0	8.3
100		60.0	41.7	8.3		53.3	20.0	8.3
150		43.3	35.0	7.5		35.0	20.0	5.8
200		35.0	35.0	7.5		20.0	20.0	5.8
250		13.3	20.0	7.5		8.3	8.3	5.8
275		10.0	20.0	7.5		6.7	8.3	5.8
300		6.7	20.0	7.5		6.7	8.3	5.8
400			10.0	7.5			5.0	3.3
500			5.0	7.5			1.7	3.3
600				5.0				1.7
700				2.5				0.8

[Vertical Installation]

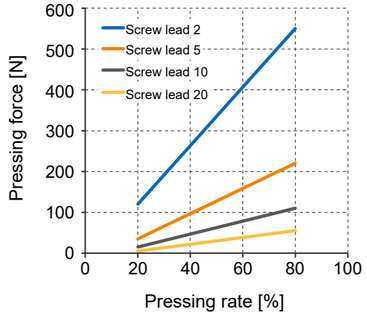
■ EBR-05GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G)			
	0.3			
	Screw Lead (mm)			
	2	5	10	20
2	23.3			
6	23.3	14.0		
12	23.3	14.0	7.0	
20	23.3	14.0	7.0	
25	23.3	14.0	7.0	2.9
50	23.3	14.0	7.0	2.9
60	23.3	12.5	7.0	2.9
70	18.3	12.5	7.0	2.9
90	11.7	12.5	7.0	2.9
100		12.5	7.0	2.9
150		7.5	5.8	2.9
200		4.2	5.8	2.9
250		2.5	1.7	2.9
300			1.7	2.9
400				2.1
500				1.3

* For ECR, please refer to P. 202. *This is for an acceleration/deceleration of 0.3G.

Pushing Force

[EBR-05G (Connected Controller ECMG/ECG)]



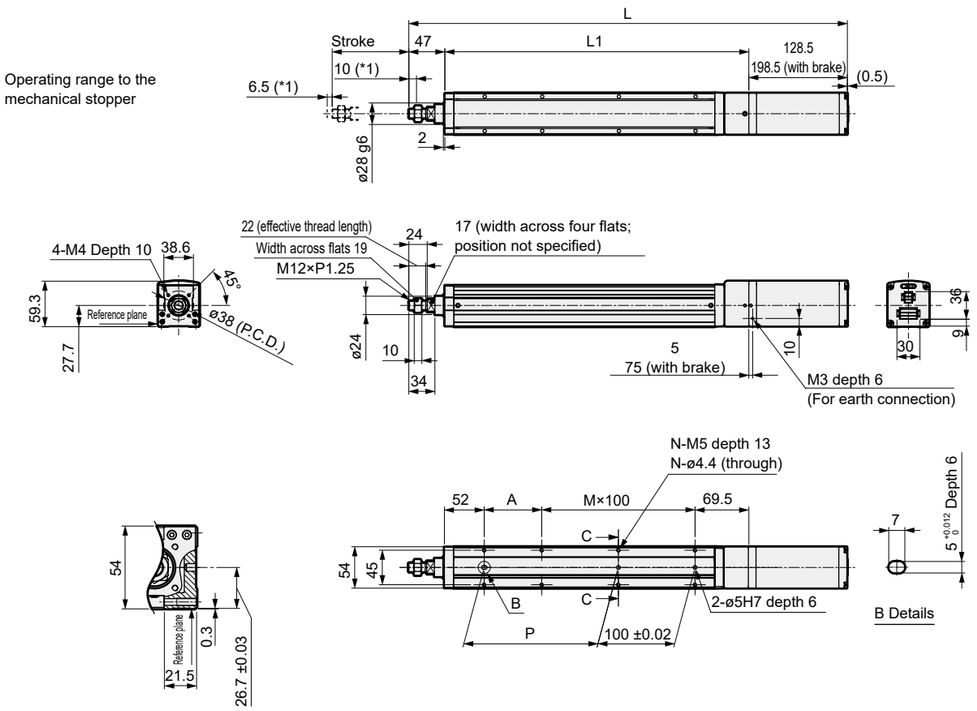
* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

EBR-05□E

External Dimension Drawing

● EBR-05□E

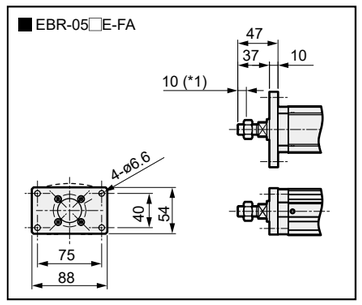
*1 Operating range to the mechanical stopper



Section C-C (Details)

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L	Without Brake	422	472	522	572	622	672	722	772
	With Brake	492	542	592	642	692	742	792	842
L1		246.5	296.5	346.5	396.5	446.5	496.5	546.5	596.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.8
	With Brake	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.6

■ EBR-05□E-FA



*1 Operating range to the mechanical stopper

MEMO

Rod Type
EBR

Electric Actuator Guided Rod Type

EBR-05□□

Reverse Parallel Motor Mount Type

□42 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 05 M R - 0 - 05 0300 N A N - C S03

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶Body Size

05	Body width 54 mm

❷Connected Controller*1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Mounting Type

00	Basic type
FA	Rod side flange type

❺Screw Lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

❻Stroke*2

0050 to 0400	50 mm (every 50 mm) 400 mm

❼Brake*2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable*4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0400 (400 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG				ECG				ECR			
Motor		□42 Stepping Motor											
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder								Battery-less Absolute Encoder			
Drive Method		Ball screw ø12											
Stroke mm		50 to 400											
Screw lead mm		2	5	10	20	2	5	10	20	2	5	10	20
Max. Payload kg *1*2	Horizontal	80.0	60.0	38.3	11.7	80.0	60.0	41.7	11.7	80.0 (80.0)	60.0 (60.0)	36.6 (36.6)	18.3 (18.3)
	Vertical	23.3	14.2	6.7	1.7	23.3	14.0	6.7	1.7	24.0 (24.0)	15.0 (16.6)	6.6 (8.3)	4.1 (4.1)
Operating Speed Range *1*3 mm/s		2 to 130	6 to 375	12 to 650	25 to 1000	2 to 90	6 to 250	12 to 400	25 to 600	2 to 80 (120)	6 to 250 (330)	12 to 400 (500)	25 to 700 (800)
Max. Acceleration/ Deceleration G *1	Horizontal	0.5	1.0			0.5	0.7			0.5 (0.5)	0.7 (1.0)		
	Vertical	0.5				0.3				0.3 (0.5)			
Max. Pushing Force N		550	220	110	55	550	220	110	55	397	193	94	33
Pushing Operation Speed Range mm/s		5 to 20				5 to 20				5 to 20		5 to 30	
Repeatability mm		±0.01											
Lost Motion mm		0.1 or less											
Motor Power Supply Voltage		24 VDC ±10%								24 VDC ±10% or 48 VDC ±10%			
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%											
	Power Consumption W	6.1								7			
	Holding Force N	420	168	84	42	420	168	84	42	471	188	94	47
Insulation Resistance		10 MΩ, 500 VDC											
Dielectric Strength		500 VAC for 1 minute											
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)								0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)											
Atmosphere		No corrosive gas, explosive gas, or dust											
Protection Structure		IP40											

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 202 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-05G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)				
		50 to 200	250	300	350	400
2	24 VDC	130		85		
5	24 VDC	375	330	210		
10	24 VDC	650		420		
20	24 VDC	1,000	800			

[EBR-05G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 250	300	350	400
2	24 VDC	90	85		
5	24 VDC	250	210		
10	24 VDC	400			
20	24 VDC	600			

* For EBR-05M (connected controller ECR), please refer to P. 209.

Speed and Payload

[EBR-05G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 – Screw Lead (mm) 2	5	10	20	0.5 – 2	5	10	20	1.0 – 2	5	10	20
2	80.0				80.0							
6	80.0	60.0			80.0	60.0						
12	80.0	60.0	38.3		80.0	60.0	15.0					
25	80.0	60.0	38.3	11.7	80.0	60.0	15.0	7.5				
50	80.0	60.0	38.3	11.7	80.0	60.0	15.0	7.5				
100	80.0	60.0	38.3	11.7	80.0	43.3	15.0	7.5				
130	80.0	60.0	31.7	11.7	80.0	26.7	11.7	6.7				
150		60.0	31.7	11.7		26.7	11.7	6.7				
200		51.7	31.7	11.7		18.3	11.7	6.7				
250		38.3	31.7	11.7		15.0	11.7	6.7				
300		32.5	31.7	11.7		14.6	11.7	6.7				
350		23.8	21.7	11.7		9.2	11.7	6.7				
375		15.8	21.7	11.7		5.0	11.7	6.7				
400			21.7	11.7			11.7	6.7				
500			14.2	11.7			10.0	6.7				
600			5.8	11.7			2.5	6.7				
650			0.4	6.7				3.3				
700				6.7				3.3				
800				6.7				3.3				
1,000				1.7				0.8				

[Vertical Installation]

■ EBR-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 – Screw Lead (mm) 2	5	10	20	0.5 – 2	5	10	20
2	23.3				23.3			
6	23.3	14.2			23.3	14.2		
12	23.3	14.2	6.7		23.3	14.2	6.7	
20	23.3	14.2	6.7		23.3	14.2	6.7	
25	23.3	14.2	6.7	1.7	23.3	14.2	6.7	1.7
80	23.3	14.2	6.7	1.7	23.3	14.2	6.7	1.7
100	17.9	14.2	6.7	1.7	16.7	14.2	6.7	1.7
110	10.0	12.1	6.7	1.7	10.0	12.1	6.7	1.7
130	2.1	12.1	6.7	1.7	2.1	12.1	6.7	1.7
150		12.1	6.7	1.7		12.1	6.7	1.7
200		7.9	6.7	1.7		7.9	6.7	1.7
250		7.1	6.7	1.7		7.1	6.7	1.7
300		5.0	6.7	1.7		5.0	6.7	1.7
350		1.7	4.2	1.7		1.7	3.8	1.7
375		0.4	4.2	1.7		0.4	3.8	1.7
400			4.2	1.7			3.8	1.7
500			2.1	1.7			1.7	1.7
600			0.4	1.7				1.7
700				0.4				
800				0.4				

[EBR-05G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 – Screw Lead (mm) 2	5	10	20	0.5 – 2	5	10	20	0.7 – 2	5	10	20
2	80.0				80.0							
6	80.0	60.0			80.0	60.0						
12	80.0	60.0	38.3		80.0	60.0	20.0					
25	80.0	60.0	38.3	11.7	80.0	60.0	20.0	5.8				
50	80.0	60.0	38.3	8.3	80.0	60.0	20.0	5.8				
90	80.0	60.0	38.3	8.3	80.0	43.3	20.0	5.8				
100		60.0	38.3	8.3		43.3	20.0	5.8				
150		43.3	30.0	7.5		26.7	14.2	5.8				
200		35.0	30.0	7.5		18.3	14.2	5.8				
250		10.0	12.5	7.5		7.5	6.7	5.8				
300			12.5	7.5			6.7	5.8				
350			2.5	6.7			0.8	3.3				
400			2.5	6.7				3.3				
500				6.7				3.3				
600				3.3				1.7				

* This is for an acceleration/deceleration of 0.3 G.
* For ECR, please refer to P. 202.

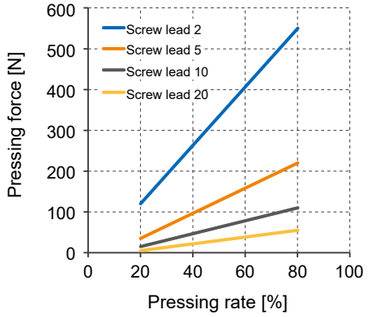
[Vertical Installation]

■ EBR-05GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 – Screw Lead (mm) 2	5	10	20
2	23.3			
6	23.3	14.0		
12	23.3	14.0	6.7	
20	23.3	14.0	6.7	
25	23.3	14.0	6.7	1.7
40	23.3	14.0	6.7	1.7
50	16.7	14.0	6.7	1.7
60	16.7	10.0	6.7	1.7
70	11.7	10.0	6.7	1.7
90	3.3	10.0	6.7	1.7
100		10.0	6.7	1.7
150		5.8	5.0	1.7
200		2.5	5.0	1.7
250			0.4	1.7
300				1.7
400				1.3

Pushing Force

[EBR-05G (Connected Controller ECMG/ECG)]

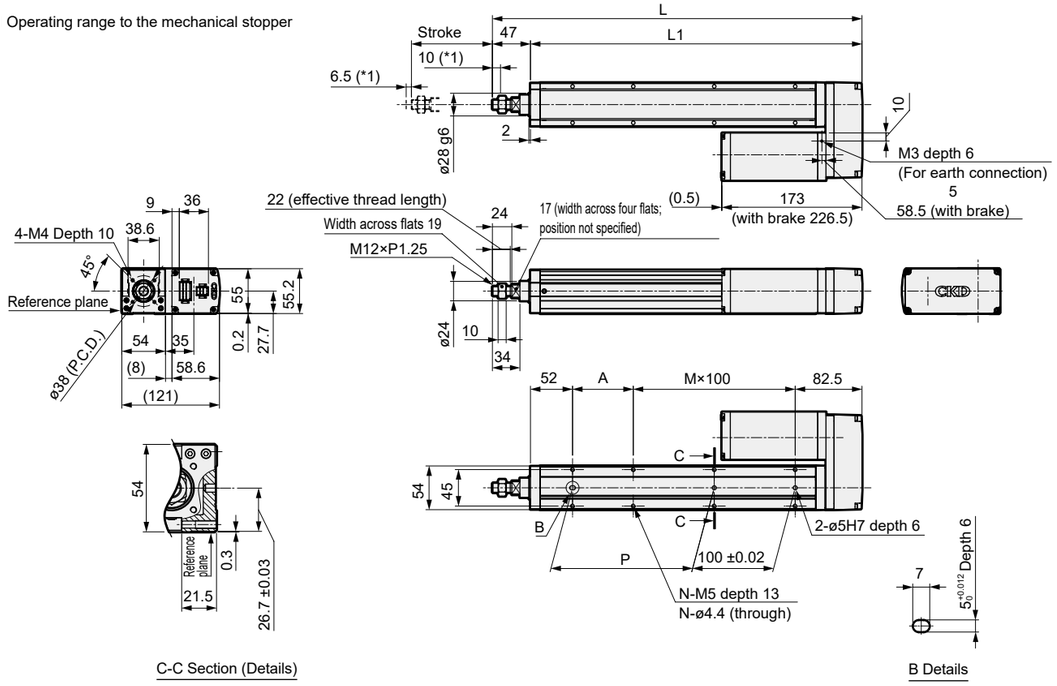


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

External Dimension Drawing Motor Right Side Return Mount

● EBR-05□R

*1 Operating range to the mechanical stopper

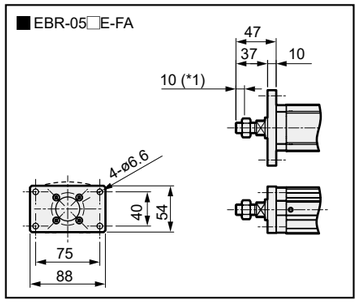


C-C Section (Details)

B Details

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L		306.5	356.5	406.5	456.5	506.5	556.5	606.5	656.5
L1		259.5	309.5	359.5	409.5	459.5	509.5	559.5	609.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	2.4	2.5	2.6	2.8	3.1	3.2	3.2	3.5
	With Brake	3.5	3.6	3.7	3.9	4.2	4.3	4.3	4.6

■ EBR-05□E-FA

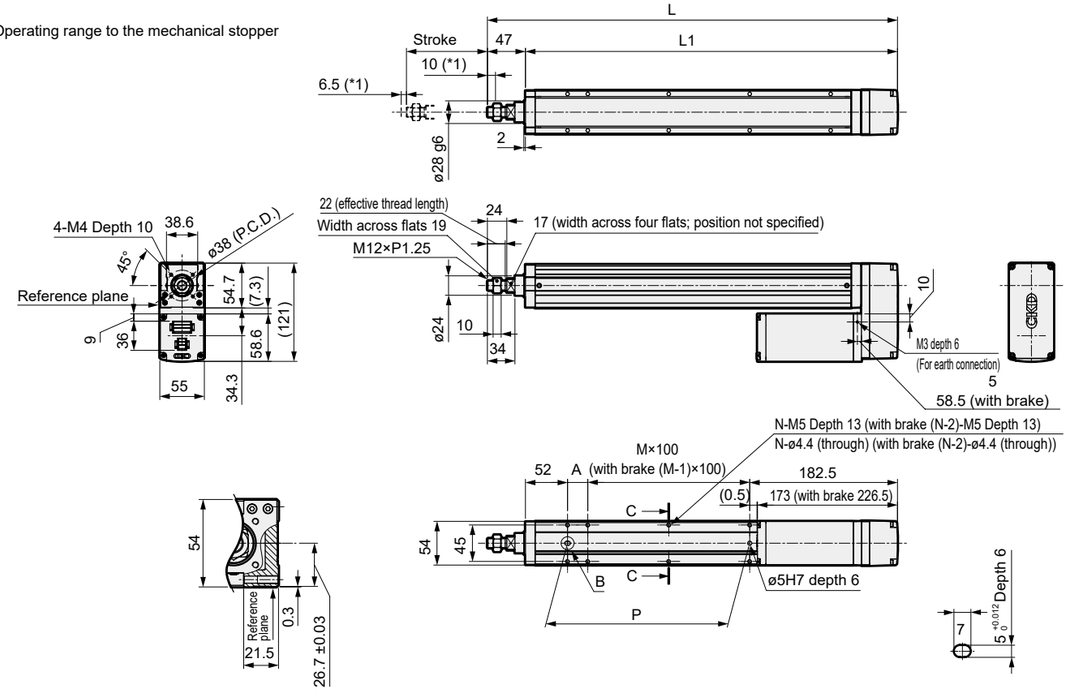


*1 Operating range to the mechanical stopper

External Dimension Drawing Motor Bottom Side Return Mount

● EBR-05□D

*1 Operating range to the mechanical stopper



C-C Section (Details)

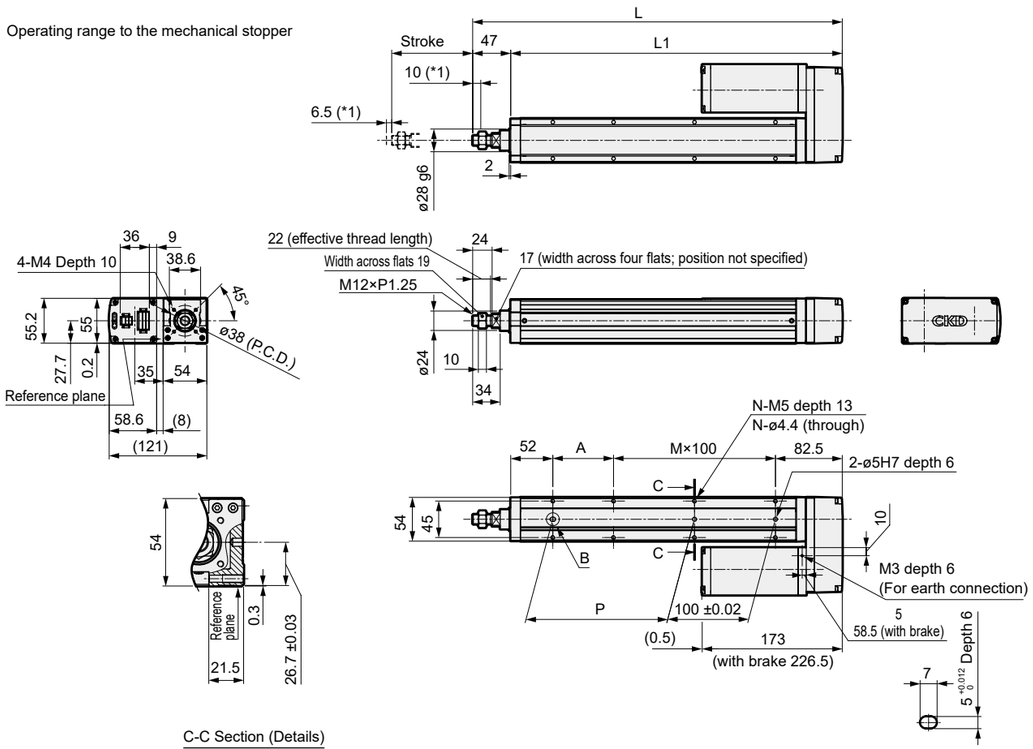
B Details

Stroke Code		0250	0300	0350	0400
Stroke (mm)		250	300	350	400
L		506.5	556.5	606.5	656.5
L1		459.5	509.5	559.5	609.5
A		25	75	25	75
M		2	2	3	3
N		8	8	10	10
P		225	275	325	375
Weight (kg)	Without Brake	3.1	3.2	3.2	3.5
	With Brake	4.2	4.3	4.3	4.6

External Dimension Drawing Motor Left Side Return Mount

● EBR-05□L

*1 Operating range to the mechanical stopper



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke (mm)		50	100	150	200	250	300	350	400
L		306.5	356.5	406.5	456.5	506.5	556.5	606.5	656.5
L1		259.5	309.5	359.5	409.5	459.5	509.5	559.5	609.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without Brake	2.4	2.5	2.6	2.8	3.1	3.2	3.2	3.5
	With Brake	3.5	3.6	3.7	3.9	4.2	4.3	4.3	4.6

MEMO

Electric Actuator Guided Rod Type

EBR-08□E

Inline Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 08 ❶ M ❷ E ❸ - 0 ❹ - 05 ❺ 0300 ❻ N ❼ A ❽ N - C S03 ❾

❶Body Size

08	Body width 82 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction

E	Inline Mount

❹Mounting Type

00	Basic type
FA	Rod Side Flange Type

❺Screw Lead

05	5 mm
10	10 mm
20	20 mm

❻Stroke

0050 to 0700	50 mm (every 50 mm) 700 mm

❼Brake *2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable *3

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG			ECR	
Motor		□56 Stepping Motor							
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder						Battery-less Absolute Encoder	
Drive Method		Ball screw ø16							
Stroke mm		50 to 700							
Screw lead mm		5	10	20	5	10	20	5	10	20
Max. Payload kg *1*2	Horizontal	80.0	70.0	35.0	80.0	70.0	35.0	80.0 (80.0)	70.0 (70.0)	23.3 (35.0)
	Vertical	55.0	23.3	10.0	55.0	23.3	10.0	35.0 (38.3)	15.0 (18.3)	10.0 (11.6)
Operating Speed Range *1*3 mm/s		6 to 250	12 to 470	25 to 750	6 to 125	12 to 300	25 to 500	6 to 150 (225)	12 to 300 (450)	25 to 500 (900)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0			0.7			0.7 (1.0)		
	Vertical	0.5			0.3			0.3 (0.5)		
Max. Pushing Force N		965	482	241	965	482	241	1050	468	213
Pushing Operation Speed Range mm/s		5 to 20			5 to 20			5 to 30		
Repeatability mm		±0.01							
Lost Motion mm		0.1 or less							
Motor Power Supply Voltage		24 VDC ±10%						24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%							
	Power Consumption W	7.2						8	
	Holding Force N	768	384	192	768	384	192	754	377	188
Insulation Resistance		10 MΩ, 500 VDC							
Dielectric Strength		500 VAC for 1 minute							
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)						0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)							
Atmosphere		No corrosive gas, explosive gas, or dust							
Protection Structure		IP40							

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 202 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-08G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 200	250	300	350 to 700
5	24 VDC	250	230		200
10	24 VDC	470	450		400
20	24 VDC	750	600		

* For EBR-08M (connected controller ECR), please refer to P. 209.

[EBR-08G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)
		50 to 700
5	24 VDC	125
10	24 VDC	300
20	24 VDC	500

Speed and Payload

[EBR-08G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	1.0 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	55.0	
25	80.0	70.0	35.0	80.0	55.0	34.2
100	80.0	70.0	35.0	80.0	55.0	34.2
150	80.0	70.0	35.0	31.7	39.2	34.2
200	38.3	70.0	35.0	14.6	39.2	26.7
250	38.3	55.0	35.0		23.8	26.7
300		55.0	35.0		23.8	26.7
400		25.8	27.1		15.0	16.7
450		3.3	27.1		3.3	16.7
470		1.7	9.6		1.3	6.3
600			9.6			6.3
700			2.9			1.3
750			0.8			

[Vertical Installation]

■ EBR-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	55.0			55.0		
12	55.0	23.3		55.0	23.3	
25	55.0	23.3	10.0	55.0	23.3	10.0
50	47.5	23.3	10.0	46.7	23.3	10.0
100	30.8	21.3	10.0	30.0	21.3	10.0
150	17.9	13.3	9.2	17.1	13.3	9.2
200	5.8	13.3	9.2	5.8	13.3	9.2
250	0.4	7.5	5.0		6.7	4.2
300		7.5	5.0		6.7	4.2
350		4.2	5.0		2.9	4.2
400		2.1	5.0		1.3	4.2
500			2.5			2.5
600			0.8			

[EBR-08G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	35.0	80.0	70.0	26.7
50	80.0	70.0	35.0	80.0	70.0	26.7
75	80.0	51.7	35.0	80.0	35.0	26.7
100	80.0	51.7	35.0	51.7	35.0	26.7
125	51.7	51.7	35.0	43.3	26.7	18.3
150		51.7	35.0		26.7	18.3
200		35.0	20.0		26.7	18.3
250		26.7	20.0		3.3	10.0
300		3.3	20.0			10.0
400			10.0			1.7
500			1.7			

[Vertical Installation]

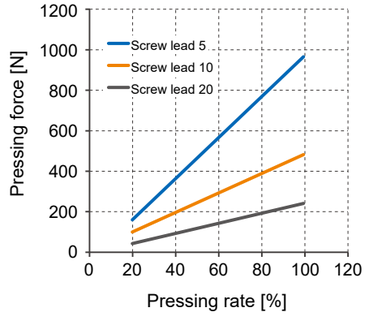
■ EBR-08GE (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	55.0		
12	55.0	23.3	
25	55.0	23.3	10.0
50	35.0	23.3	10.0
75	21.7	8.3	10.0
100	3.3	8.3	10.0
125	3.3	1.7	6.7
150		1.7	6.7
200		1.3	6.7
250		1.3	1.7
300			1.7

* This is for an acceleration/deceleration of 0.3 G. *For ECR, please refer to P. 202.

Pushing Force

[EBR-08G (Connected Controller: ECMG/ECG)]

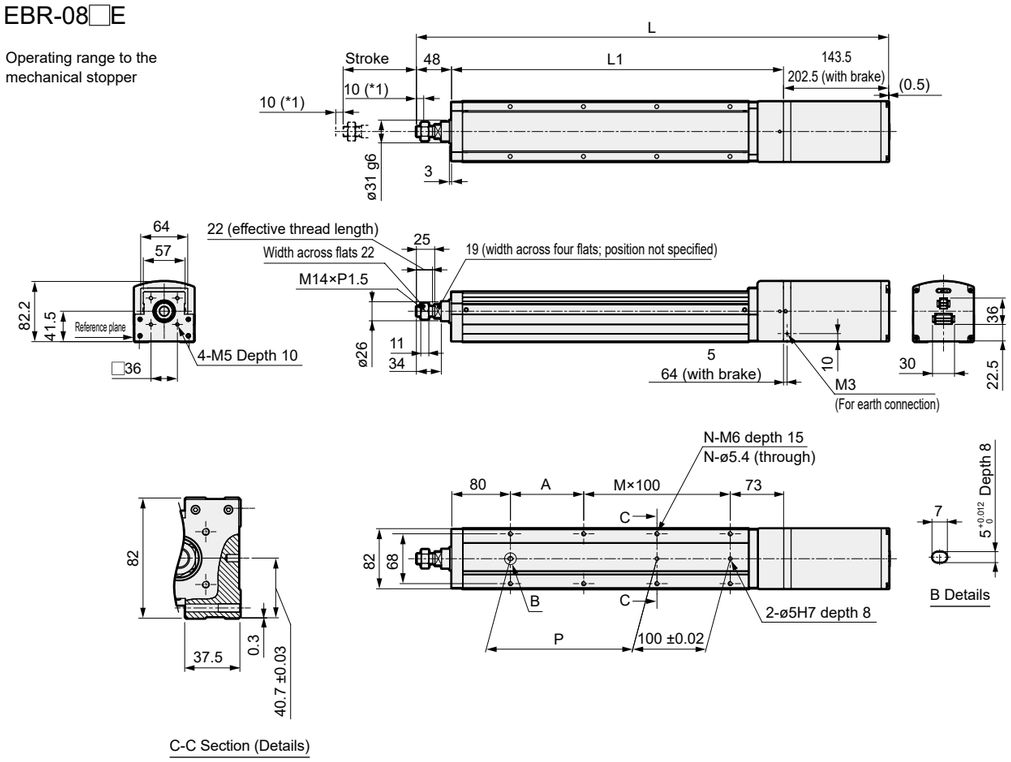


* The pushing force above is a reference value. It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

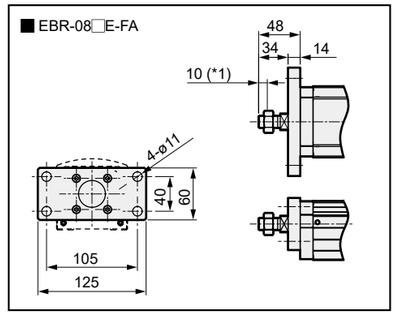
External Dimension Drawing

● EBR-08□E

*1 Operating range to the mechanical stopper



C-C Section (Details)



*1 Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L	Without Brake	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5
	With Brake	553.5	603.5	653.5	703.5	753.5	803.5	853.5	903.5	953.5	1003.5	1053.5	1103.5	1153.5	1203.5
L1		303	353	403	453	503	553	603	653	703	753	803	853	903	953
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without Brake	6.2	6.6	7.0	7.3	7.7	8.1	8.5	8.8	9.2	9.6	9.9	10.3	10.7	11.0
	With Brake	7.5	7.9	8.3	8.6	9.0	9.4	9.8	10.1	10.5	10.9	11.2	11.6	12.0	12.3

MEMO

Rod Type
EBR
Ending

Electric Actuator Guided Rod Type

EBR-08□□

Reverse Parallel Motor Mount Type

□56 Stepping Motor

For compatible detailed model numbers, please see our website.

Model No. Notation Method

EBR - 08 M R - 0 - 05 0300 N A N - C S03

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶Body Size

08	Body width 82 mm

❷Connected Controller *1

G	ECMG/ECG
M	ECR

❸Motor Mounting Direction *2

R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left-Side Reverse Parallel Mount

❹Mounting Type

00	Basic type
FA	Rod Side Flange Type

❺Screw Lead

05	5 mm
10	10 mm
20	20 mm

❻Stroke*2

0050 to 0700	50 mm (every 50 mm) 700 mm

❼Brake*2

N	None
B	Yes

❽Encoder

A	Battery-less Absolute Encoder (for ECR)
B	Battery-less Absolute Encoder (for ECMG/ECG)
C	Incremental Encoder (for ECMG/ECG)

❾Relay Cable*4

N00	None
S01	Fixed cable 1 m
S03	Fixed cable 3 m
S05	Fixed cable 5 m
S10	Fixed cable 10 m
R01	Flexible cable 1 m
R03	Flexible cable 3 m
R05	Flexible cable 3 m
R10	Flexible cable 10 m

*1 Select the controller from P. 529.
*2 When "D" is selected for the motor mounting direction, the stroke can be selected from "0250 (250 mm)" to "0700 (700 mm)".
*3 Select "Yes" for vertical use.
*4 For the external dimension drawing of the relay cable, refer to P. 607 for ECR and 576 for ECMG/ECG.

EAR-Subject Item (product incorporating EAR99)

Specifications

Connected Controller		ECMG			ECG			ECR	
Motor		□56 Stepping Motor							
Encoder Type		Battery-less Absolute Encoder/Incremental Encoder						Battery-less Absolute Encoder	
Drive Method		Ball screw ø16							
Stroke mm		50 to 700							
Screw lead mm		5	10	20	5	10	20	5	10	20
Max. Payload *1*2 kg	Horizontal	80.0	70.0	35.0	80.0	70.0	35.0	80.0 (80.0)	70.0 (70.0)	23.3 (35.0)
	Vertical	55.0	20.0	9.2	55.0	20.0	8.3	35.0 (38.3)	15.0 (18.3)	8.3 (8.3)
Operating Speed Range *1*3 mm/s		6 to 230	12 to 450	25 to 700	6 to 125	12 to 250	25 to 400	6 to 100 (225)	12 to 300 (450)	25 to 500 (700)
Max. Acceleration/ Deceleration G *1	Horizontal	1.0			0.7			0.7 (1.0)		
	Vertical	0.5			0.3			0.3 (0.5)		
Max. Pushing Force N		965	482	241	965	482	241	1050	468	213
Pushing Operation Speed Range mm/s		5 to 20			5 to 20			5 to 30		
Repeatability mm		±0.01							
Lost Motion mm		0.1 or less							
Motor Power Supply Voltage		24 VDC ±10%						24 VDC ±10% or 48 VDC ±10%	
Brake	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC ±10%							
	Power Consumption W	7.2						8	
	Holding Force N	768	384	192	768	384	192	754	377	188
Insulation Resistance		10 MΩ, 500 VDC							
Dielectric Strength		500 VAC for 1 minute							
Operating Ambient Temperature, Humidity		10°C to 40°C (no freezing) 35 to 80% RH (no condensation)						0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10°C to 50°C (no freezing) 35 to 80% RH (no condensation)							
Atmosphere		No corrosive gas, explosive gas, or dust							
Protection Structure		IP40							

*1 Values in ( ) are for 48 VDC.
*2 Payload varies depending on acceleration/deceleration and speed. For details, please refer to the next P. (ECMG, ECG) or P. 202 (ECR).
*3 Maximum speed may decrease depending on conditions.

Stroke and Max. Speed

[EBR-08G (Connected Controller: ECMG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)			
		50 to 200	250	300	350 to 700
5	24 VDC	230			200
10	24 VDC	450			400
20	24 VDC	700		600	

* For EBR-08M (connected controller ECR), please refer to P. 209.

[EBR-08G (Connected Controller: ECG)]

(mm/s)

Screw lead (mm)	Power supply voltage	Stroke (mm)
		50 to 700
5	24 VDC	125
10	24 VDC	250
20	24 VDC	400

Speed and Payload

[EBR-08G (Connected Controller: ECMG)]

[Horizontal Installation]

■ EBR-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	1.0 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	55.0	
25	80.0	70.0	35.0	80.0	55.0	25.8
50	80.0	70.0	35.0	80.0	55.0	25.8
100	80.0	70.0	35.0	16.7	55.0	25.8
150	80.0	69.6	35.0	16.7	39.2	25.8
180	38.3	69.6	35.0	5.0	39.2	20.8
200	38.3	69.6	35.0		39.2	20.8
230	6.7	43.8	35.0		23.8	20.8
300		43.8	35.0		23.8	20.8
400		23.8	20.0		15.0	11.7
450		3.3	20.0		3.3	11.7
600			5.0			5.0
700			0.4			

[Vertical Installation]

■ EBR-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20
6	55.0			55.0		
12	55.0	20.0		55.0	20.0	
25	55.0	20.0	9.2	55.0	20.0	9.2
50	41.3	20.0	9.2	40.8	20.0	9.2
100	24.2	20.0	9.2	24.2	20.0	9.2
150	7.1	9.6	9.2	7.1	9.2	9.2
200	2.9	9.6	9.2		9.2	9.2
300		4.2	4.6		4.2	4.2
350		1.7	4.6		0.4	4.2
400			4.6			4.2
500			2.1			0.8
600			0.4			

[EBR-08G (Connected Controller: ECG)]

[Horizontal Installation]

■ EBR-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	35.0	80.0	70.0	21.7
50	80.0	70.0	35.0	80.0	70.0	21.7
75	80.0	51.7	35.0	80.0	35.0	21.7
100	51.7	51.7	35.0	43.3	35.0	21.7
125	51.7	51.7	33.3	43.3	26.7	18.3
150		51.7	33.3		26.7	18.3
200		31.7	33.3		18.3	18.3
250		13.3	16.7		3.3	9.2
300			16.7			9.2
400			9.2			1.7

[Vertical Installation]

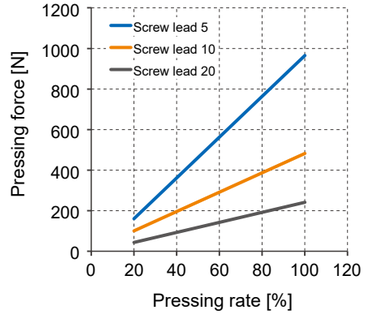
■ EBR-08GR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20
6	55.0		
12	55.0	20.0	
25	55.0	20.0	8.3
50	35.0	20.0	8.3
75	21.7	8.3	8.3
100	3.3	8.3	8.3
125	3.3	1.7	6.7
150		1.7	6.7
200		1.3	6.7
225		0.8	1.7
300			1.7

* This is for an acceleration/deceleration of 0.3 G. *For ECR, please refer to P. 202.

Pushing Force

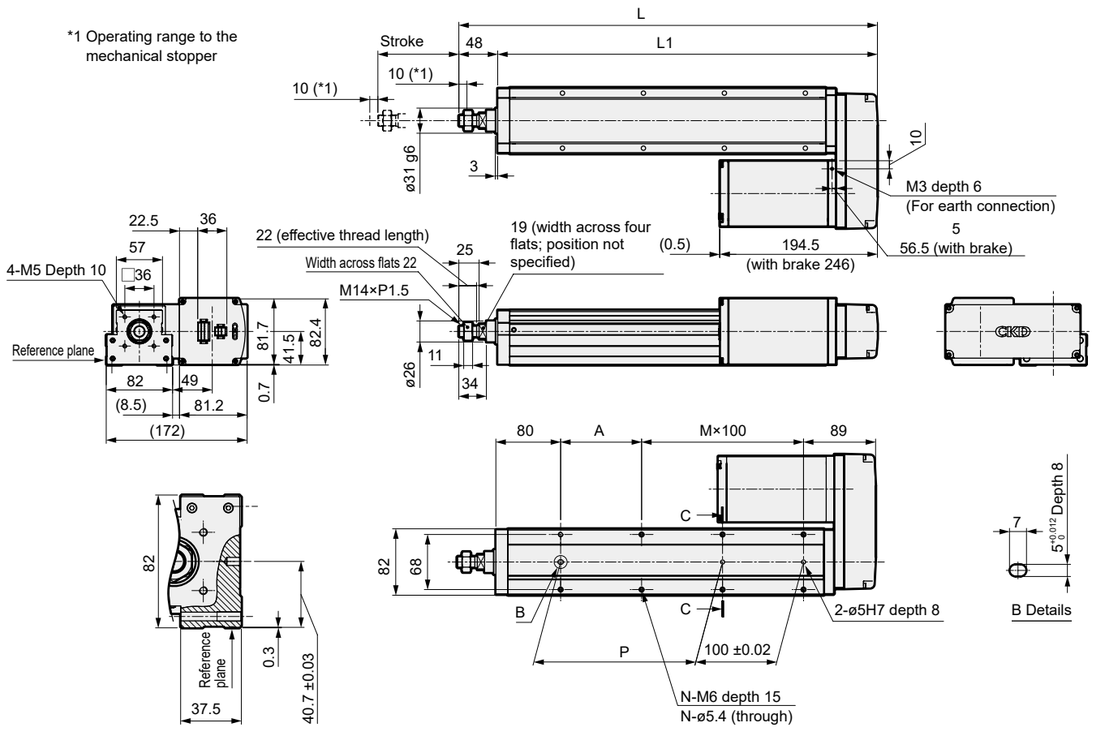
[EBR-08G (Connected Controller ECMG/ECG)]



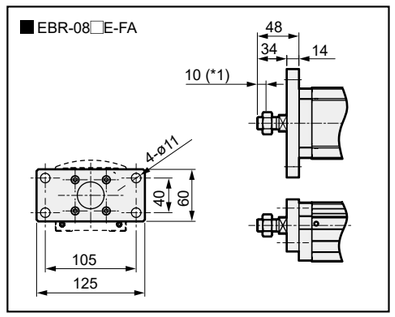
* The pushing force above is a reference value.
  It may vary depending on conditions such as pushing speed.
* For ECR, please refer to P. 209.

External Dimension Drawing Motor Right Side Return Mount

● EBR-08□R



C-C Section (Details)

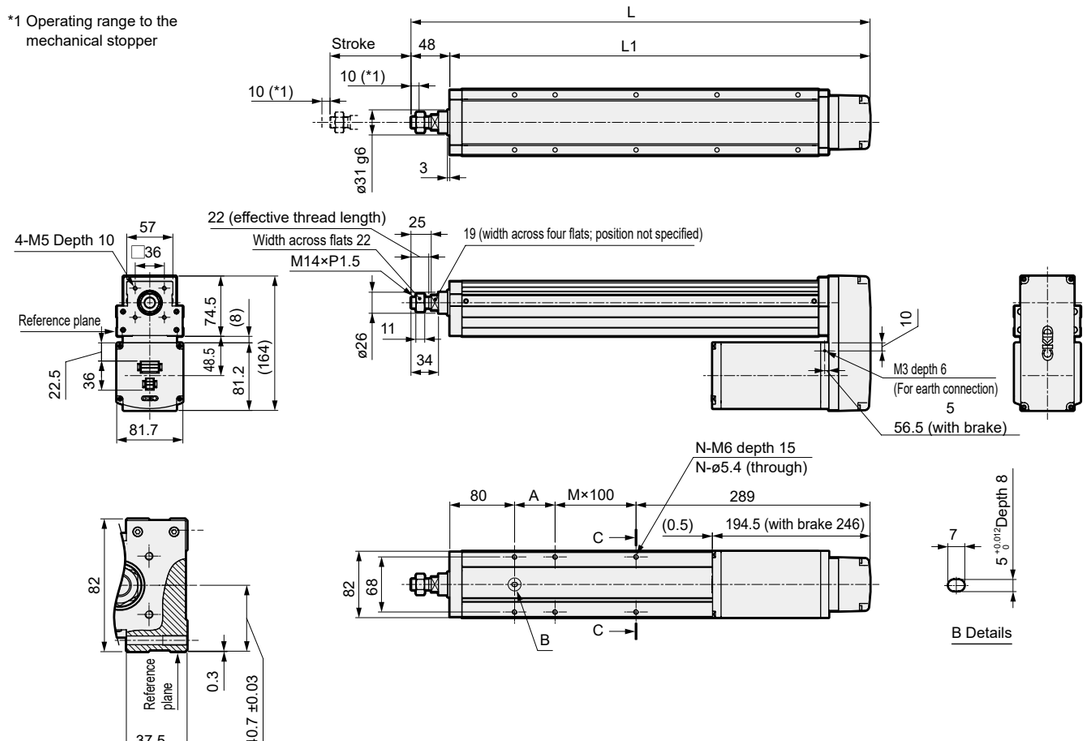


*1 Operating range to the mechanical stopper

Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L		367	417	467	517	567	617	667	717	767	817	867	917	967	1017
L1		319	369	419	469	519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without Brake	5.9	6.3	6.7	7.0	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With Brake	7.2	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

External Dimension Drawing Motor Bottom Side Return Mount

● EBR-08□D

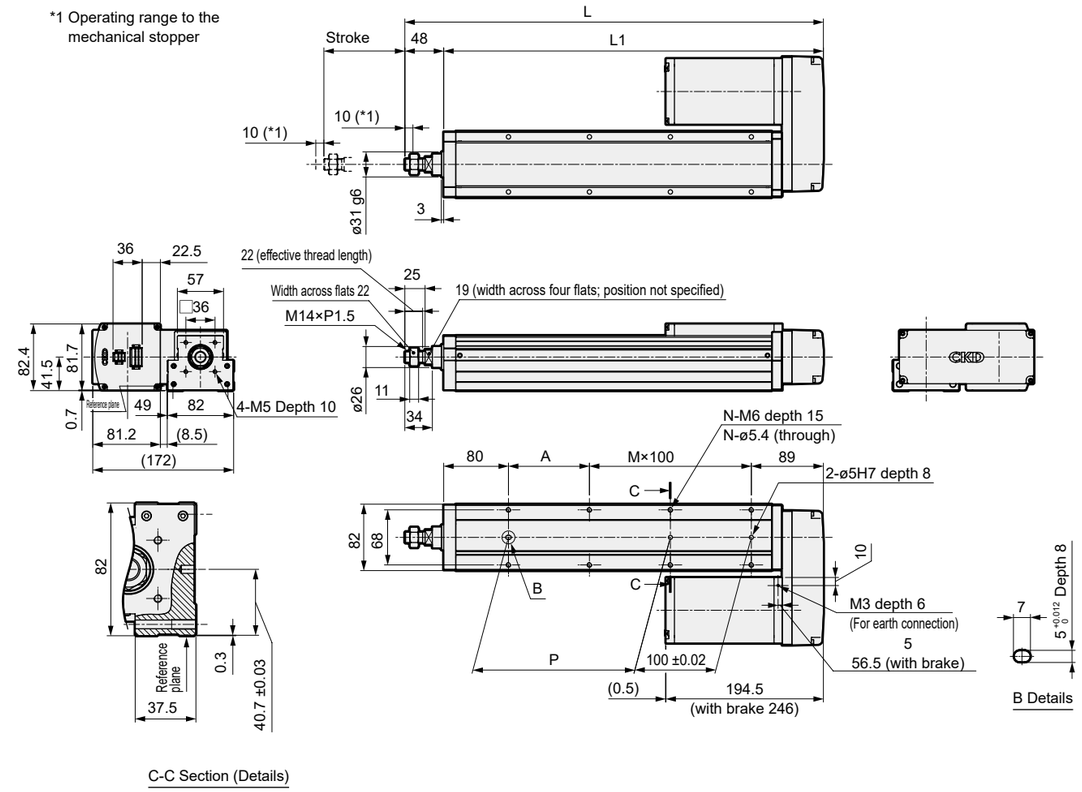


C-C Section (Details)

Stroke Code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke (mm)		250	300	350	400	450	500	550	600	650	700
L		567	617	667	717	767	817	867	917	967	1017
L1		519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
Weight (kg)	Without Brake	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With Brake	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

External Dimension Drawing Motor Left Side Return Mount

● EBR-08□L



Stroke Code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L		367	417	467	517	567	617	667	717	767	817	867	917	967	1017
L1		319	369	419	469	519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without Brake	5.9	6.3	6.7	7.0	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With Brake	7.2	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

MEMO

Rod Type
EBR
Ending

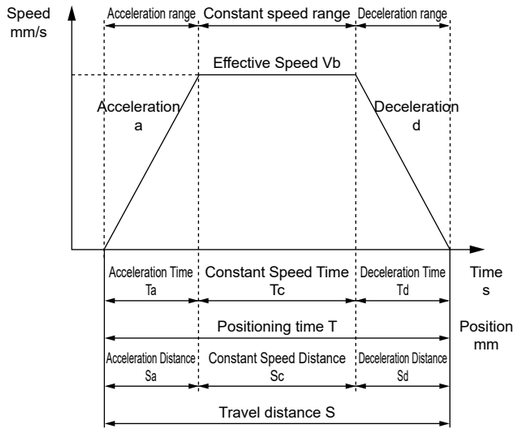
STEP1 Confirmation of Payload

The payload changes depending on the mounting orientation, screw lead, transport speed, acceleration/deceleration, and power supply voltage. Refer to System Table (pages 162 to 165), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

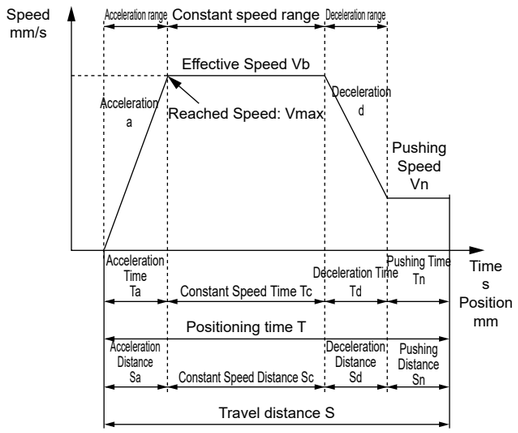
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times S/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	$=(d\times Td^2)/2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2\times a\times d\times(S-Sn+Vn^2/2/d)/(a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

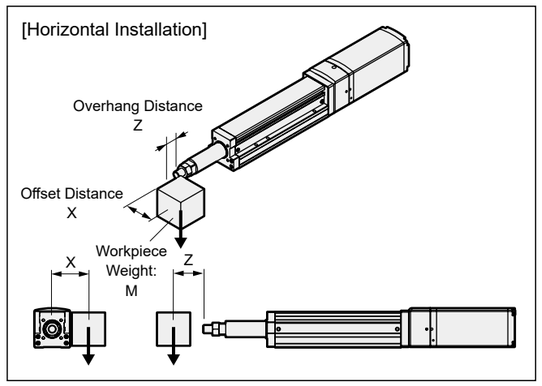
* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. For details, please refer to the specifications P. for each model.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

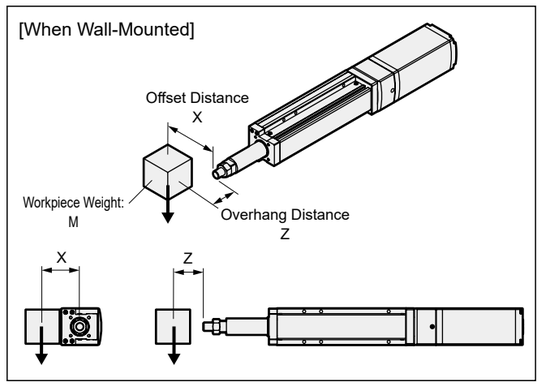
STEP3 Confirmation of Allowable Payload (Guided Rod Type EBR Series)

Confirm that the load weight during operation is within the range of the allowable load weight. If the allowable load weight is exceeded, please increase the size or use an external guide in combination.

Allowable Payload *Reference Value

[Horizontal/Wall-Mounted Installation]



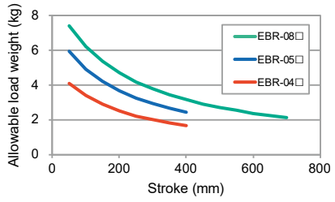


[Offset (X) 0 / Overhang distance (Z) 0 mm]

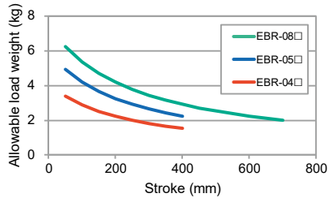
[Offset (X) 0 / Overhang distance (Z) 50 mm]

[Offset (X) 0 / Overhang distance (Z) 100 mm]

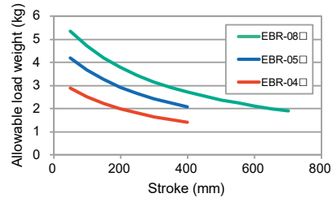
[Offset (X) 100 mm / Overhang distance (Z) 0 mm]



[Offset (X) 100 / Overhang distance (Z) 50 mm]



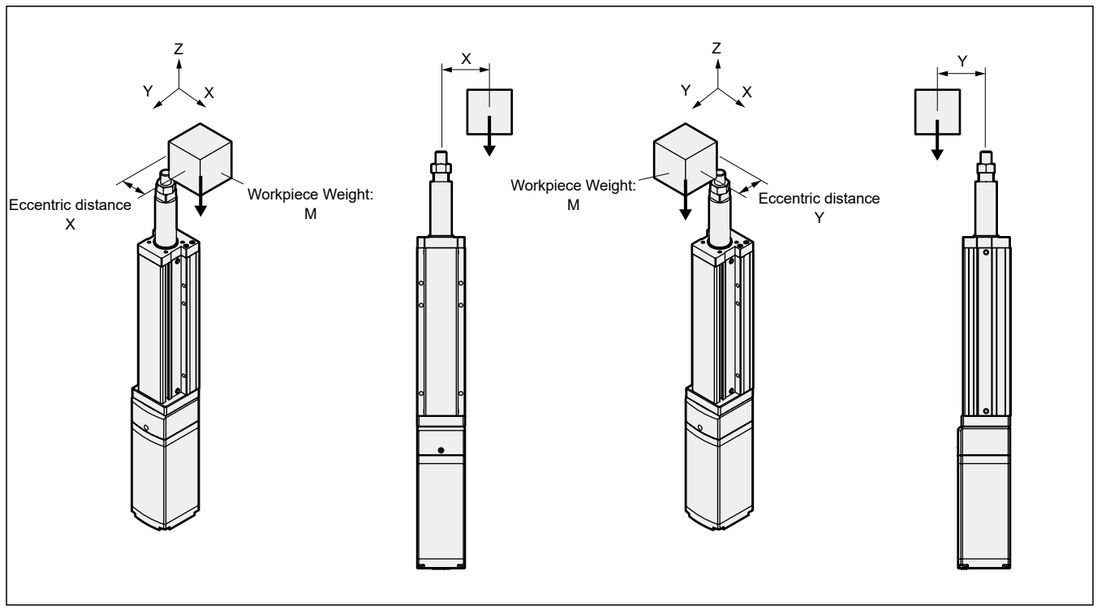
[Offset (X) 100 / Overhang distance (Z) 100 mm]



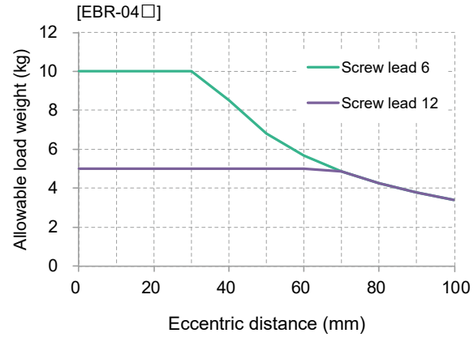
* Value when the actuator's running life is 5,000 km. (Acceleration/deceleration 0.5G, speed 300 mm/s)
Screw lead = 2 mm is the value when the travel life is 1,000 km.

Allowable Payload *Reference Value

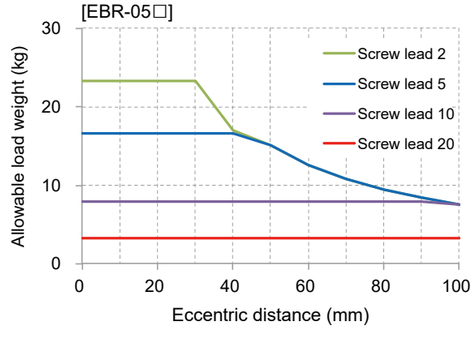
[Vertical Installation]



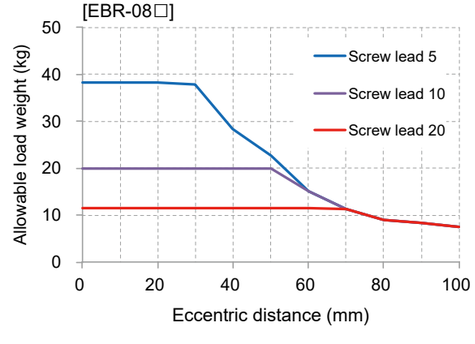
[EBR-04□]



[EBR-05□]

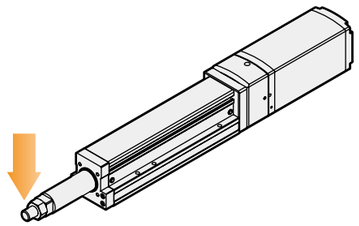


[EBR-08□]

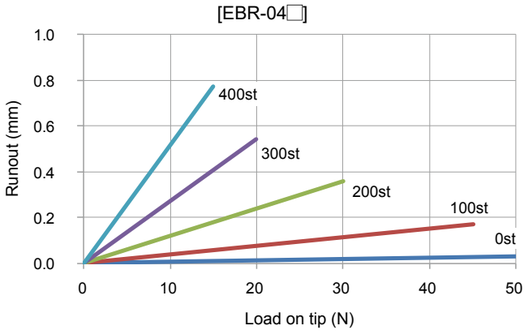


* Acceleration/deceleration 0.5G

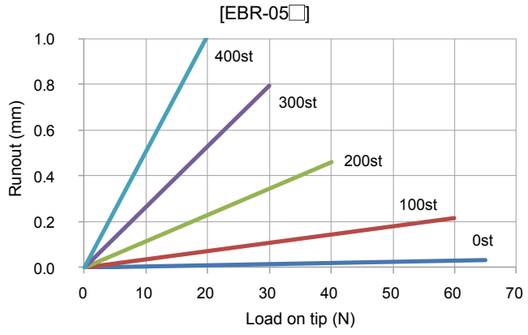
Rod Tip Runout *Reference Value



[EBR-04□]



[EBR-05□]



[EBR-08□]

MEMO

Payload table by speed and acceleration/deceleration

48 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBR-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	33.3		33.3		33.3		33.3	
15	33.3	18.3	33.3	18.3	33.3	13.3	33.3	10.0
50	33.3	18.3	33.3	18.3	33.3	13.3	33.3	10.0
100	33.3	18.3	33.3	18.3	28.3	13.3	28.3	10.0
150	33.3	18.3	28.3	15.8	18.3	11.6	16.6	8.3
200	28.3	18.3	10.0	15.8	8.3	11.6	6.6	8.3
250	20.0	16.6	8.3	13.3	8.3	9.1	6.6	6.3
300	10.0	16.6	3.3	13.3		9.1		6.3
350	3.3	16.6		9.1		8.3		5.0
400		16.6		9.1		8.3		5.0
500		8.3		8.3		5.0		3.3
600		3.3		3.3		3.3		

■ EBR-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20	0.7 5	10	20	1.0 5	10	20
2	80.0				80.0									
6	80.0	60.0			80.0	60.0			60.0			60.0		
12	80.0	60.0	50.0		80.0	60.0	38.3		60.0	38.3		60.0	35.0	
25	80.0	60.0	50.0	20.0	80.0	60.0	38.3	18.3	60.0	38.3	18.3	60.0	35.0	15.0
30	80.0	60.0	50.0	20.0	80.0	60.0	38.3	18.3	60.0	38.3	18.3	60.0	35.0	15.0
50	68.3	60.0	50.0	20.0	68.3	60.0	38.3	18.3	60.0	38.3	18.3	60.0	35.0	15.0
70	68.3	60.0	50.0	20.0	60.0	55.0	38.3	18.3	55.0	31.6	18.3	55.0	23.3	15.0
75	48.3	60.0	50.0	20.0	23.3	55.0	38.3	18.3	55.0	31.6	18.3	55.0	23.3	15.0
90	48.3	60.0	50.0	20.0	23.3	55.0	35.0	18.3	55.0	28.3	18.3	55.0	21.6	15.0
100	48.3	60.0	50.0	20.0	13.3	55.0	35.0	18.3	55.0	28.3	18.3	55.0	21.6	15.0
110	36.6	60.0	50.0	20.0		40.0	33.3	18.3	38.3	23.3	13.3	38.3	20.0	13.3
120	31.6	60.0	50.0	20.0		40.0	33.3	18.3	38.3	23.3	13.3	38.3	20.0	13.3
130	28.3	60.0	50.0	20.0		40.0	33.3	18.3	38.3	23.3	13.3	38.3	20.0	13.3
150		60.0	50.0	20.0		40.0	33.3	18.3	38.3	23.3	13.3	38.3	20.0	13.3
200		60.0	50.0	20.0		38.3	33.3	18.3	35.0	23.3	13.3	21.6	20.0	13.3
225		60.0	35.0	20.0		35.0	23.3	18.3	18.3	21.6	11.6	10.0	18.3	11.6
250		55.0	35.0	20.0		33.3	23.3	18.3	18.3	21.6	11.6	10.0	18.3	11.6
275		50.0	35.0	20.0		21.6	23.3	18.3	11.6	21.6	11.6	1.6	18.3	11.6
300		36.6	35.0	20.0		18.3	23.3	18.3	8.3	21.6	11.6	1.6	18.3	11.6
330		16.6	20.0	20.0		6.6	18.3	18.3	1.6	12.5	10.0		11.6	10.0
400			20.0	20.0			18.3	18.3		12.5	10.0		11.6	10.0
500			10.0	20.0			10.0	16.6		10.0	10.0		5.0	8.3
600			1.6	19.1			1.6	13.3		1.6	10.0		1.6	5.8
650				15.0				10.0			6.6			3.3
800				11.6				6.6			1.6			1.6

■ EBR-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	68.3	
25	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	28.3	80.0	68.3	26.6
50	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	28.3	80.0	68.3	26.6
75	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	28.3	51.6	68.3	26.6
100	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	28.3	20.0	68.3	26.6
125	50.0	70.0	35.0	31.6	70.0	35.0	23.3	70.0	26.6	20.0	50.0	26.6
150	20.0	70.0	35.0	20.0	70.0	35.0	8.3	70.0	26.6	3.3	50.0	26.6
175	18.3	70.0	35.0	8.3	43.3	35.0		31.6	26.6		23.3	26.6
200	18.3	70.0	35.0		43.3	35.0		31.6	26.6		23.3	26.6
225	18.3	68.3	35.0		31.6	35.0		21.6	23.3		10.0	16.6
250		68.3	35.0		31.6	35.0		21.6	23.3		10.0	16.6
300		50.0	35.0		28.3	35.0		18.3	23.3		10.0	16.6
350		35.0	35.0		25.0	26.6		15.0	20.0		1.6	11.6
400		35.0	35.0		21.6	26.6		11.6	20.0			11.6
450		25.0	16.6		18.3	16.6		6.6	13.3			5.0
500			16.6			16.6			13.3			5.0
600			16.6			16.6			10.0			3.3
700			16.6			13.3			8.3			1.6
800			16.6			10.0			8.3			
900			8.3			8.3			5.0			

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBR-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 6	12	0.7 6	12	1.0 6	12
7	33.3		33.3		33.3		33.3	
15	33.3	18.3	33.3	11.6	33.3	11.6	33.3	10.0
50	33.3	18.3	33.3	11.6	33.3	11.6	33.3	10.0
100	33.3	18.3	33.3	11.6	28.3	11.6	28.3	10.0
150	33.3	18.3	28.3	11.6	18.3	11.6	15.0	8.3
200	28.3	18.3	10.0	11.6	8.3	11.6	6.6	8.3
250	20.0	16.6	8.3	11.6	8.3	9.1	6.6	6.6
300	10.0	16.6	3.3	11.6		9.1		6.6
350	3.3	16.6		11.6		8.3		5.0
400		16.6		11.6		8.3		5.0
500		8.3		6.6		3.3		3.3
600		3.3		1.6		1.6		

■ EBR-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 2	5	10	20	0.7 5	10	20	1.0 5	10	20
2	80.0				80.0									
6	80.0	60.0			80.0	60.0			60.0			60.0		
12	80.0	60.0	36.6		80.0	60.0	36.6		60.0	33.3		60.0	26.6	
25	80.0	60.0	36.6	18.3	80.0	60.0	36.6	11.6	60.0	33.3	10.0	60.0	26.6	8.3
30	80.0	60.0	36.6	18.3	80.0	60.0	36.6	11.6	60.0	33.3	10.0	60.0	26.6	8.3
50	68.3	60.0	36.6	18.3	68.3	60.0	36.6	11.6	60.0	33.3	10.0	60.0	26.6	8.3
70	68.3	60.0	35.0	18.3	60.0	53.3	35.0	11.6	50.0	31.6	10.0	43.3	23.3	8.3
75	48.3	60.0	35.0	18.3	23.3	53.3	35.0	11.6	50.0	31.6	10.0	43.3	23.3	8.3
90	48.3	60.0	35.0	18.3	23.3	53.3	35.0	11.6	50.0	28.3	10.0	43.3	21.6	8.3
100	48.3	60.0	35.0	18.3	21.6	53.3	35.0	11.6	50.0	28.3	10.0	43.3	21.6	8.3
110	36.6	60.0	35.0	16.6		36.6	20.0	11.6	26.6	15.0	10.0	23.3	15.0	8.3
120	30.0	60.0	35.0	16.6		36.6	20.0	11.6	26.6	15.0	10.0	23.3	15.0	8.3
150		60.0	35.0	16.6		36.6	20.0	11.6	26.6	15.0	10.0	23.3	15.0	8.3
200		60.0	35.0	16.6		31.6	20.0	11.6	16.6	15.0	10.0	13.3	15.0	8.3
225		43.3	35.0	16.6		30.0	20.0	11.6	10.0	15.0	10.0	3.3	10.0	8.3
250		40.0	35.0	16.6		20.0	20.0	11.6	10.0	15.0	10.0	3.3	10.0	8.3
275		36.6	35.0	16.6		18.3	20.0	11.6	6.6	15.0	10.0		10.0	8.3
300		26.6	35.0	16.6		8.3	20.0	11.6	3.3	15.0	10.0		10.0	8.3
330		1.6	20.0	16.6		1.6	16.6	11.6		11.6	10.0		5.0	8.3
400			20.0	16.6			16.6	11.6		11.6	10.0		5.0	8.3
500			10.0	16.6			10.0	11.6		8.3	10.0			5.8
600				16.6				11.6			8.3			1.6
650				15.0				10.0			6.6			1.6
800				11.6				6.6			1.6			0.8

■ EBR-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 5	10	20	0.7 5	10	20	1.0 5	10	20
6	80.0			80.0			80.0			80.0		
12	80.0	70.0		80.0	70.0		80.0	70.0		80.0	60.0	
25	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	23.3	80.0	60.0	23.3
50	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	23.3	80.0	60.0	23.3
75	80.0	70.0	35.0	80.0	70.0	35.0	80.0	70.0	23.3	51.6	60.0	23.3
100	80.0	70.0	35.0	68.3	70.0	35.0	68.3	70.0	23.3	20.0	60.0	23.3
125	50.0	70.0	35.0	26.6	70.0	35.0	18.3	61.6	23.3	6.6	46.6	23.3
150	20.0	70.0	35.0	15.0	70.0	35.0		61.6	23.3		46.6	23.3
200	18.3	70.0	35.0		40.0	35.0		26.6	23.3		23.3	23.3
225	1.6	68.3	35.0		23.3	35.0		18.3	18.3		10.0	16.6
250		68.3	35.0		23.3	35.0		18.3	18.3		10.0	16.6
300		43.3	35.0		18.3	35.0		11.6	18.3			16.6
350		33.3	35.0		15.0	26.6		8.3	18.3			11.6
400		23.3	35.0		11.6	26.6		3.3	18.3			11.6
450		10.0	16.6			16.6			11.6			5.0
500			16.6			16.6			11.6			5.0
600			16.6			16.6			8.3			1.6
700			16.6			11.6			5.0			0.8

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBR-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	10.0		8.3	
15	10.0	5.0	8.3	4.1
50	10.0	5.0	8.3	4.1
100	8.3	5.0	8.3	4.1
150	8.3	5.0	6.6	4.1
200	6.6	5.0	5.0	4.1
250	5.0	4.1	3.3	3.3
300	3.3	4.1	1.6	3.3
350	1.6	3.3		3.3
400		3.3		3.3
500		1.6		2.5
600		1.6		0.8

■ EBR-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	10	20
2	24.0				23.3			
6	24.0	16.6			23.3	16.6		
12	24.0	16.6	10.0		23.3	16.6	7.9	
25	24.0	16.6	10.0	4.1	23.3	16.6	7.9	4.1
50	23.3	16.6	10.0	4.1	23.3	16.6	7.9	4.1
60	18.3	15.0	10.0	4.1	18.3	13.3	7.9	4.1
70	15.0	15.0	10.0	4.1	15.0	13.3	7.9	4.1
80	13.3	15.0	10.0	4.1	8.3	13.3	7.9	4.1
90	13.3	15.0	10.0	4.1	0.8	13.3	7.9	4.1
100	13.3	15.0	10.0	4.1		13.3	7.9	4.1
110	13.3	11.6	10.0	4.1		11.6	7.5	4.1
120	13.3	11.6	10.0	4.1		11.6	7.5	4.1
150		11.6	10.0	4.1		11.6	7.5	4.1
200		11.6	10.0	4.1		8.3	7.5	4.1
250		10.0	7.5	4.1		6.6	5.4	4.1
275		8.3	7.5	4.1		3.3	5.4	4.1
300		5.0	7.5	4.1		3.3	5.4	4.1
350			5.8	3.7			3.7	3.7
400			5.0	3.7			3.7	3.7
500			4.1	3.3			2.5	3.3
600			0.8	2.5			0.4	2.5
700				2.0				2.0
800				1.6				

■ EBR-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	38.3			38.3		
12	38.3	18.3		38.3	20.0	
25	38.3	18.3	11.6	38.3	20.0	11.6
50	38.3	18.3	11.6	38.3	20.0	11.6
75	35.0	18.3	11.6	35.0	20.0	11.6
100	26.6	18.3	11.6	26.6	20.0	11.6
125	23.3	15.0	11.6	26.6	15.0	10.0
150	18.3	15.0	11.6	21.6	15.0	10.0
200	15.0	11.6	11.6	16.6	11.6	10.0
225	15.0	11.6	10.0	11.6	11.6	8.3
250		11.6	10.0		11.6	8.3
300		11.6	10.0		11.6	8.3
350		10.0	3.3		10.0	2.5
400		5.0	3.3		5.0	2.5
450		3.3	1.6		3.3	1.6
500			1.6			1.6
600			1.6			1.6
700			1.6			1.6
800			1.6			1.6
900			0.8			0.8

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBR-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.5 Screw Lead (mm) 6	12
7	9.1		8.3	
15	9.1	5.0	8.3	4.1
100	9.1	5.0	8.3	4.1
150	8.3	5.0	5.8	4.1
200	6.6	5.0	4.1	4.1
250	3.7	4.1	2.0	3.3
300	2.0	4.1	0.8	3.3
400		3.3		3.3
500		1.6		1.6
600		0.8		0.4

■ EBR-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	10	20
2	24.0				23.3			
6	24.0	16.6			23.3	16.6		
12	24.0	16.6	8.3		23.3	16.6	7.9	
25	24.0	16.6	8.3	4.1	23.3	16.6	7.9	3.3
50	23.3	16.6	8.3	4.1	23.3	16.6	7.9	3.3
60	18.3	13.3	8.3	4.1	18.3	13.3	7.9	3.3
70	15.0	13.3	8.3	4.1	15.0	13.3	7.9	3.3
75	13.3	13.3	8.3	4.1	8.3	13.3	7.9	3.3
80	11.6	13.3	8.3	4.1	8.3	13.3	7.9	3.3
90	11.6	13.3	8.3	4.1	0.8	13.3	7.9	3.3
100	11.6	13.3	8.3	4.1		13.3	7.9	3.3
110	11.6	11.6	6.6	4.1		11.6	7.5	3.3
120	5.0	11.6	6.6	4.1		11.6	7.5	3.3
150		11.6	6.6	4.1		11.6	7.5	3.3
200		11.6	6.6	4.1		8.3	7.5	3.3
250		10.0	5.8	4.1		5.0	5.4	2.5
275		6.6	5.8	4.1		0.8	5.4	2.5
300		0.8	5.8	4.1		0.8	5.4	2.5
350			5.0	3.7			3.7	2.5
400			5.0	3.7			3.7	2.5
500			4.1	3.3			2.5	1.6
600				2.5				1.6
700				2.0				1.6

■ EBR-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.5 Screw Lead (mm) 5	10	20
6	38.3			38.3		
12	38.3	18.3		38.3	18.3	
25	38.3	18.3	8.3	38.3	18.3	8.3
50	38.3	18.3	8.3	38.3	18.3	8.3
75	35.0	18.3	8.3	35.0	18.3	8.3
100	26.6	18.3	8.3	26.6	18.3	8.3
125	20.0	15.0	8.3	20.0	15.0	8.3
150	11.6	15.0	8.3	11.6	15.0	8.3
165	6.6	11.6	8.3	5.0	11.6	8.3
175	5.0	11.6	8.3	5.0	11.6	8.3
200	3.3	11.6	8.3	3.3	11.6	8.3
250		10.0	8.3		8.3	8.3
300		6.6	8.3		5.0	8.3
350		5.0	3.3		3.3	2.5
400		3.3	3.3		1.6	2.5
450		0.8	1.6		0.8	1.6
500			1.6			1.6
600			1.6			1.6
700			1.6			1.6

Payload table by speed and acceleration/deceleration

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The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBR-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	33.3		26.6	
15	33.3	18.3	26.6	6.6
50	33.3	18.3	26.6	6.6
100	33.3	18.3	15.8	6.6
150	14.1	15.4	1.6	6.6
200	1.6	15.4		6.6
250	1.6	4.5		1.6
300		4.5		1.6
400		4.5		0.8
500		1.6		

■ EBR-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	0.7 Screw Lead (mm) 10	20
2	80.0				80.0			
6	80.0	60.0			80.0	60.0		
12	80.0	60.0	50.0		80.0	60.0	26.6	
25	80.0	60.0	50.0	20.0	80.0	60.0	26.6	18.3
50	73.3	60.0	50.0	20.0	46.6	60.0	26.6	18.3
60	73.3	60.0	50.0	20.0	10.0	20.0	16.6	15.8
70	43.3	60.0	50.0	20.0		20.0	16.6	15.8
80	20.0	60.0	50.0	20.0		20.0	16.6	15.8
100		60.0	50.0	20.0		20.0	16.6	15.8
150		43.3	35.0	20.0		5.0	11.6	13.3
200		20.8	35.0	20.0			11.6	13.3
225		15.0	11.6	20.0			3.3	10.0
250		10.0	11.6	20.0			3.3	10.0
275		8.3	11.6	20.0			3.3	10.0
300			11.6	20.0			3.3	10.0
400			7.5	13.3			1.6	5.0
500			1.6	7.5				1.6
600				3.3				
700				0.4				

■ EBR-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	23.3	80.0	70.0	23.3
50	80.0	70.0	23.3	80.0	70.0	23.3
75	66.6	70.0	23.3	66.6	33.3	23.3
100	36.6	70.0	23.3	3.3	33.3	23.3
150	3.3	35.0	18.3		5.0	16.6
200		25.0	18.3			16.6
250		10.8	18.3			10.0
300		1.6	18.3			10.0
400			10.0			5.0
500			1.6			1.6

Payload table by speed and acceleration/deceleration

24 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Horizontal Installation]

■ EBR-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 6	12	0.7 Screw Lead (mm) 6	12
7	33.3		26.6	
15	33.3	18.3	26.6	6.6
50	33.3	18.3	26.6	6.6
100	33.3	18.3	15.8	6.6
150	13.3	15.8	1.6	6.6
200	1.6	15.8		6.6
250		5.0		1.6
300		5.0		1.6
350		0.8		
400		0.8		

■ EBR-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 2	5	10	20	0.5 Screw Lead (mm) 2	5	0.7 Screw Lead (mm) 10	20
2	80.0				80.0			
6	80.0	60.0			80.0	60.0		
12	80.0	60.0	36.6		80.0	60.0	26.6	
25	80.0	60.0	36.6	18.3	80.0	60.0	26.6	10.0
50	41.6	60.0	36.6	18.3	41.6	60.0	26.6	10.0
60	20.0	53.3	36.6	18.3	10.0	20.0	8.3	10.0
80	20.0	53.3	36.6	18.3		20.0	8.3	10.0
100		53.3	36.6	18.3		20.0	8.3	10.0
150		41.6	35.0	18.3		5.0	5.0	10.0
200		15.0	35.0	18.3			5.0	10.0
225		8.3	11.6	18.3			3.3	10.0
250		1.6	11.6	18.3			3.3	10.0
300			11.6	18.3			3.3	10.0
400			7.5	13.3				5.0
500				6.6				1.6
600				3.3				
700				0.4				

■ EBR-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 Screw Lead (mm) 5	10	20	0.7 Screw Lead (mm) 5	10	20
6	80.0			80.0		
12	80.0	70.0		80.0	70.0	
25	80.0	70.0	23.3	80.0	70.0	18.3
50	80.0	70.0	23.3	80.0	70.0	18.3
75	66.6	58.3	23.3	21.6	33.3	18.3
100	36.6	58.3	23.3		33.3	18.3
150		33.3	16.6		5.0	8.3
200		11.6	16.6			8.3
300		1.6	10.0			5.0
400			5.0			1.6
500			1.6			

Payload table by speed and acceleration/deceleration

24 VDC

The table below lists the maximum payload by acceleration/deceleration and the maximum operable speed.
Please check the model that meets the operating conditions.

[Vertical Installation]

■ EBR-04ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 6	12
7	9.1	
15	9.1	4.5
50	9.1	4.5
100	7.5	4.5
150	2.9	2.0
200	0.4	2.0
250		0.4
300		0.4

■ EBR-04MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 6	12
7	9.1	
15	9.1	4.5
50	9.1	4.5
100	7.5	4.5
150	2.9	2.0
200	0.4	2.0
250		0.8

■ EBR-05ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 2	5	10	20
2	24.0			
6	24.0	15.0		
12	24.0	15.0	6.6	
25	24.0	15.0	6.6	4.1
50	15.0	15.0	6.6	4.1
60	3.3	11.0	6.6	4.1
100		11.0	6.6	4.1
150		8.3	5.8	2.5
200		3.3	5.8	2.5
250		1.6	2.5	2.5
300			2.5	2.5
400			0.8	1.6
500				0.8

■ EBR-05MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 2	5	10	20
2	24.0			
6	24.0	15.0		
12	24.0	15.0	6.6	
25	24.0	15.0	6.6	4.1
50	3.3	15.0	6.6	4.1
100		15.0	6.6	4.1
150		3.3	5.8	3.3
200		1.6	5.8	3.3
300			2.5	3.3
400			0.8	0.8
450				0.8

■ EBR-08ME (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 5	10	20
6	35.0		
12	35.0	15.0	
25	35.0	15.0	10.0
50	35.0	15.0	10.0
75	20.0	15.0	10.0
100	8.3	15.0	10.0
125	0.8	6.6	6.6
150		6.6	6.6
200		4.1	6.6
250		1.6	3.3
300		0.8	1.6
350			0.8
400			0.4
450			0.4

■ EBR-08MR/D/L (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.3 — Screw Lead (mm) 5	10	20
6	35.0		
12	35.0	15.0	
25	35.0	15.0	8.3
50	35.0	15.0	8.3
75	10.0	15.0	8.3
100	0.8	15.0	8.3
150		5.0	6.6
200		1.6	6.6
250			3.3
300			1.6
400			0.8
450			0.8

Stroke and Max. Speed

■ 48 VDC (mm/s)

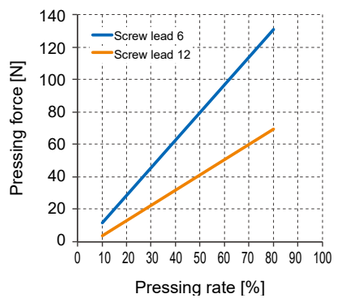
Model No.	Motor Mounting Direction	Screw Lead	Stroke 50 to 200	250	300	350	400	450	500	550	600	650	700
EBR-04ME	**Straight**	6	350	300	250								
		12	600		490								
EBR-04MR/D/L	**Reverse Parallel**	6	350	300	250								
		12	600		490								
EBR-05ME	**Straight**	2	130		85								
		5	330		210								
		10	600		420								
		20	800										
EBR-05MR/D/L	**Reverse Parallel**	2	120		85								
		5	330		210								
		10	500		420								
		20	700										
EBR-08ME	**Straight**	5	225			200							
		10	450			400							
		20	900	600									
EBR-08MR/D/L	**Reverse Parallel**	5	225			200							
		10	450			400							
		20	700	600									

■ 24 VDC (mm/s)

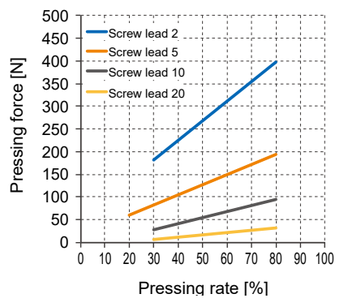
Model No.	Motor Mounting Direction	Screw Lead	Stroke 50 to 200	250	300	350	400	450	500	550	600	650	700
EBR-04ME	**Straight**	6	250										
		12	500		490								
EBR-04MR/D/L	**Reverse Parallel**	6	200										
		12	400										
EBR-05ME	**Straight**	2	80										
		5	275		210								
		10	500		420								
		20	700										
EBR-05MR/D/L	**Reverse Parallel**	2	80										
		5	250		210								
		10	400										
		20	700										
EBR-08ME	**Straight**	5	150										
		10	300										
		20	500										
EBR-08MR/D/L	**Reverse Parallel**	5	100										
		10	300										
		20	500										

Pushing Force

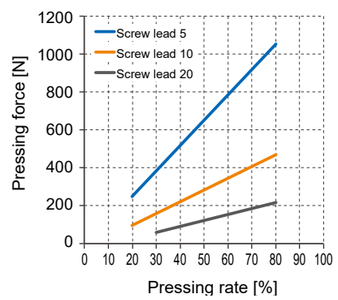
[EBR-04M (Connected Controller ECR)]



[EBR-05M (Connected Controller ECR)]



[EBR-08M (Connected Controller ECR)]



Maintenance Parts

Maintenance Parts (ECMG/ECG Motor Unit)

		Model No.	Applicable Models
Without Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-NB	EBR-04GE
		EJSG-04R-MOTORUNIT-NB	EBR-04GR/D/L
		EJSG-05E-MOTORUNIT-NB	EBR-05GE
		EJSG-05R-MOTORUNIT-NB	EBR-05GR/D/L
		EJSG-08E-MOTORUNIT-NB	EBR-08GE
		EJSG-08R-MOTORUNIT-NB	EBR-08GR/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-NC	EBR-04GE
		EJSG-04R-MOTORUNIT-NC	EBR-04GR/D/L
		EJSG-05E-MOTORUNIT-NC	EBR-05GE
		EJSG-05R-MOTORUNIT-NC	EBR-05GR/D/L
		EJSG-08E-MOTORUNIT-NC	EBR-08GE
		EJSG-08R-MOTORUNIT-NC	EBR-08GR/D/L
With Brake	Absolute Encoder	EJSG-04E-MOTORUNIT-BB	EBR-04GE
		EJSG-04R-MOTORUNIT-BB	EBR-04GR/D/L
		EJSG-05E-MOTORUNIT-BB	EBR-05GE
		EJSG-05R-MOTORUNIT-BB	EBR-05GR/D/L
		EJSG-08E-MOTORUNIT-BB	EBR-08GE
		EJSG-08R-MOTORUNIT-BB	EBR-08GR/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-BC	EBR-04GE
		EJSG-04R-MOTORUNIT-BC	EBR-04GR/D/L
		EJSG-05E-MOTORUNIT-BC	EBR-05GE
		EJSG-05R-MOTORUNIT-BC	EBR-05GR/D/L
		EJSG-08E-MOTORUNIT-BC	EBR-08GE
		EJSG-08R-MOTORUNIT-BC	EBR-08GR/D/L

Maintenance Parts (ECR Motor Unit)

	Model No.	Applicable Models	
Without Brake	EBS-04ME-MOTORUNIT-N	EBR-04ME	Without Brake
	EBS-04MR-MOTORUNIT-N	EBR-04MR/D/L	
	EBS-05ME-MOTORUNIT-N	EBR-05ME	
	EBS-05MR-MOTORUNIT-N	EBR-05MR/D/L	
	EBS-08ME-MOTORUNIT-N	EBR-08ME	
	EBS-08MR-MOTORUNIT-N	EBR-08MR/D/L	
With Brake	EBS-04ME-MOTORUNIT-B	EBR-04ME	With Brake
	EBS-04MR-MOTORUNIT-B	EBR-04MR/D/L	
	EBS-05ME-MOTORUNIT-B	EBR-05ME	
	EBS-05MR-MOTORUNIT-B	EBR-05MR/D/L	
	EBS-08ME-MOTORUNIT-B	EBR-08ME	
	EBS-08MR-MOTORUNIT-B	EBR-08MR/D/L	

Maintenance Parts

Maintenance Parts / Motor Mounting Direction: For right, bottom, and left folded-back type (Timing Belt)

Model No.	Applicable Models
EBS-04MR-BELT	EBR-04□R/D/L
EBS-05MR-BELT	EBR-05□R/D/L
EBS-08MR-BELT	EBR-08□R/D/L

Maintenance Parts (Grease Nozzle)

Model No.	Applicable Models
EBS-NOZZLE	All models

Maintenance Parts (Flange)

Model No.	Applicable Models
EBR-04-FA	EBR-04□
EBR-05-FA	EBR-05□
EBR-08-FA	EBR-08□

To Use This Product Safely

Be sure to read this before use.
For general information on electric actuators, please see Intro 17.

Individual Precautions: Electric Actuator EBR Series

During Design and Selection

⚠ Danger

■ Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■ Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■ When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

⚠ Warning

■ Use the product within its specific specification range.

■ Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■ In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■ Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 80% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■ The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ If using the actuator in an installation other than horizontal, select the one with a brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■ The brake cannot completely hold the actuator in all cases. When performing maintenance on applications that move the slider with an unbalanced load, or when stopping the machine for a long time, if safety needs to be ensured, be sure to bring it to a balanced state or provide a mechanical locking mechanism.

■ When using the actuator in a horizontal/wall-mounted installation, position the motor as high as possible.
If the motor is on the lower side, there is no problem in normal operation, but if it is stopped for a long period of time, the grease may separate and flow into the motor, which may cause a malfunction in rare cases.

■ Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C (10°C to 40°C for EBS-G and EBR-G), Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■ Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Do not use in places with impact or vibration.

■ Do not apply a load to the product that exceeds the allowable value in the selection data.

■ When fixing a workpiece to the rod tip, with the rod retracted to the stroke end, fix the square part of the rod with a wrench, etc., and tighten it so that the rod does not rotate. Do not apply impact to the rod when tightening.

⚠ Caution

■ Please use within a range where the moving table and rod do not collide at the stroke end.

■ Clearly state the maintenance conditions in the equipment's instruction manual.
Depending on the usage status, usage environment, and maintenance, the functions of this product may be significantly degraded, and safety may not be ensured. If maintenance is performed correctly, the product functions can be fully demonstrated.

■ The product is manufactured in accordance with various standards. Never disassemble or modify.

■ Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■ Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■ Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
[In case of ECMG Series]
(□35...12.4 A/unit, □42...12.2 A/unit, □56...12.5 A/unit)
[In case of ECG Series]
(□35...2.4 A/unit, □42...2.7 A/unit, □56...4.0 A/unit)
[In case of ECR Series]
(□35...4.0 A/unit, □42...5.2 A/unit, □56...8.6 A/unit)

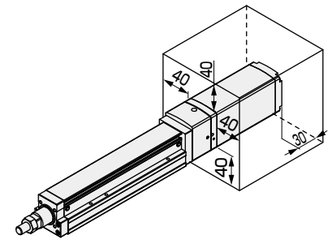
■ Fixed cables cannot be used for applications involving repeated bending, so please fix them so that they do not move easily. For use in locations involving repeated bending, please use a flexible cable.

■ Please use the fixed/flexible cable with a bending radius of 51 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ When the power is turned on, to recognize the home position, if there is an external stopper or holding mechanism (brake, etc.), there is a possibility that an unintended position will be recognized as the home position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

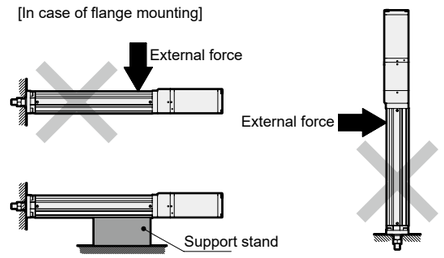
■ When using the EBR-G series, do not apply a magnetic field with a magnetic flux density of 0.7 mT or more to the product surface of the motor section.
This can cause damage to the product or malfunction.

■ When using multiple EBR-G series units, please install them with the motor parts separated by the distance shown in the figure below or more.
Installation at close intervals can cause malfunction.



■ In the case of flange (option) mounting, do not apply external force to the main body. External force may cause malfunction or component damage.
When mounting on the front in a horizontal installation, provide a support base. Depending on the operating conditions and the surrounding installation environment, vibrations may occur and cause damage to the actuator body. If external force is applied to the main body, use the mounting holes on the main body base to fix the main body. Avoid fixing only with the mounting holes on the flange part.

[In case of flange mounting]



■ When transporting or installing the actuator, hold the main body and avoid applying excessive force to the motor part.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

EBR Model Selection Checklist -> **for CKD** (Contact)

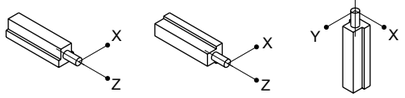
Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

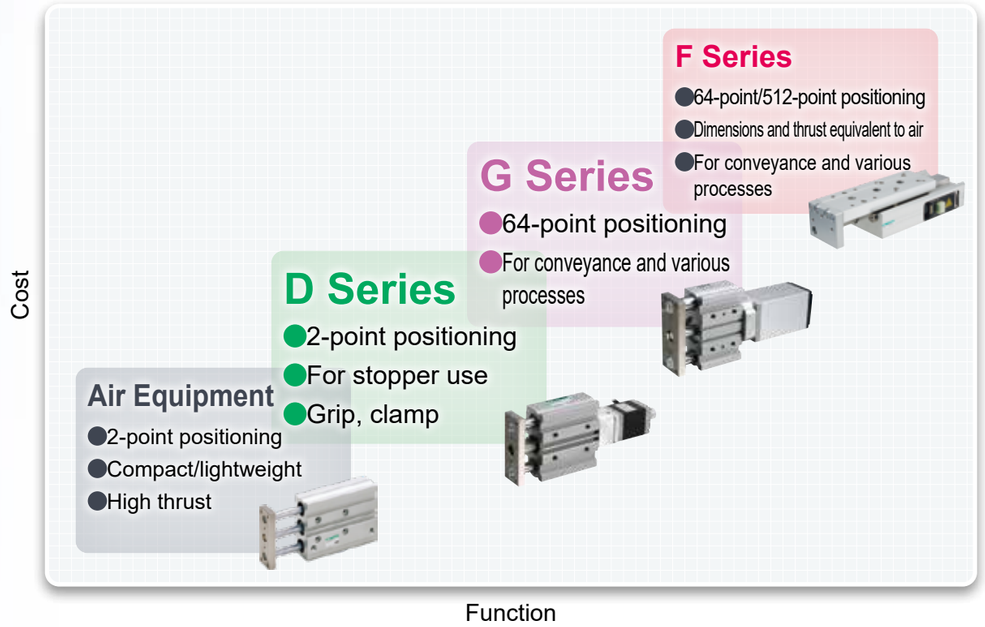
Selection Conditions:

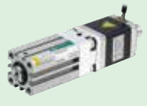
Desired Model	(EBR)-
Basic Specifications	Max. Stroke: mm, Ball screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Set Speed: mm/s
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)
	Repeatability: ± mm
Load Conditions	Rod Type
	Payload: kg
	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other 
	Distance from rod center to load's center of gravity
	Direction X: mm Direction Y: mm Direction Z: mm
	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to the slider center ( )
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

F Series/G Series / D Series

ROBODEX Pulse

Electric actuator that inherits the DNA of pneumatics



	Types						Function						Listed Page
	Rod	Guided	Stopper	Gripper	Table / Rotary		Number of positioning points	Thrust/Speed	Pushing Operation	Space-saving	Position detection method	Number of input points	
F Series							64 points / 512 points	◎	○	◎	Encoder	13 points / 16 points	221
							64 points	◎	○	◎	Encoder	-	221
G Series							64 points	○	○	○	Encoder	13 points	327
D Series (Screw drive)							2 points	○	Not available	○	Cylinder Switch	3 points	413
D Series (Spring drive)							2 points	○	○	○	Cylinder Switch	3 points	481

* Excluding COMON

F, G, D Series

Rod Type

Model Name	Max. Payload		Max. Speed	Max. Stroke	Pushing Force	Listed Page
	Horizontal	Vertical				
GSSD2	14.8 kg	19.6 kg	500 mm/s	100 mm	590 N	**331**
DSSD2	14.8 kg	13.2 kg	180 mm/s	100 mm	Not possible	**417**

Guided Type

Model Name	Max. Payload		Max. Speed	Max. Stroke	Pushing Force	Listed Page
	Horizontal	Vertical				
GSTG	14.8 kg	19.6 kg	500 mm/s	100 mm	590 N	**353**
GSTS	14.8 kg	19.6 kg	500 mm/s	50 mm	590 N	**367**
GSTL	14.8 kg	19.6 kg	500 mm/s	200 mm	590 N	**381**
DSTG	14.8 kg	13.2 kg	180 mm/s	100 mm	Not possible	**439**
DSTS	14.8 kg	13.2 kg	180 mm/s	50 mm	Not possible	**453**
DSTL	14.8 kg	13.2 kg	180 mm/s	200 mm	Not possible	**467**
DMSDG	0.35 kg	0.35 kg	77 mm/s	30 mm	30 N	**485**

Stopper Type

Model Name	Max. Thrust		Max. Speed	Max. Stroke	Pushing Force	Listed Page
	Horizontal	Vertical				
GSTK	192 N	192 N	500 mm/s	30 mm	Not possible	**341**
DSTK	137 N	137 N	180 mm/s	30 mm	Not possible	**427**

Table Type

Model Name	Max. Payload		Max. Speed	Max. Stroke	Pushing Force	Listed Page
	Horizontal	Vertical				
FLCR	11 kg	8.5 kg	300 mm/s	100 mm	210 N	**225**

Rotary Type

Model Name	Max. Torque	Max. Speed	Listed Page
FGRC	4.66 N·m	200 deg/s	**247**

2-Finger Gripper Type

Model Name	Max. Gripping Force	Max. Speed	Max. Stroke	Listed Page
FLSH	65 N (one side)	50 mm/s (one side)	22 mm (Single side 11 mm)	**271**
FFLD	500 N (one side)	30 mm/s (one side)	160 mm (Single side 80 mm)	**295**
DLSH	40 N (one side)	63 mm/s (one side)	22 mm (Single side 11 mm)	**499**

3-Finger Gripper Type

Model Name	Max. Gripping Force	Max. Speed	Max. Stroke	Listed Page
GCKW	29 N (one side)	50 mm/s (one side)	6 mm (Single side 3 mm)	**395**
DCKW	30 N (one side)	70 mm/s (one side)	8 mm (Single side 4 mm)	**509**

F, G, D Series

Electric actuator F Series

CONTENTS

Product Introduction		Intro
■ Table	FLCR	225
■ Rotary	FGRC	247
■ 2-Finger Gripper	FLSH	271
■ 2-Finger Gripper	FFLD	295

F Series

Electric actuator with the same dimensions and performance as the air components

For short-stroke workpiece transfer and positioning

Table Type

FLCR Series

For indexing operations and workpiece reversal

Rotary Type

FGRC Series

For soft handling of various workpieces

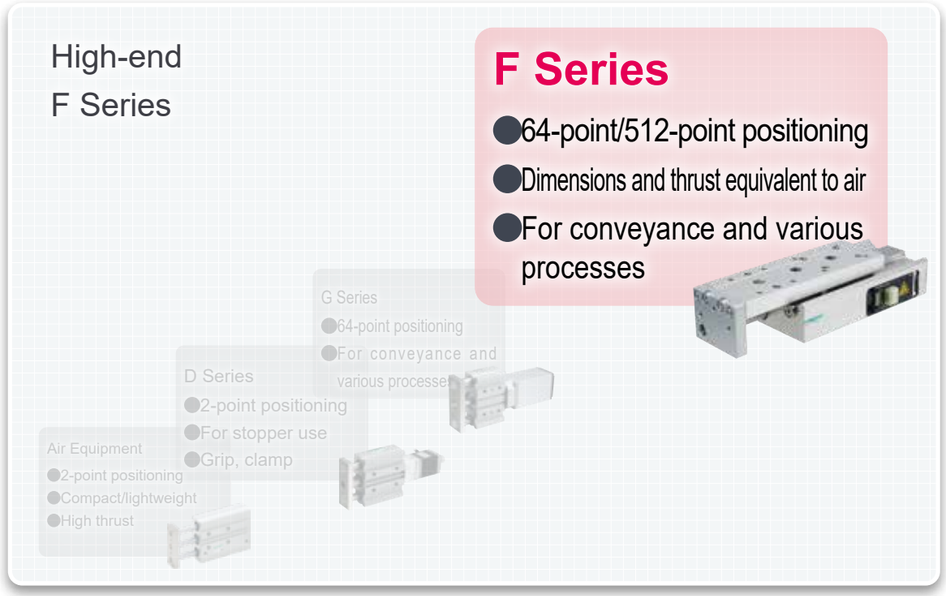
2-Finger Gripper Type

FLSH Series

For robot end-effector applications

2-Finger Gripper Type (with built-in controller)

FFLD Series



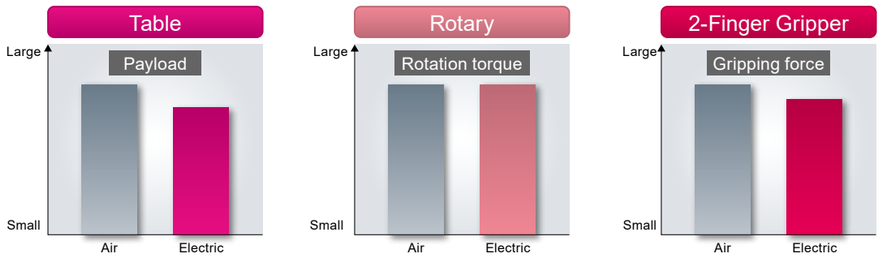
Four types designed to save space and increase thrust are available

Line-up		Size (10 / 16 / 20 / 25 / 30 / 50)	Listed Page
Actuator	Table FLCR	● ● ● ●	225
	Rotary FGRC	● ● ● ●	247
	2-Finger Gripper FLSH	● ● ● ●	271
	2-Finger Gripper (Built-in controller) FFLD	*Refer to P. 295.	295
Application Controller	ECMG	● ● ● ● ● ●	535
	ECG-B	● ● ● ● ● ●	581
	ECR	● ● ● ● ● ●	595

Space saving | Reduced design

High thrust and capacity equivalent to that of air components

Each series can output a force equivalent to that of air equipment.

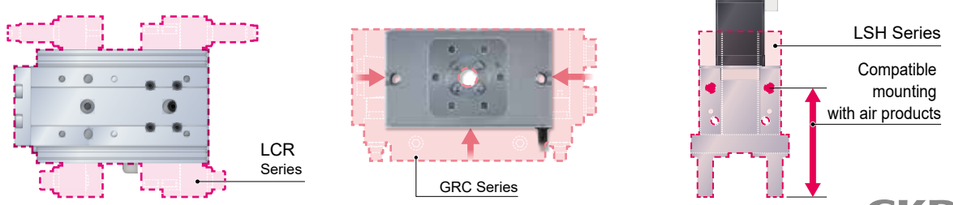


*At air pressure of 0.45 MPa. Compared with the same size.

Space saving | High rigidity | Reduced design

Equivalent dimensions and compact body to air components

Designed to have dimensions equivalent to air equipment.
A compact design with an air feel is possible.



Electric Actuator with Motor Specification

FLCR

Table Type

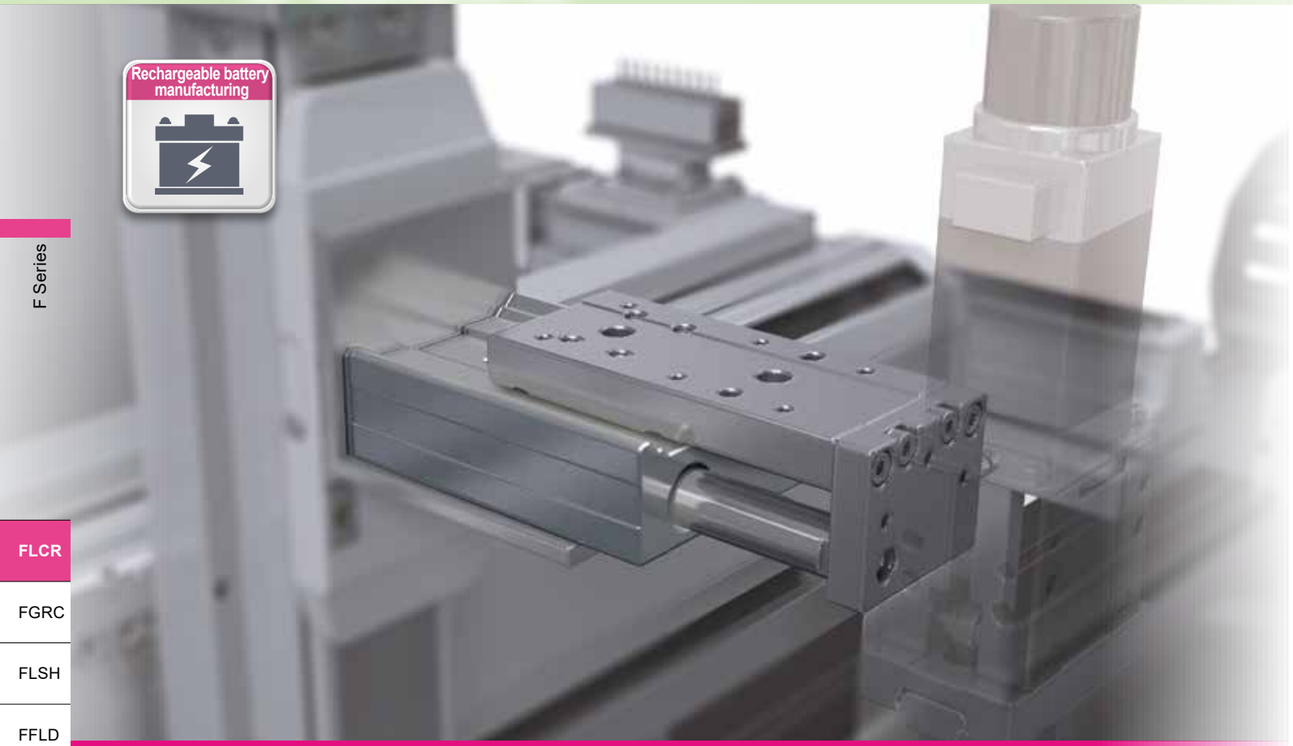
CONTENTS

Product Introduction	226
● Specifications/How to order/Dimensions	
· FLCR-16	228
· FLCR-20	230
· FLCR-25	232
● Model selection	234
● Technical data	235
⚠ Precautions for Use	242
Model Selection Check Sheet	244

FLCR System Table

Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke and max. speed (mm/s)			Max. Pushing Force (N)
			Horizontal	Vertical	50 mm	75 mm	100 mm	
FLCR-16	□20	2	4	4	100 mm/s			90
		8	3	0.5	300			20
FLCR-20	□25	2	5.5	6	100			150
		8	5	0.8	300			55
FLCR-25	□25L	2	11	8.5	100			210
		6	11	3	300			90

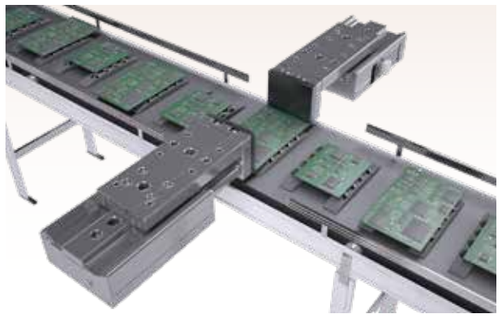
Table FLCR Series



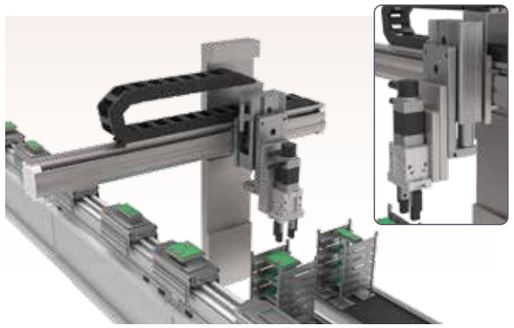
For short-stroke workpiece transfer and positioning

Application examples

Centering of different sized substrate materials

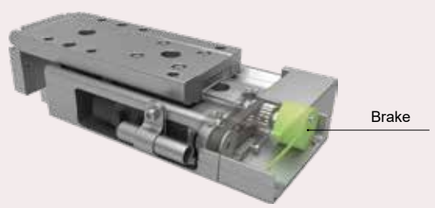


Brake option improves Z-axis safety



Brake Option

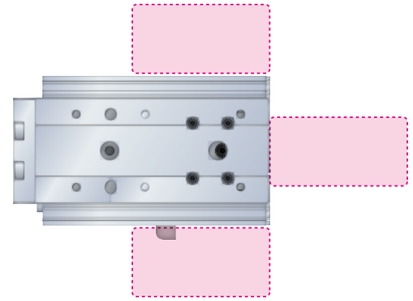
When the power is cut off, the brake part locks and holds the position (non-excitation operating type). Can be used as a safety measure, such as preventing falls on the Z-axis. A lock release unit (sold separately) is also available.



Built-in motor

Space saving

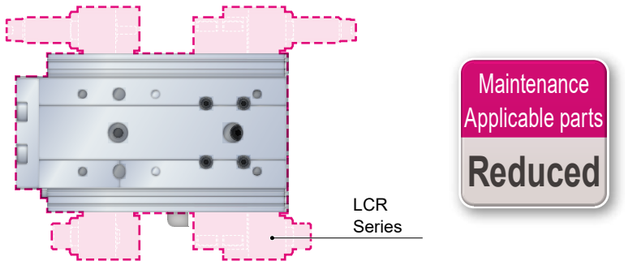
The motor is built into the main body. Since there are no protrusions or returns on the motor part, it is possible to save space in the equipment.



Dimensional compatibility with air products

Space saving | Reduced design | Easy maintenance

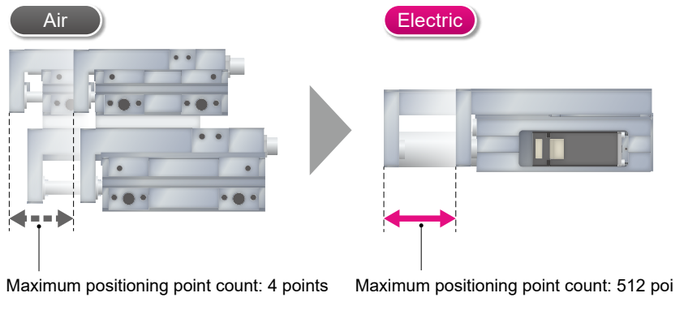
Since it is dimensionally compatible with the air type LCR, a compact design with an air feel is possible.
In addition, since the acceleration and deceleration of the FLCR series can be arbitrarily adjusted, a shock absorber is not required.



Multi-point positioning

Space saving | Productivity improved

The FLCR series can be positioned at any position. Since one actuator can handle multi-product production, it also contributes to space saving.



Electric Actuator Table Type

FLCR-16

□20 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLCR - 16 ❶ | G ❷ | 02 ❸ | 050 ❹ | N ❺ | C ❻ | N - L ❼ | S03 ❽

❶Size
16

❷Connected Controllers *1	
G	ECMG/ECG-B
Blank	ECR

❸Screw lead	
02	2 mm
08	8 mm

❹Stroke	
050	50 mm
075	75 mm
100	100 mm

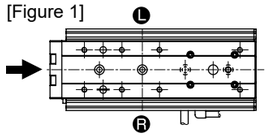
❺Brake	
N	None
B	Yes (ECMG/ECG-B only)

❻Encoder	
C	Incremental Encoder

❼Connector leadout direction *2	
L	Left side
R	Right side

❽Relay cable *3	
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

[Figure 1]



*1 Select the controller from page 529.
*2 Please refer to Figure 1.
*3 For Dimensions diagram of the relay cable, refer to P. 607 for ECR or P. 592 for ECMG/ECG.

Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□20 Stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Ball screw (ø 6) + belt	
Stroke	mm	50, 75, 100	
Screw lead	mm	2	8
Max. Payload kg *1*2	Horizontal	4 (4)	3 (3)
	Vertical	4 (4)	0.5 (0.5)
Operation speed range *3	mm/s	2 to 100 (100)	10 to 300 (250)
Max. Pushing Force	N	90	20
Pushing Operation Speed Range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost Motion	mm	0.1 or less	
Static Allowable Moment N·m		[50st] MP: 17.8, MY: 17.8,MR: 19.2	
		[75st or more]: MP: 37.3, MY: 37.3, MR: 19.2	
Motor Power Supply Voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *4	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding Force N	51	9
Insulation Resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 The values in ( ) are at 24 VDC.
*2 Maximum value at acceleration/deceleration of 0.3 G. Payload varies depending on acceleration/deceleration and speed. Refer to Speed and Payload for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 Applicable only for ECMG and ECG-B.

Speed and Payload

[At 48 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 Screw Lead (mm) 2	8
2	4		4	
10	4	4	4	3
90	4	4	4	3
100	4	4	3.5	3
200		4		3
300		3		3

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 Screw Lead (mm) 2	8
2	4		4	
10	4	0.5	4	0.5
50	4	0.5	4	0.5
60	2.5	0.3	2.5	0.3
70	2	0.3	1.5	0.3
80	1.5	0.3	1.5	0.3
90	1	0.3	0.5	0.3
100	0.4	0.3		0.3
250		0.3		0.3

[At 24 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 Screw Lead (mm) 2	8
2	4		4	
10	4	4	4	3
70	4	4	4	3
80	4	4	2	3
90	2.5	4	1	3
100	2.5	4	0.5	3
200		4		3
250		1		1

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 Screw Lead (mm) 2	8
2	4		4	
10	4	0.5	4	0.5
20	4	0.5	4	0.5
30	4	0.5	3	0.5
40	4	0.5	3	0.5
50	3	0.5	2.5	0.5
60	0.5	0.3	0.4	0.3
70	0.5	0.3	0.4	0.3
80	0.4	0.3		0.3
100		0.3		0.3

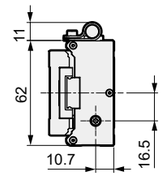
Stroke and Max. Speed

(mm/s)

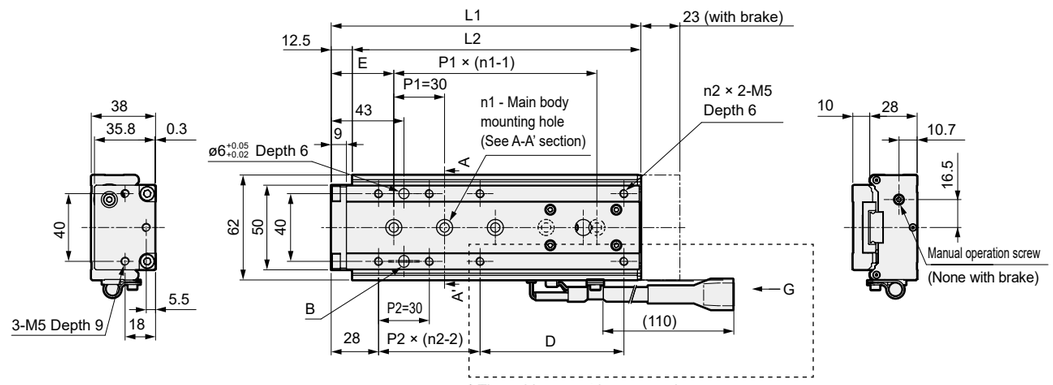
Screw Lead	Power supply voltage	Stroke 50 to 100
2	48 VDC	100
	24 VDC	100
8	48 VDC	300
	24 VDC	250

External Dimensions Drawing

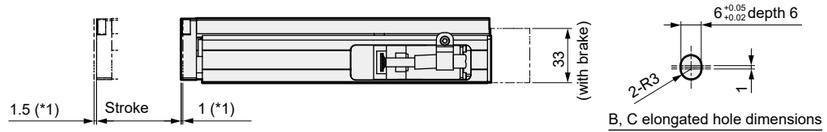
● FLCR-16



In case of connector outlet direction L (left side)

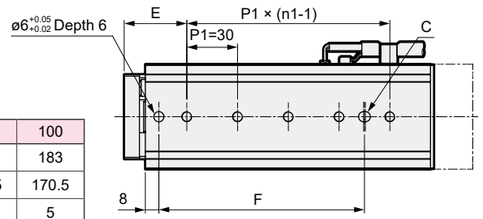


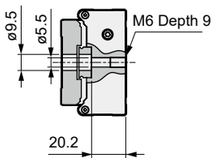
* The cable cannot be removed.



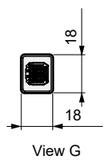
B, C elongated hole dimensions

* 1 Operational range to the mechanical stopper.





A-A' Section



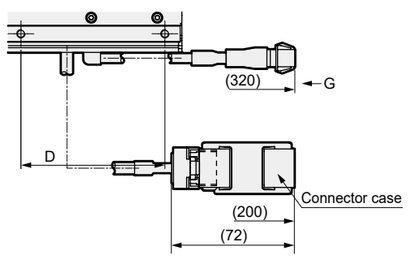
View G

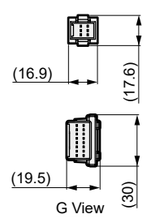
[Dimensions Table by Stroke]

Stroke		50	75	100
L1		116	158	183
L2		103.5	145.5	170.5
n1		3	4	5
n2		3	4	4
D		48	60	85
E		35.5	39	37
F		60	93.5	121.5
Weight kg	Without Brake	0.8	1.1	1.3
	With Brake	0.9	1.2	1.4

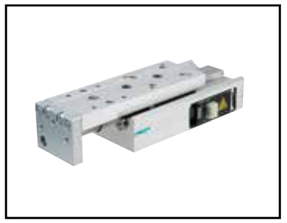
This figure shows the case of connector outlet direction R (right side).

* When an ECR is connected, the dotted line area is as shown below.





G View



Electric Actuator Table Type

FLCR-20

□25. Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLCR - 20 ❶ | G ❷ | 02 ❸ | 050 ❹ | N ❺ | C ❻ | N - L ❼ | S03 ❽

❶Size

20

❷Connected Controllers *1

G	ECMG/ECG-B
Blank	ECR

❸Screw lead

02	2 mm
08	8 mm

❹Stroke

050	50 mm
075	75 mm
100	100 mm

❺Brake

N	None
B	Yes (ECMG/ECG-B only)

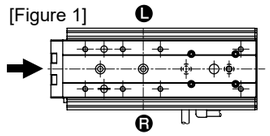
❻Encoder

C	Incremental Encoder

❼Connector leadout direction *2

L	Left side
R	Right side

[Figure 1]



❽Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
*2 Please refer to Figure 1.
*3 Refer to P. 607 for ECR or P. 592 for ECMG/ECG relay cable Dimensions diagram.

Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□25 Stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Ball screw (ø6) + belt	
Stroke	mm	50, 75, 100	
Screw lead	mm	2	8
Max. Payload k *1*2	Horizontal	5.5 (5.5)	5 (5)
	Vertical	6 (6)	0.8 (0.8)
Operation speed range * 3	mm/s	2 to 100 (100)	10 to 300 (300)
Max. Pushing Force	N	150	55
Pushing Operation Speed Range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost Motion	mm	0.1 or less	
Static Allowable Moment N·m		[50st] MP: 31.1, MY: 31.1, MR: 37.6	
		[75st or more]: MP: 56.2, MY: 56.2, MR: 37.6	
Motor Power Supply Voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *4	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding Force N	77	15
Insulation resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 The values in ( ) are at 24 VDC.
*2 Maximum value at acceleration/deceleration of 0.3 G. Payload varies depending on acceleration/deceleration and speed. Refer to Speed and Payload for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 Only compatible with ECMG and ECG-B.

Speed and Payload

[At 48 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 2	8
2	5.5		5.5	
10	5.5	5.5	5.5	5
100	5.5	5.5	5.5	5
300		5		5

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 2	8
2	6		6	
10	6	0.8	6	0.8
50	6	0.8	6	0.8
60	6	0.4	6	0.4
90	6	0.4	6	0.4
100	5.5	0.4	5.5	0.4
300		0.4		0.4

[At 24 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 2	8
2	5.5		5.5	
10	5.5	5.5	5.5	5
75	5.5	5.5	5.5	5
90	5.5	5.5	5	5
100	5.5	5.5	2.5	5
150		5.5		5
250		5.5		4.5
300		3		3

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	8	0.3 2	8
2	6		6	
10	6	0.8	6	0.8
50	6	0.8	6	0.8
60	6	0.4	6	0.4
75	4	0.4	3	0.4
90	2	0.4	2	0.4
100	1.5	0.4	1.5	0.4
200		0.4		0.4

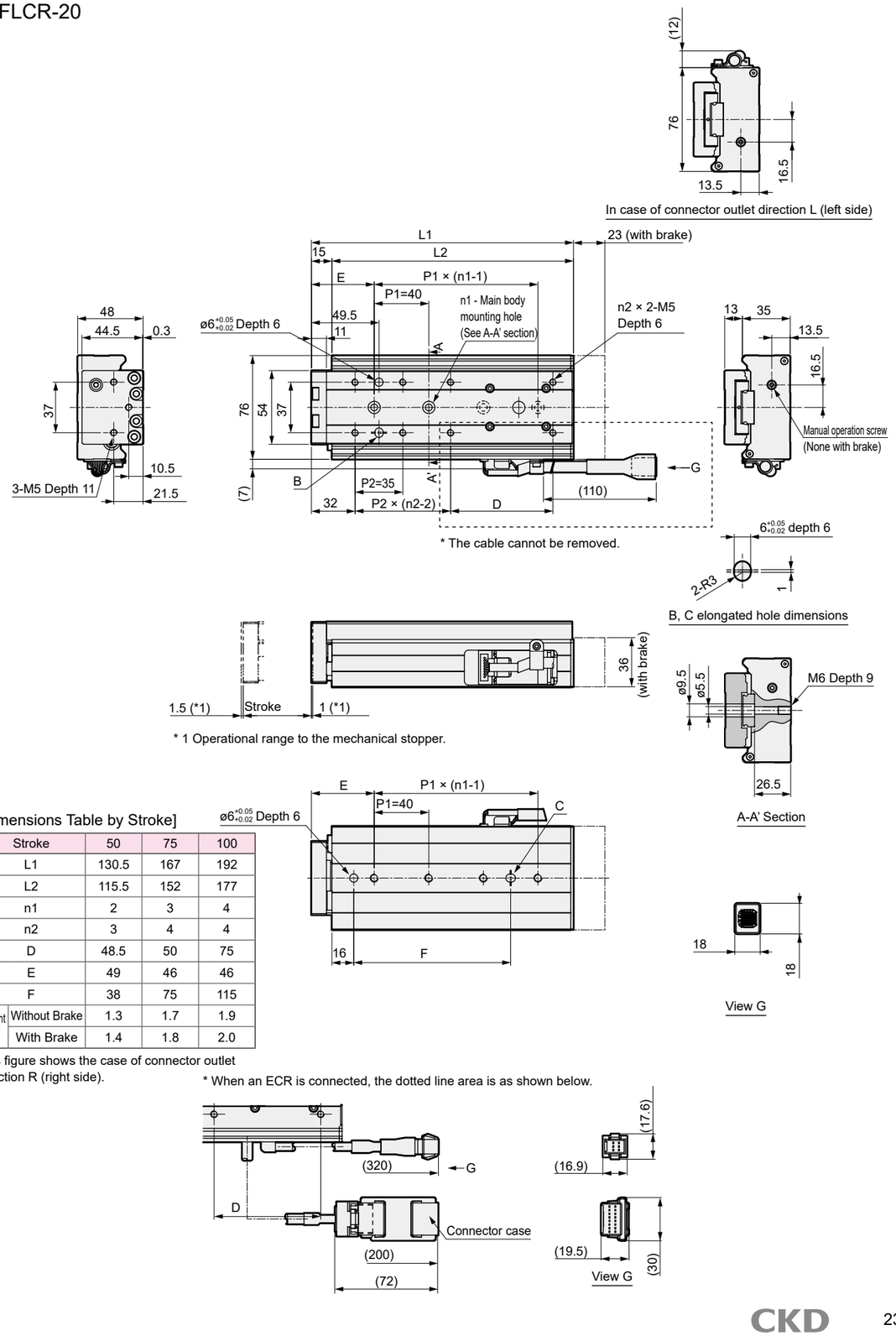
Stroke and Max. Speed

(mm/s)

Screw Lead	Power supply voltage	Stroke 50 to 100
2	48 VDC	100
	24 VDC	100
8	48 VDC	300
	24 VDC	300

Outline Dimension Drawing

● FLCR-20



[Dimensions Table by Stroke]

Stroke		50	75	100
L1		130.5	167	192
L2		115.5	152	177
n1		2	3	4
n2		3	4	4
D		48.5	50	75
E		49	46	46
F		38	75	115
Weight kg	Without Brake	1.3	1.7	1.9
	With Brake	1.4	1.8	2.0

This figure shows the case of connector outlet direction R (right side).

* When an ECR is connected, the dotted line area is as shown below.

Electric Actuator Table Type

FLCR-25

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLCR - 25 G 02 050 N C N - L S03

❶Size

25	

❷Connected Controllers *1

G	ECMG/ECG-B
Blank	ECR

❸Screw lead

02	2 mm
06	6 mm

❹Stroke

050	50 mm
075	75 mm
100	100 mm

❺Brake

N	None
B	Yes (ECMG/ECG-B only)

❻Encoder

C	Incremental Encoder

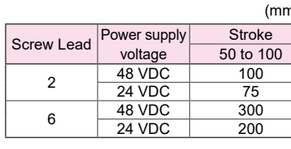
❼Connector leadout direction *2

L	Left side
R	Right side

❽Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

[Figure 1]



*1 Select the controller from page 529.
*2 Please refer to Figure 1.
*3 For Dimensions diagram of the relay cable, refer to P. 607 for ECR or P. 592 for ECMG/ECG.

Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□25L stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Ball screw (ø 10) + belt	
Stroke	mm	50, 75, 100	
Screw lead	mm	2	6
Max. Payload kg *1*2	Horizontal	11 (11)	11 (11)
	Vertical	8.5 (8.5)	3 (3)
Operation speed range *3	mm/s	2 to 100 (75)	7 to 300 (200)
Max. Pushing Force	N	210	90
Pushing Operation Speed Range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost Motion	mm	0.1 or less	
Static Allowable Moment N·m		[50st] MP: 65.1, MY: 65.1, MR: 116.3	
		[75st or more]: MP: 127.5, MY: 127.5, MR: 116.3	
Motor Power Supply Voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *4	Type, Power Supply Voltage	Non-excitation operating type, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding Force N	109	38
Insulation resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 The values in ( ) are at 24 VDC.
*2 Maximum value at acceleration/deceleration of 0.3 G. Payload varies depending on acceleration/deceleration and speed. Refer to Speed and Payload for details.
*3 The maximum speed values in ( ) are at 24 VDC.
* 4 Only compatible with ECMG and ECG-B.

Speed and Payload

[At 48 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	0.1 6	0.3 2	0.3 6
2	11		11	
10	11	11	11	11
100	11	11	11	11
300		11		11

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	0.1 6	0.3 2	0.3 6
2	8.5		8.5	
10	8.5	3	8.5	3
50	8.5	3	8.5	3
60	8.5	2.5	8.5	2.5
75	7.5	2.5	7	2.5
90	7.5	2.5	6	2.5
100	7.5	2.5	4.5	2.5
150		2		2
300		1		1

[At 24 VDC]

[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	0.1 6	0.3 2	0.3 6
2	11		11	
10	11	11	11	11
75	11	11	11	11
200		11		11

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw Lead (mm) 2	0.1 6	0.3 2	0.3 6
2	8.5		8.5	
10	8.5	3	8.5	3
30	8.5	3	8.5	3
45	4	3	4	3
50	3.5	3	3.5	3
60	3.5	2.5	3.5	2.5
75	3.5	2.5	3.5	2.5
100		2.5		2.5
150		2		2
200		1		1

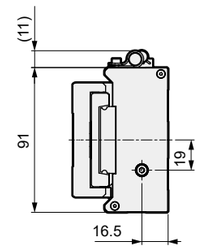
Stroke and Max. Speed

(mm/s)

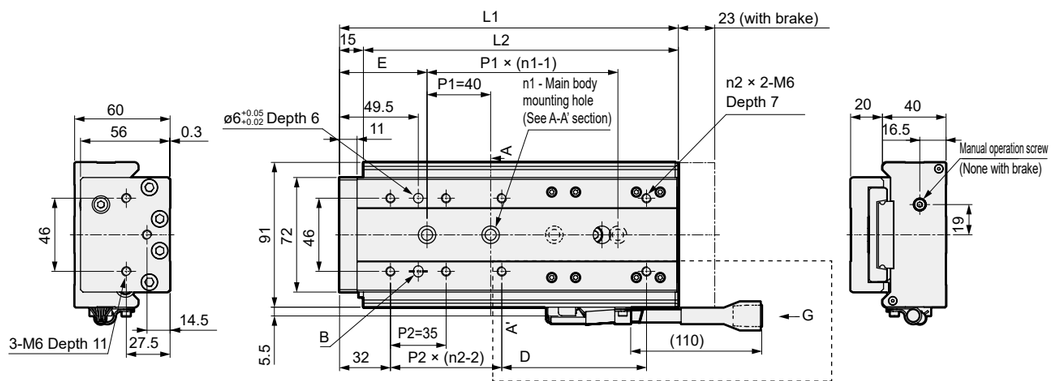
Screw Lead	Power supply voltage	Stroke 50 to 100
2	48 VDC	100
	24 VDC	75
6	48 VDC	300
	24 VDC	200

Outline Dimension Drawing

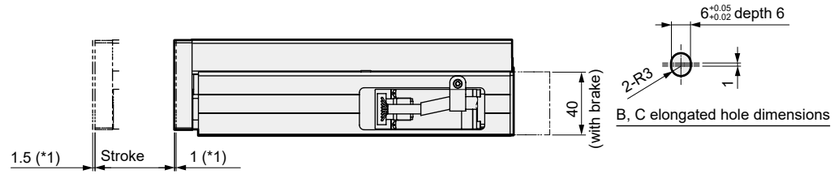
● FLCR-25



In case of connector outlet direction L (left side)



* The cable cannot be removed.

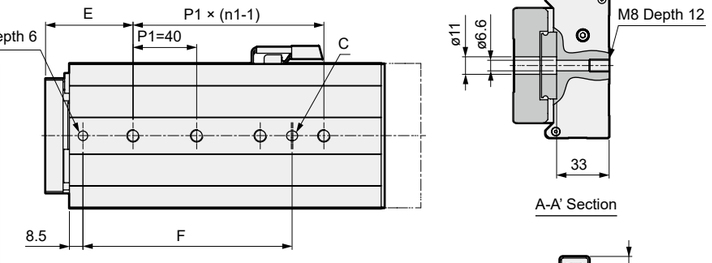


B, C elongated hole dimensions

* 1 Operational range to the mechanical stopper.

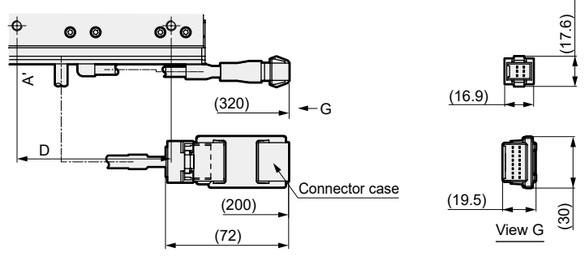
[Dimensions Table by Stroke]

Stroke	50	75	100
L1	142.5	188	213
L2	127.5	173	198
n1	2	3	4
n2	3	4	4
D	55.5	66	91
E	60.5	60	55
F	57	96.5	131.5
Weight kg: Without Brake	2.3	3.0	3.3
Weight kg: With Brake	2.5	3.2	3.5



This figure shows the case of connector outlet direction R (right side).

* When an ECR is connected, the dotted line area is as shown below.



Model Selection

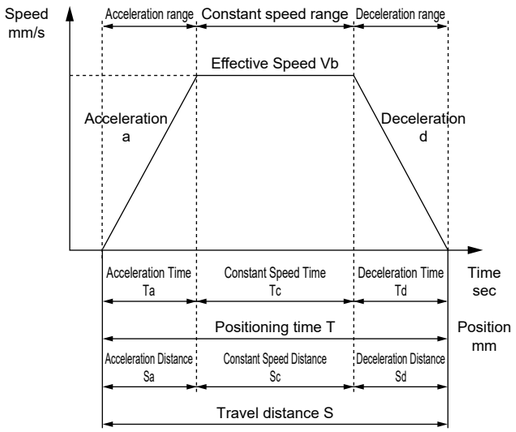
STEP1 Confirmation of Payload

The payload changes depending on the mounting orientation, screw lead, transport speed, acceleration/deceleration, and power supply voltage. Refer to the Series Variation (page 225), the specification table for each model and the Table of Payload by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

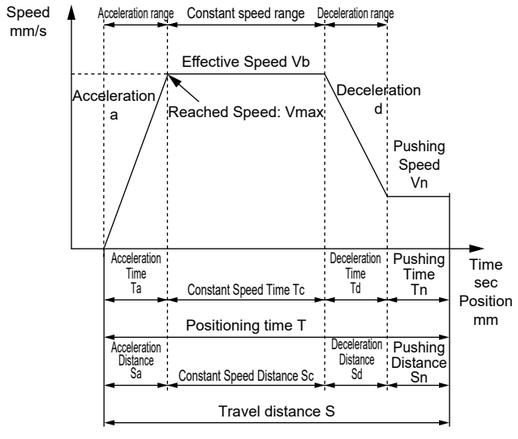
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2 \times a \times d \times S / (a + d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a \times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d \times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa + Sd)
	Positioning Time	T	s	= Ta + Tc + Td

* Do not use at speeds that exceed the specifications.
* Depending on acceleration/deceleration and stroke, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Use at the acceleration and deceleration of 0.3G or less. For details, please refer to the specifications P. for each model.
* Though the stabilization time differs depending on working conditions, it may take approximately 0.2s.
* 1G≈9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$=[2 \times a \times d \times (S-Sn+Vn^2/2/d)/(a + d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$= (a \times Ta^2) / 2$
	Deceleration Distance	Sd	mm	= ((Vb + Vn) × Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa + Sd + Sn)
	Positioning Time	T	s	= Ta + Tc + Td + Tn

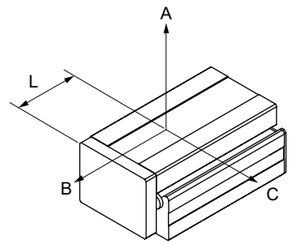
* Do not use at speeds that exceed the specifications.
* Pressing speed differs depending on the product.
* Depending on acceleration/deceleration and stroke, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Use at the acceleration and deceleration of 0.3G or less. For details, please refer to the specifications P. for each model.
* Though the stabilization time differs depending on working conditions, it may take approximately 0.2s.
* 1G≈9.8 m/s².

STEP3 Confirmation of Allowable Overhang Length

Make sure that the load overhang length during operation is within the allowable range (P. 235 to 237).

Allowable Overhang Length

[Horizontal Installation]



[Allowable Overhang Length]

■FLCR-16

Stroke mm	Acceleration/Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	1	630	155	195
			2	630	75	95
			4	630	35	45
		8	1	630	135	155
			2	630	65	75
			4	340	30	35
	0.3	2	1	630	160	195
			2	630	80	95
			4	340	35	45
		8	1	475	120	120
			2	225	60	55
			3	145	40	35
75, 100	0.1	2	1	630	380	195
			2	630	185	95
			4	630	85	45
		8	1	630	325	165
			2	630	155	80
			4	630	75	35
	0.3	2	1	630	385	200
			2	630	185	95
			4	630	90	45
		8	1	630	295	145
			2	630	140	70
			3	460	90	45

■FLCR-20

Stroke mm	Acceleration/Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	1	645	285	380
			3	645	90	125
			5.5	645	50	65
		8	1	645	225	265
			3	645	75	85
			5.5	350	35	45
	0.3	2	1	645	285	380
			3	645	90	120
			5.5	405	50	65
		8	1	645	220	235
			3	270	70	75
			5	155	40	40
75, 100	0.1	2	1	645	580	385
			3	645	185	125
			5.5	645	95	65
		8	1	645	460	295
			3	645	145	95
			5.5	645	75	45
	0.3	2	1	645	580	385
			3	645	185	125
			5.5	645	95	65
		8	1	645	450	280
			3	645	145	90
			5	410	80	50

■FLCR-25

Stroke mm	Acceleration/Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	3	940	210	410
			5	940	125	245
			11	940	55	105
		6	3	940	165	245
			5	780	95	145
			11	330	40	60
	0.3	2	3	940	210	405
			5	940	125	240
			11	450	55	105
		6	3	630	165	225
			5	365	95	130
			11	150	40	55
75, 100	0.1	2	3	940	465	420
			5	940	275	245
			11	940	115	105
		6	3	940	360	300
			5	940	210	175
			11	920	90	75
	0.3	2	3	940	465	420
			5	940	275	245
			11	940	115	105
		6	3	940	360	295
			5	940	210	175
			11	445	90	70

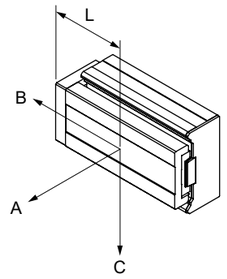
* Values are limited when the actuator operation cycle is 5 million cycles or when the operating life is shorter by 1000km.
* The overhang direction is for a single-direction load.
* dimensions A, B, and C are measured from the table top.
* Values are at maximum speed and maximum payload.
* Values may vary according to power supply voltage. Please contact us for details.
* For acceleration/deceleration and payload, refer to the Table of Payload by Speed and Acceleration/Deceleration (specifications page for each model).

L Value (Guide Block Center Distance) [mm]

Size	Stroke 50	75	100
FLCR-16	91	124	149
FLCR-20	101	127	152
FLCR-25	104	143	168

Allowable Overhang Length

[When Wall-Mounted]



[Allowable Overhang Length]

■FLCR-16

Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	1	180	145	630
			2	80	65	630
			4	30	25	540
		8	1	140	125	630
			2	60	55	600
			4	20	20	230
	0.3	2	1	185	150	630
			2	85	65	630
			4	30	25	300
		8	1	110	110	440
			2	45	45	190
			3	25	25	110
75, 100	0.1	2	1	180	350	630
			2	80	160	630
			4	30	60	630
		8	1	150	295	630
			2	65	130	630
			4	20	45	630
	0.3	2	1	185	360	630
			2	80	160	630
			4	30	60	630
		8	1	130	265	630
			2	55	115	620
			3	30	65	370

■FLCR-20

Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	1	365	275	645
			3	110	80	645
			5.5	50	35	645
		8	1	255	215	645
			3	70	60	565
			5.5	30	25	245
	0.3	2	1	365	275	645
			3	110	80	645
			5.5	50	35	365
		8	1	225	210	645
			3	60	55	235
			5	30	25	115
75, 100	0.1	2	1	370	560	645
			3	110	165	645
			5.5	50	75	645
		8	1	280	440	645
			3	80	125	645
			5.5	30	50	645
	0.3	2	1	370	560	645
			3	110	165	645
			5.5	50	75	645
		8	1	270	430	645
			3	75	120	640
			5	35	60	335

■FLCR-25

Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	B	C
50	0.1	2	3	390	200	940
			5	225	115	940
			11	85	45	850
		6	3	230	150	940
			5	130	85	680
			11	45	30	230
	0.3	2	3	385	200	940
			5	220	115	940
			11	85	45	415
		6	3	215	150	600
			5	120	85	335
			11	40	25	115
75, 100	0.1	2	3	400	445	940
			5	225	250	940
			11	85	95	940
		6	3	285	335	940
			5	155	190	940
			11	55	65	700
	0.3	2	3	400	445	940
			5	225	250	940
			11	85	95	940
		6	3	280	335	940
			5	155	190	940
			11	55	65	370

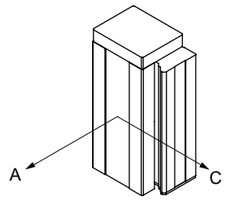
* Values are limited when the number of actuator operations is 5 million cycles or when the operating life is shorter by 1000 km.
* The overhang direction is for a single-direction load.
* dimensions A, B, and C are measured from the table top.
* Values are at maximum speed and maximum payload.
* Values may vary according to power supply voltage. Please contact us for details.
* For acceleration/deceleration and payload, refer to the Table of Payload by Speed and Acceleration/ Deceleration (specifications page for each model).

L Value (Guide Block Center Distance) [mm]

Size	Stroke 50	75	100
FLCR-16	91	124	149
FLCR-20	101	127	152
FLCR-25	104	143	168

Allowable Overhang Length

[Vertical Installation]



[Allowable Overhang Length]

■FLCR-16

Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	C
50	0.1	2	1	160	160
			2	70	70
			4	30	30
		8	0.3	520	510
			0.4	425	420
			0.5	335	335
	0.3	2	1	160	160
			2	70	70
			4	30	30
		8	0.3	520	510
			0.4	425	420
			0.5	335	335
75, 100	0.1	2	1	410	410
			2	195	195
			4	95	90
		8	0.3	630	630
			0.4	630	630
			0.5	630	630
	0.3	2	1	410	410
			2	195	195
			4	95	95
		8	0.3	630	630
			0.4	630	630
			0.5	630	630

■FLCR-20

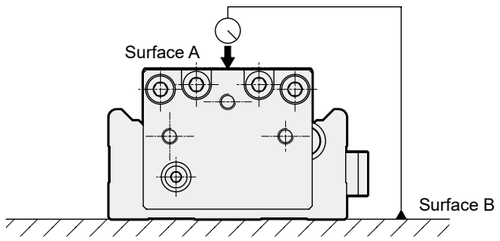
Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	C
50	0.1	2	1	270	265
			2	130	125
			4	60	55
		8	0.3	645	645
			0.5	615	610
			0.8	375	375
	0.3	2	1	270	265
			2	130	125
			4	60	60
		8	0.3	645	645
			0.5	610	610
			0.8	375	375
75, 100	0.1	2	1	575	570
			2	285	280
			4	140	135
		8	0.3	645	645
			0.4	645	645
			0.5	645	645
	0.3	2	1	575	570
			2	285	280
			4	140	140
		8	0.3	645	645
			0.4	645	645
			0.5	645	645

■FLCR-25

Stroke mm	Acceleration/ Deceleration G	Screw Lead	Load weight kg	Overhang mm A	C
50	0.1	2	2	315	310
			4	155	155
			8.5	65	65
		6	1	525	490
			2	275	265
			3	210	210
	0.3	2	2	315	310
			4	155	155
			8.5	65	65
		6	1	520	485
			2	270	260
			3	210	210
75, 100	0.1	2	2	730	725
			4	375	375
			8.5	170	170
		6	1	940	940
			2	645	625
			3	505	500
	0.3	2	2	730	725
			4	375	375
			8.5	170	170
		6	1	940	940
			2	640	620
			3	505	500

* Values for which the number of actuator operations is limited to 5 million cycles or with a shorter service life of 1000 km.
* The overhang direction is for a single-direction load.
* dimensions A and C are measured from the table top.
*Values are at maximum speed and maximum payload.
*Values may vary according to power supply voltage. Please contact us for details.
* For acceleration/deceleration and payload, refer to the Table of Payload by Speed and Acceleration/Deceleration (specification page for each model).

Slider parallelism *Reference value

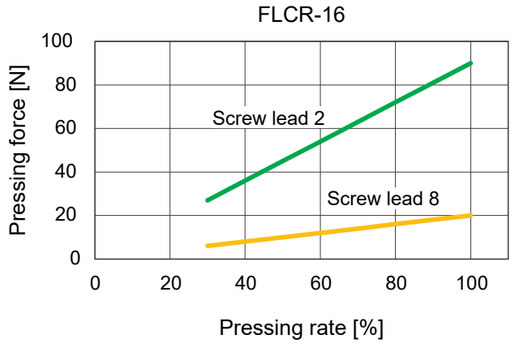


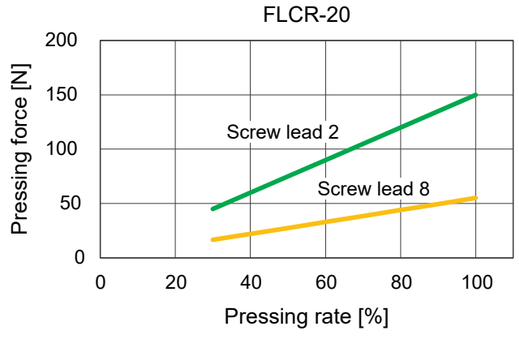
Parallelism of surface A with respect to surface B [mm]

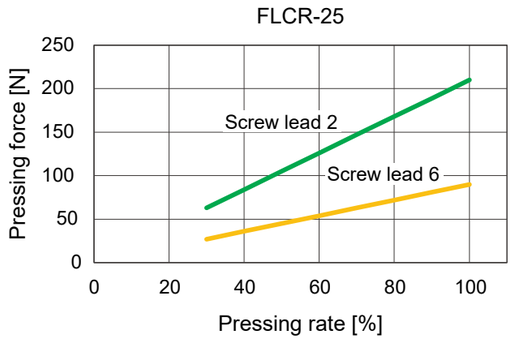
Size	Stroke		
	50	75	100
FLCR-16	0.070	0.105	0.135
FLCR-20	0.075	0.115	0.140
FLCR-25	0.080	0.110	0.140

* This is the parallelism when the product is fixed to a surface plate.

Pushing Force and Pushing Rate





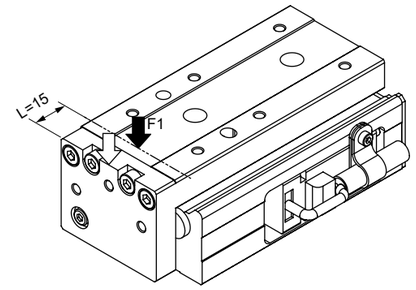


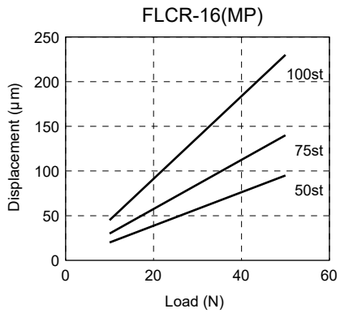
* Pressing force and pressing rate indicate a guideline. Individual motor differences and variations in mechanical efficiency may result in errors even at the same pressing rate.

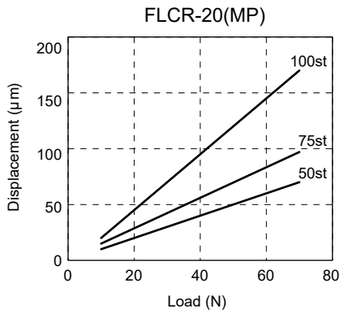
Table deflection *Reference value

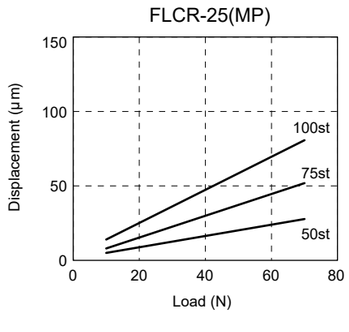
[Table deflection due to pitching moment MP]

Displacement at the table tip when a load (F1) is applied to the table tip



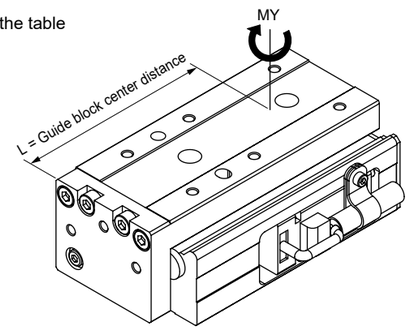


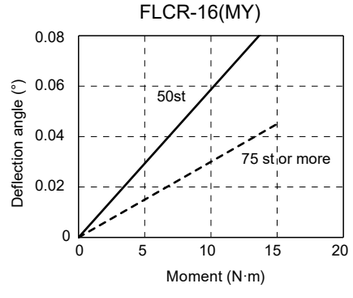


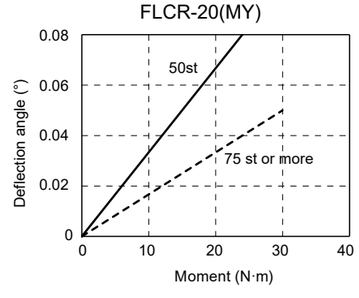


[Table deflection due to yawing moment MY]

Displacement angle of the table when a rotational moment (MY) is applied to the table







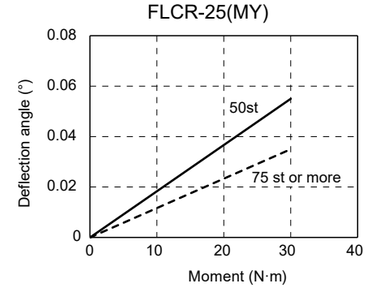
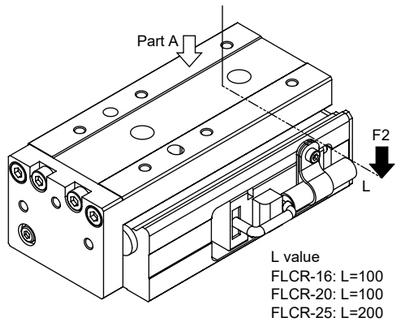


Table deflection *Reference value

[Table deflection due to rolling moment MR]

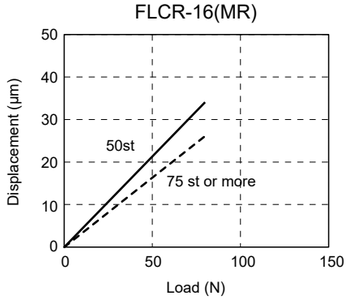
Displacement at the table end (part A) when a load (F2) is applied at a position L mm away from the actuator center



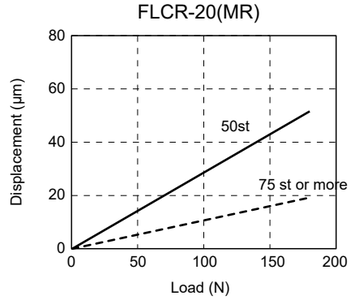
L value
FLCR-16: L=100
FLCR-20: L=100
FLCR-25: L=200

Plate (material: Iron) is attached when measuring.
w=12, t=19

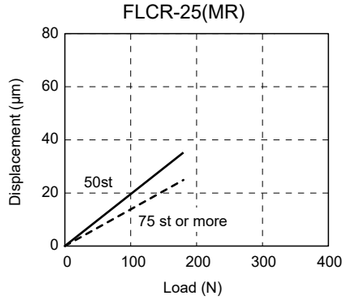
FLCR-16(MR)



FLCR-20(MR)



FLCR-25(MR)



MEMO

F Series
FLCR
FGRC
FLSH
FFLD
Ending

To Use This Product Safely

Be sure to read this before use.
Refer to Intro 17 for general information on electric actuators.

Individual Precautions: Electric actuator FLCR Series

During Design / Selection

1. Common

DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a risk of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
This can cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix (including the workpiece) it.
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■ Use within the product's specified operating range.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ If the moving workpiece poses a possible risk to personnel or if fingers could be caught, take safety measures.

■ It may take several seconds to complete an emergency stop, depending on the travel speed and load.

■ If the machine stops in the event of a system failure such as emergency stop or power outage, equipment damage or injury do not occur.Design a safety circuit or device.

■ Install indoors with low humidity.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such an environment will cause damage and malfunction.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
This can cause malfunction or failure.

■ Take possibility of power source breakdown into consideration.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ When installing the actuator in a direction other than horizontal, select the-type with brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■ The brakes are not sufficient to completely retain the actuator in all situations. Be sure to achieve a balanced state or install a mechanical lock mechanism where safety must be guaranteed, such as when performing maintenance in an application where the table moves with an unbalanced load or when stopping the machine for a long period of time.

Caution

■ Never disassemble or modify the product.

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

■ For UL compliance, use a Class2 power supply unit conforming to UL1310 for the combination DC power supply.

■ Set up the wiring so as not to apply inductive noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply which provides ample capacity based on the number of installed products. If there is not enough capacity, it may malfunction.

■ Since a fixing cable cannot be used in applications where it is repeatedly bent, fix it so that it does not move easily. Use a movable cable in places where it is repeatedly bent.

■ Fixed/movable Use cables with a bending radius of 63 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ Use a cable within 10 m to connect the IF connector.

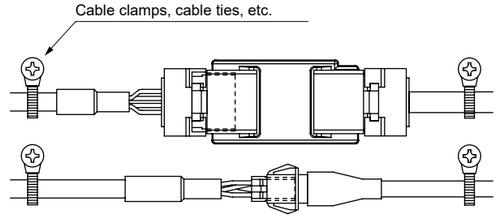
■ Select a model that has sufficient power to grip the workpiece weight.

■ Select a model that has sufficient opening/closing width for the workpiece size. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. Also, when opening from gripping operation, increase the stroke by the amount of backlash.

■ Use with a load that does not exceed the specified range. If used outside of the specified range, an excessive eccentric load will be applied to the guide. This can cause chattering in the guide, reduce accuracy, and/or reduce the operating life.

■ Do not hold the product's movable parts or cables during transportation and installation.
This can cause injury or disconnection.

■ Do not move the cable leading out of the actuator. Fix the cable part. Furthermore, use cables with a bending radius of 40 mm or more.



For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

FLCR Series Model Selection Checklist → CKD (Contact)

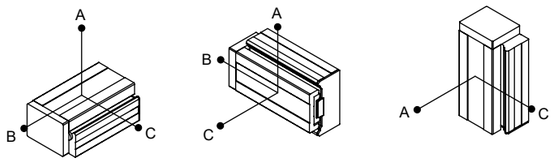
Fill in the form and send to the nearest CKD Sales Office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model		
Basic Specifications	Max. stroke: mm, Ball screw lead: mm	
Operating Conditions	Travel stroke: mm, travel time: s	
	Set speed: mm/s	
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)	
	Repeatability: ± mm	
Load Conditions	Load weight: kg	
	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other	
	Distance from table center to load's center of gravity: A direction: mm B direction: mm C direction: mm * B is the distance from the center of the guide block (refer to pages 235 and 236).	
	Pushing load: No / Yes (N) Operating / Stopped Direction of the force applied to table center ( )	
Usage Environment	Ambient Temperature: °C, ambient humidity: %	
	Atmosphere:	
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP	
Special Notes		

F Series
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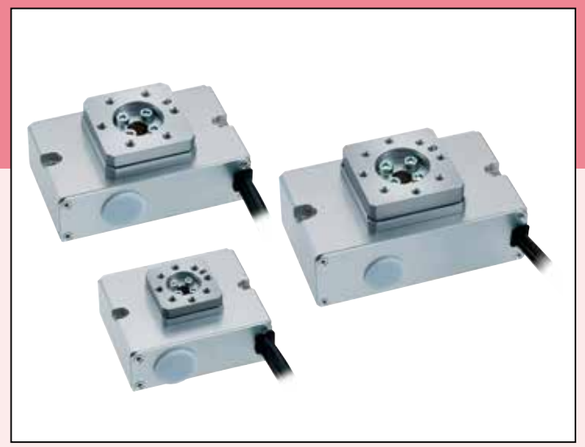
Ending

Electric actuator
Motor specification

FGRC

Rotary Type



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● Specifications/Model No. Notation/Dimensions
· FGRC-10 250
· FGRC-30 252
· FGRC-50 254

● Model selection 256

● Technical data 262

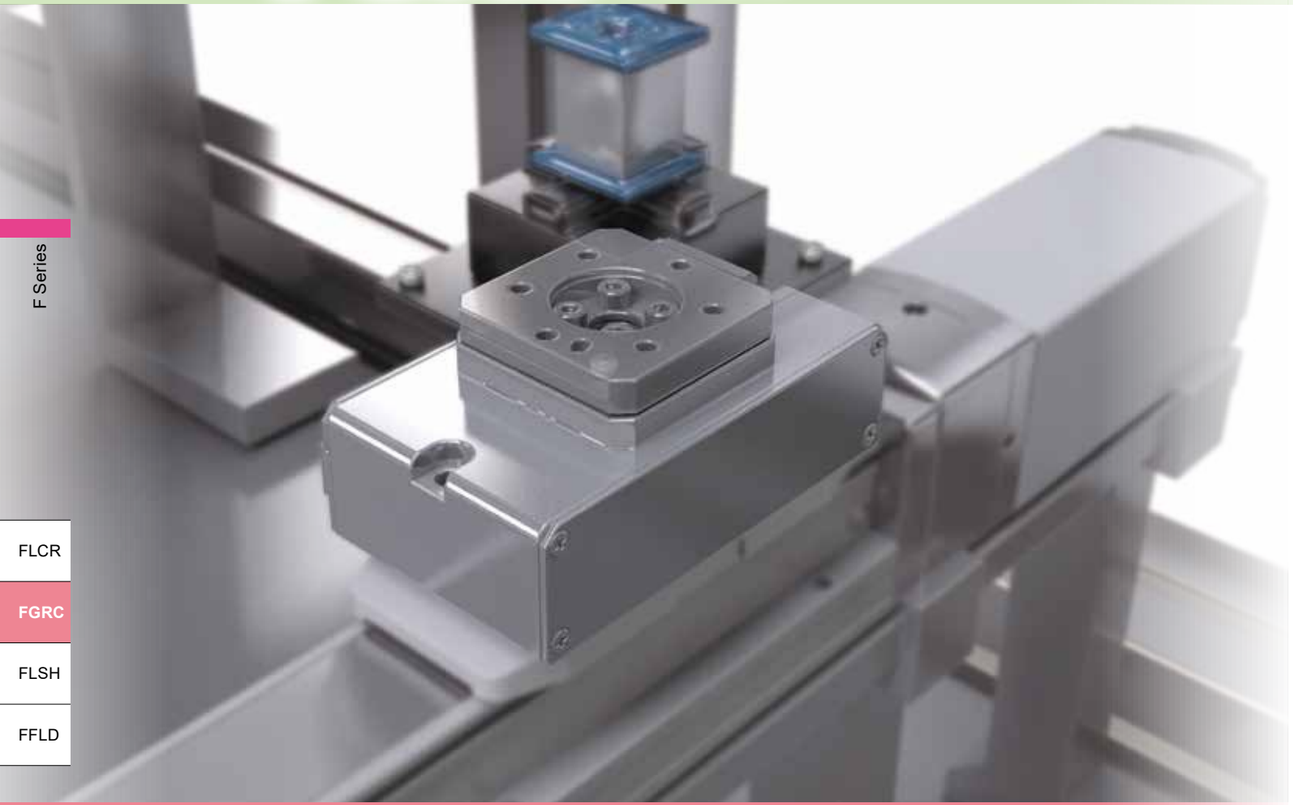
⚠ Precautions for Use 266

Model Selection Check Sheet 268

FGRC System Table

Model No.	Motor Size	Max. Torque (N·m)	Max. Angular Velocity (deg/s)
FGRC-10	□20	0.89	200
FGRC-30	□25	2.71	
FGRC-50	□35	4.66	

Rotary FGRC Series



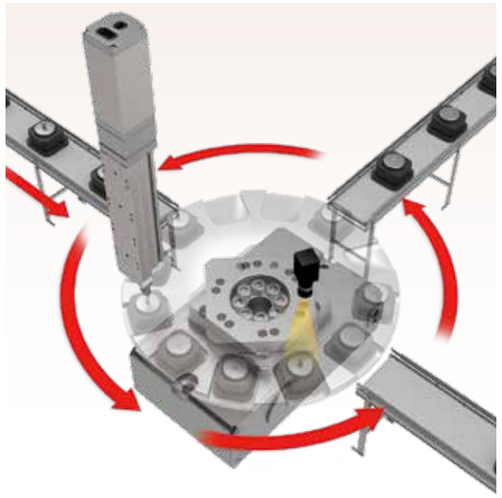
F Series

FLCR
FGRC
FLSH
FFLD

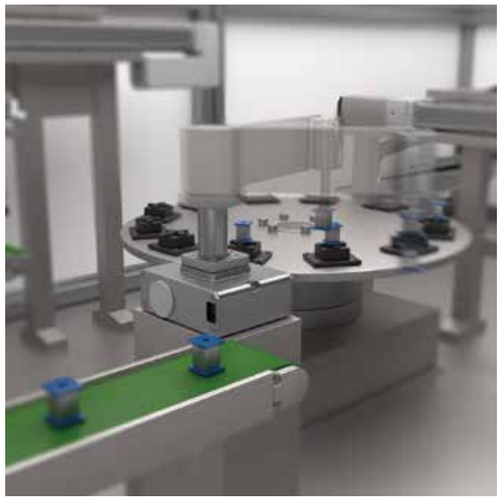
For indexing operations and workpiece reversal

Application examples

Indexing operation to each position, such as assembly and simple inspection processes.



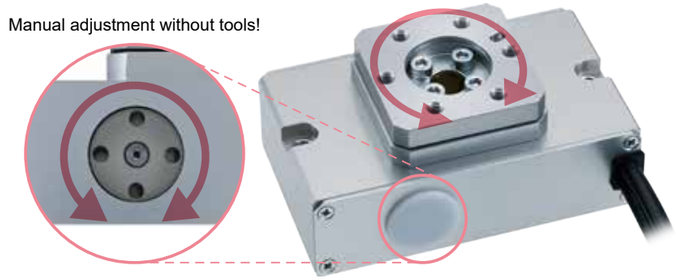
Also for oscillating applications that transfer workpieces.



Easy maintenance

Manual operation and self-locking mechanisms

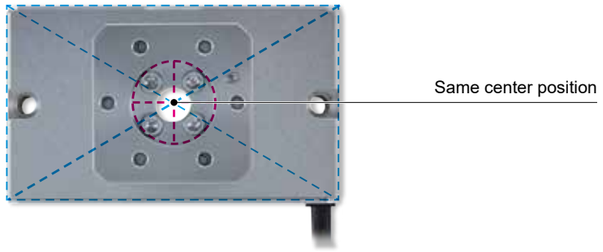
Equipped with a manual operation mechanism that can be operated without tools.
The position of the rotary table held by the self-lock can be adjusted.



Reduced design

Coaxial design

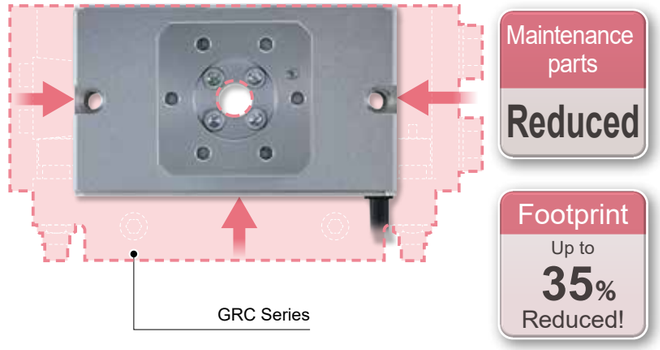
Since the center of the rotating part and the center of the actuator body are coaxial, layout conception is easy.



Space saving

Compact body

Since FGRC performs acceleration/deceleration operations, installation of a shock absorber is not necessary.



F Series

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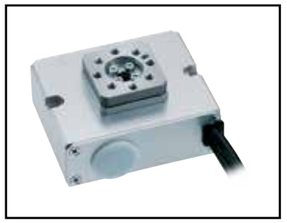


Electric Actuator Rotary Type

FGRC-10

□20 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FGRC - 10 G 360 N C N - F S03

❶Size

10

❷Supported controllers* 1

G	ECMG/ECG-B
Blank	ECR

❸Encoder

C	Incremental Encoder

❹Relay cable *2

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
* 2 For Dimensions diagram of the relay cable, refer to page 607 for ECR or page 592 for ECMG/ECG.

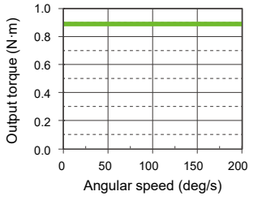
Specifications

Connected Controller		ECMG, ECG-B, ECR
Motor		□20 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Worm gear + belt
Travel angle	*1	360
Max. output torque *2	N·m	0.89
Repeatability deg		±0.05
Backlash *3	deg	±0.3
Lost motion deg		0.3 or less
Operation angular speed range deg/s		20 to 200
Pressing operation angular speed range	deg/s	20 to 30
Allowable moment of inertia *2	kg·m²	0.0057
Allowable thrust load	N	80
Allowable radial load	N	80
Allowable moment	N·m	2.5
Motor power supply voltage	* 4	24 VDC ±10% or 48 VDC ±10%
Insulation resistance		10 MΩ, 500 VDC
Dielectric Strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight	kg	0.65

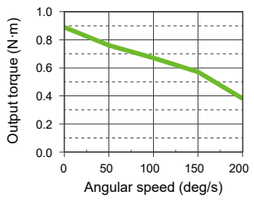
*1 The angle that can be moved with the move command is 359.9 degrees.
*2 Rotation torque and allowable moment of inertia vary depending on the angular speed and angular acceleration/deceleration. Refer to the table at right for details.
*3 When stopping precision is required, use an external stopper, etc., and complete positioning with pressing operation.
*4 48 VDC is only compatible with Controllers ECR.

Angular velocity and output torque

[At 48 VDC]

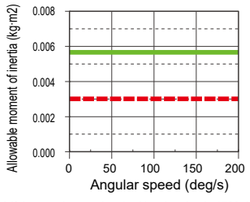


[At 24 VDC]

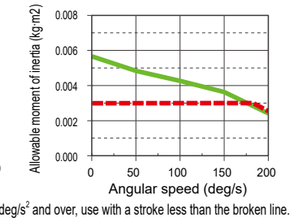


Angular velocity and allowable moment of inertia

[At 48 VDC]

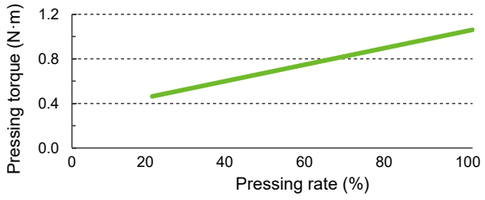


[At 24 VDC]



* If the angular acceleration/deceleration is 1700 deg/s² and over, use with a stroke less than the broken line.

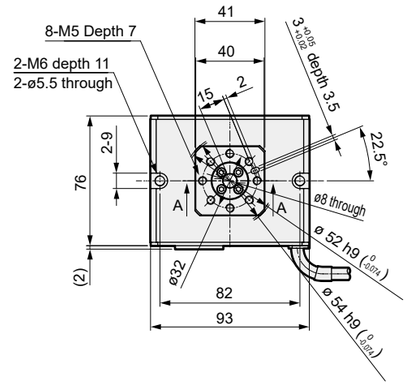
Pushing Torque

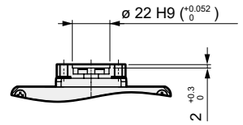


* The pressing torque and pressing rate indicate a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.

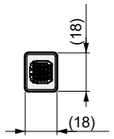
Outline Dimension Drawing

● FGRC-10

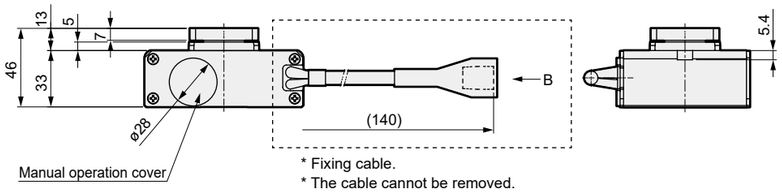




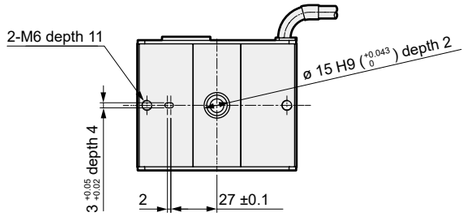
A-A cross section



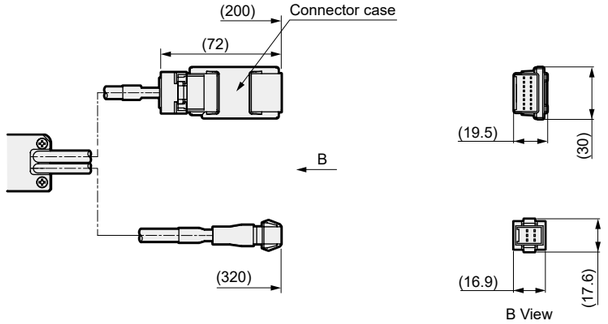
B View



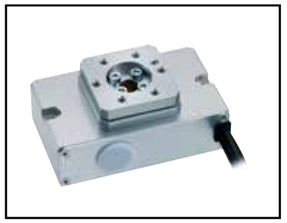
* Fixing cable.
* The cable cannot be removed.
* Min. bending radius 40 mm



* When an ECR is connected, the dotted line area is as shown below.



B View



Electric Actuator Rotary Type

FGRC-30

□25 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FGRC - 30 G 360 N C N - F S03

❶ ❷ ❸ ❹

❶Size
30

❷Connected Controllers* 1	
G	ECMG/ECG-B
Blank	ECR

❸Encoder	
C	Incremental Encoder

❹Relay cable	*2
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
* 2 For Dimensions diagram of the relay cable, refer to page 607 for ECR or page 592 for ECMG/ECG.

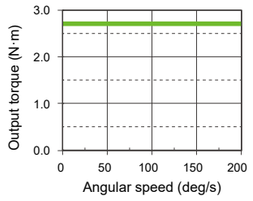
Specifications

Connected Controller		ECMG, ECG-B, ECR
Motor		□25 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Worm gear + belt
Travel angle	*1	360
Max. output torque *2	N·m	2.71
Repeatability deg		±0.05
Backlash *3	deg	±0.2
Lost motion	deg	0.3 or less
Operation angular speed range	deg/s	20 to 200
Pressing operation angular speed range	deg/s	20 to 30
Allowable moment of inertia * 2	kg·m²	0.0173
Allowable thrust load	N	200
Allowable radial load	N	200
Allowable moment	N·m	5.5
Motor power supply voltage	*4	24 VDC ±10% or 48 VDC ±10%
Insulation resistance		10 MΩ, 500 VDC
Dielectric Strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight	kg	1.05

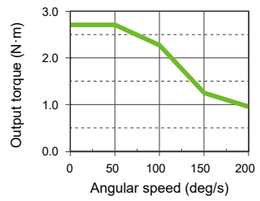
*1 The angle that can be moved with the move command is 359.9 degrees.
*2 Rotation torque and allowable moment of inertia vary depending on the angular speed and angular acceleration/deceleration. For details, please refer to the table on the right.
*3 When stopping precision is required, use an external stopper, etc., and complete positioning with pressing operation.
*4 48 VDC is only compatible with Controllers ECR.

Angular velocity and output torque

[At 48 VDC]

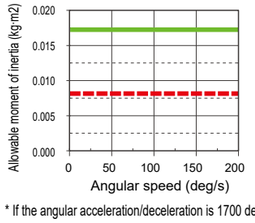


[At 24 VDC]

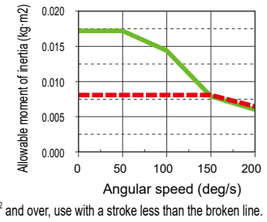


Angular velocity and allowable moment of inertia

[At 48 VDC]

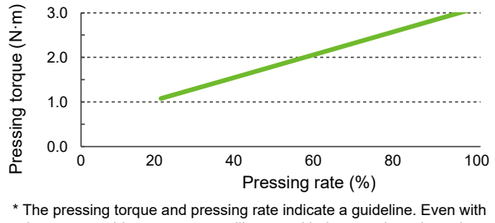


[At 24 VDC]



* If the angular acceleration/deceleration is 1700 deg/s² and over, use with a stroke less than the broken line.

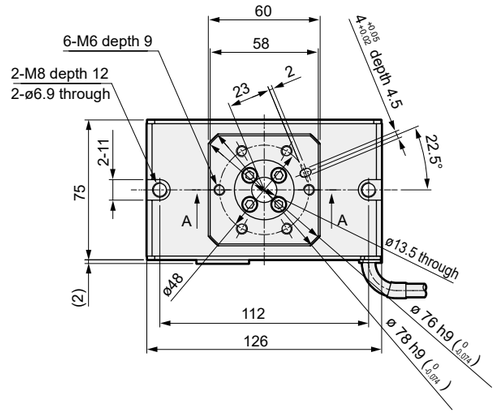
Pushing Torque

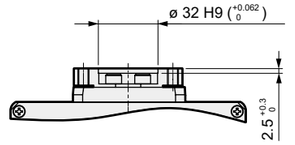


* The pressing torque and pressing rate indicate a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.

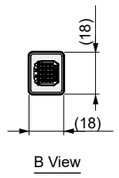
Outline Dimension Drawing

● FGRC-30

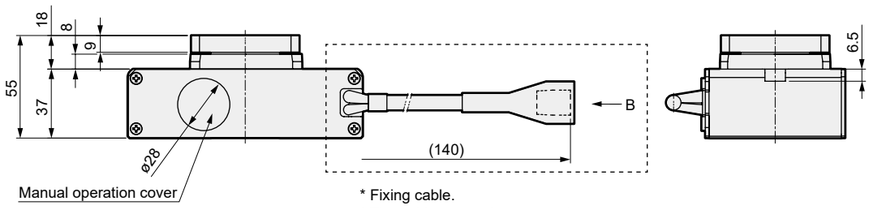




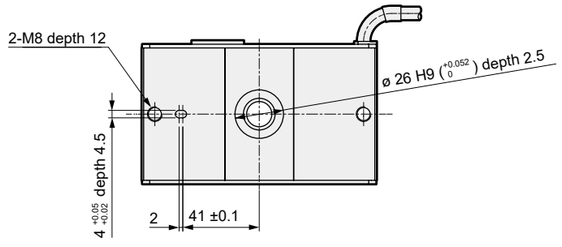
A-A cross section



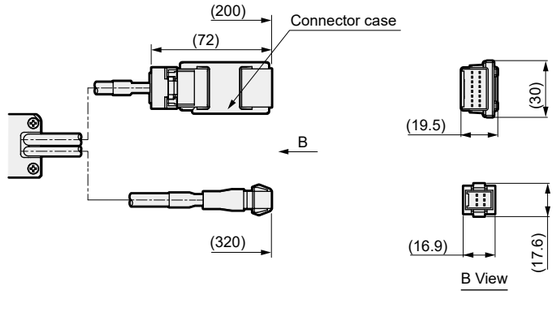
B View

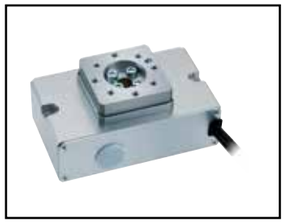


* Fixing cable.
* The cable cannot be removed.
* Min. bending radius 40 mm



*When an ECR is connected, the dotted line area is as shown below.





Electric Actuator Rotary Type

FGRC-50

□35 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FGRC - 50 ❶ G ❷ 360 N C ❸ N - F S03 ❹

❶Size
50

❷Connected Controllers* 1	
G	ECMG/ECG-B
Blank	ECR

❸Encoder	
C	Incremental Encoder

❹Relay cable * 1 * 2	
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
* 2 For Dimensions diagram of the relay cable, refer to page 607 for ECR or page 592 for ECMG/ECG.

Specifications

Connected Controller		ECMG, ECG-B, ECR
Motor		□35 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Worm gear + belt
Travel angle * 1		360
Max. output torque * 2	N·m	4.66
Repeatability deg		±0.05
Backlash * 3	deg	±0.2
Lost motion deg		0.3 or less
Operation angular speed range	deg/s	20 to 200
Pressing operation angular speed range	deg/s	20 to 30
Allowable moment of inertia * 2	kg·m²	0.0297
Allowable thrust load	N	450
Allowable radial load	N	320
Allowable moment	N·m	10
Motor power supply voltage	* 4	24 VDC ±10% or 48 VDC ±10%
Insulation resistance		10 MΩ, 500 VDC
Dielectric Strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight	kg	1.85

*1 The angle that can be moved with the move command is 359.9 degrees.
*2 Rotation torque and allowable moment of inertia vary depending on the angular speed and angular acceleration/deceleration. Refer to the table at right for details.
*3 When stopping precision is required, use an external stopper, etc., and complete positioning with pressing operation.
*4 48 VDC is only compatible with Controllers ECR.

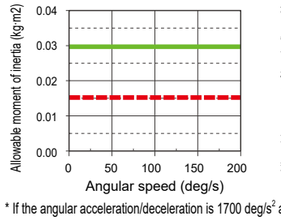
Angular velocity and output torque

[At 48 VDC]

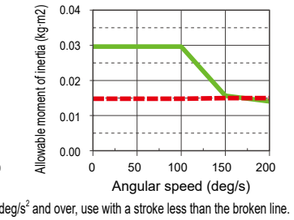
[At 24 VDC]

Angular velocity and allowable moment of inertia

[At 48 VDC]

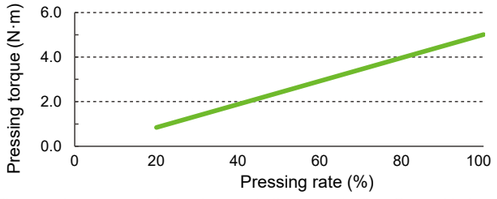


[At 24 VDC]



* If the angular acceleration/deceleration is 1700 deg/s² and over, use with a stroke less than the broken line.

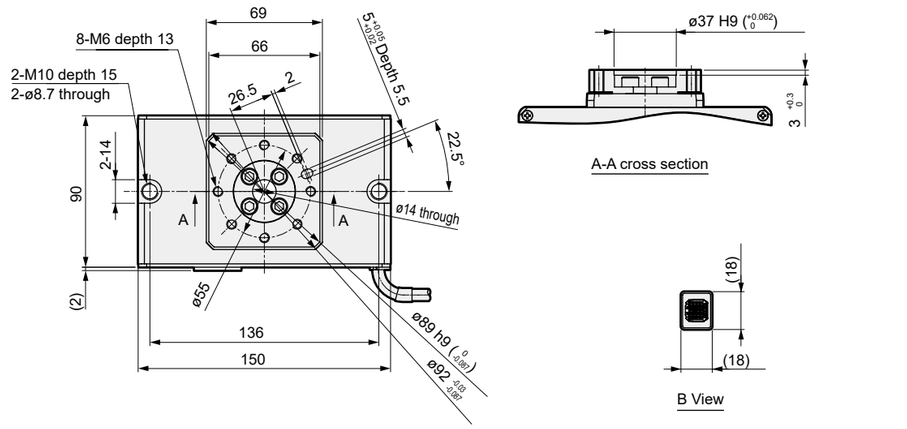
Pushing Torque



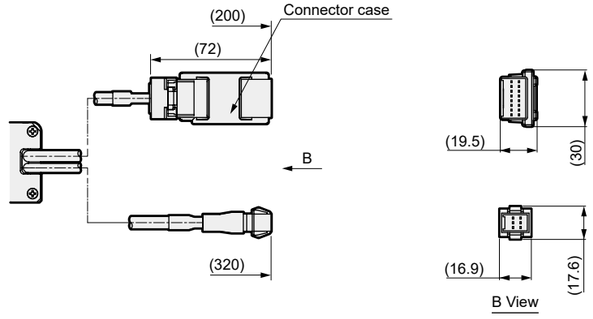
*The pressing torque and pressing rate indicate a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.

Outline Dimension Drawing

● FGRC-50



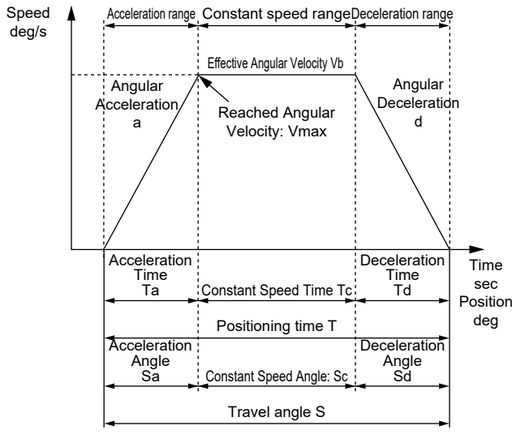
* When an ECR is connected, the dotted line area is as shown below.



STEP1 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

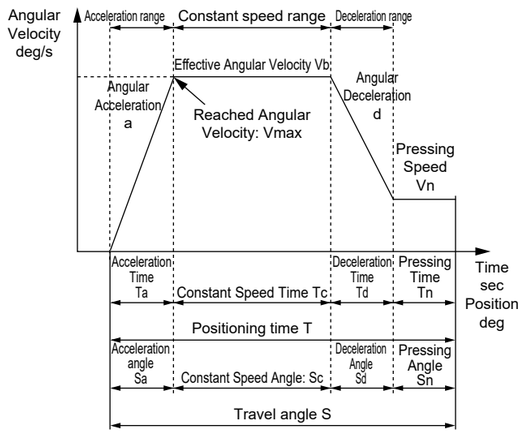
Positioning time for general transfer operations



	Item	Code	Unit	Remarks
Setting Value	Set Angular Velocity	V	deg/s	
	Set Angular Acceleration	a	deg/s^2	
	Set Angular Deceleration	d	deg/s^2	
	Travel Angle	S	deg	
Calculated Value	Reached Angular Velocity	Vmax	deg/s	$=[2\times a\times d\times S/(a+d)]^{1/2}$
	Effective Angular Velocity	Vb	deg/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Angle	Sa	deg	$=(a\times Ta^2)/2$
	Deceleration Angle	Sd	deg	$=(d\times Td^2)/2$
	Constant Speed Angle	Sc	deg	= S - (Sa + Sd)
	Positioning Time	T	s	= Ta + Tc + Td

* Do not use at angular speeds that exceed the specifications. Depending on angular acceleration/deceleration and travel angle, the trapezoid speed waveform may not be formed (the set angular speed may not be achieved). In that case, select the smaller of the set angular velocity (V) and the reached angular velocity (Vmax) as the effective angular velocity (Vb).
* Use the at angular acceleration and deceleration of 3000 deg/s^2 or less.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1G≈9800 deg/s^2

Positioning time for pushing operations

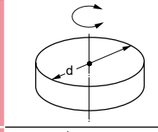
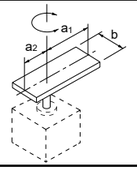


	Item	Code	Unit	Remarks
Setting Value	Set Angular Velocity	V	deg/s	
	Set Angular Acceleration	a	deg/s^2	
	Set angular deceleration	d	deg/s^2	
	Travel Angle	S	deg	
	Pushing Speed	Vn	deg/s	
	Pushing Angle	Sn	deg	
Calculated Value	Reached Angular Velocity	Vmax	deg/s	$=[2\times a\times d\times (S-Sn+Vn^2/2/d)/(a+d)]^{1/2}$
	Effective Angular Velocity	Vb	deg/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Angle	Sa	deg	$=(a\times Ta^2)/2$
	Deceleration Angle	Sd	deg	$=((Vb+Vn)\times Td)/2$
	Constant Speed Angle	Sc	deg	= S - (Sa + Sd + Sn)
	Positioning Time	T	s	= Ta + Tc + Td + Tn

* Do not use at angular speeds that exceed the specifications.
* Depending on angular acceleration/deceleration and travel angle, the trapezoid speed waveform may not be formed (the set angular speed may not be achieved). In that case, select the smaller of the set angular velocity (V) and the reached angular velocity (Vmax) as the effective angular velocity (Vb).
* Use the at angular acceleration and deceleration of 3000 deg/s^2 or less.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1G≈9800 deg/s^2

STEP2 Confirmation of Moment of Inertia of Load

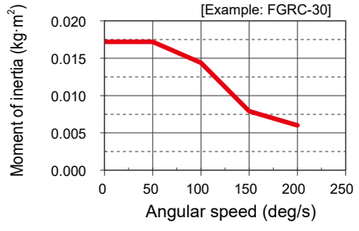
Calculate the moment of inertia of the load and select a model from the graph of angular velocity and allowable moment of inertia.

Shape	Schematic Diagram	Required Items	Moment of inertia I kg·m^2	Radius of gyration
Dial plate		● Diameter d (m) ● Weight M (kg)	$I=\frac{Md^2}{8}$	$\frac{d^2}{8}$
Thin rectangle plate (rectangular parallelepiped)		● Plate length a_1 a_2 ● Side length b ● Weight M_1 M_2	$I=\frac{M1}{12}(4a_1^2+b^2)+\frac{M2}{12}(4a_2^2+b^2)$	$\frac{(4a_1^2+b2)+(4a_2^2+b^2)}{12}$

*Refer to P. 263.

[24 VDC]

Angular speed and allowable moment of inertia



*Refer to P. 250, 252 and 254.

STEP3 Confirmation of Required Torque

Use the following equations to determine the maximum load torque, and then refer to the angular speed and output torque graph to select the Applicable models.

Largely divided into 3 types depending on the load type. Calculate the required torque for each case. For combined load, sum each torque to get the required torque.

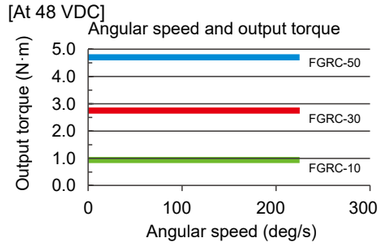
①Static load (T_S)
When static pressing force is required, such as clamping
$T_S = F_S \times L$
T_S: Required torque (N·m)
F_S: Required thrust (N)
L: Length from the center of rotation to the point of action (m)

②Resistance load (T_R)
When force due to friction, gravity, or other external forces is applied
$T_R = 3 \times F_R \times L$
T_R: Required torque (N·m)
F_R: Required thrust (N)
L: Length from the center of rotation to the point of action (m)

③Inertia load (T_A)
When rotating an object
$T_A = 3 \times I \times \dot{\omega}$
T_A: Required torque (N·m)
I: Moment of inertia (kg·m^2)
$\dot{\omega}$: Set angular acceleration/deceleration (rad/s^2)
θ: Travel Angle (rad)
t: Travel time (s)
* $\dot{\omega}$ Calculate with the higher of angular acceleration/deceleration.
The formula for converting from degrees (deg) to radians (rad) is as follows.
rad = deg x (π/180)
Refer to the moment of inertia and travel time. (Pages 250, 252 and 254), Or figure for moment of inertia calculation (P. 263) for calculation.

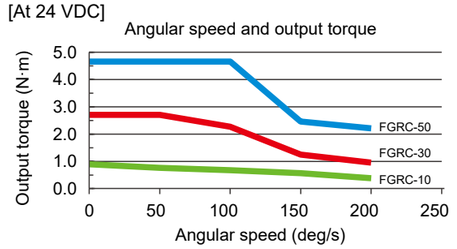
[At 48 VDC]

Angular speed and output torque



[At 24 VDC]

Angular speed and output torque



STEP4 Confirmation of Allowable Load

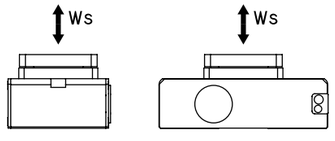
If a load is applied directly to the table, ensure that it is within the allowable values in Table 1.
For combined loads, ensure the total is 1.0 or less.

Table 1

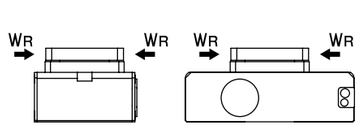
Model No.	W_S max	W_R max	M max
FGRC-10	80	80	2.5
FGRC-30	200	200	5.5
FGRC-50	450	320	10

W_S : Thrust Load (N)
W_R : Radial Load (N)
M : Moment Load (N·m)
$W_S$max : Allowable Thrust Load (N)
W_R max : Allowable Radial Load (N)
Mmax : Allowable moment load (N·m)

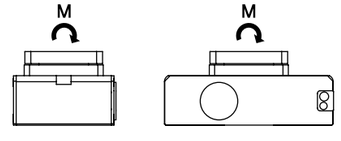
①Thrust load (axial load)



②Radial load (lateral load)



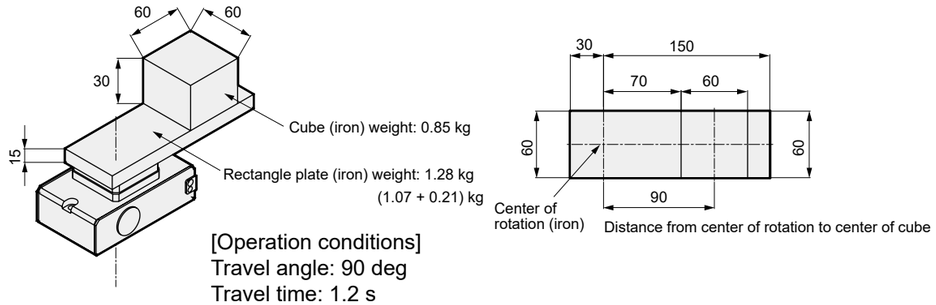
③Moment load



In Case of Combined Load
After calculating each load, substitute into the following formula to confirm.

$$\frac{W_S}{W_S max}+\frac{W_R}{W_R max}+\frac{M}{Mmax}\leq 1.0$$

Selection Example [Horizontal]



[Operation conditions]
Travel angle: 90 deg
Travel time: 1.2 s
Angular acceleration/deceleration: 1000 deg/s^2 (0.1G)

STEP1 Confirmation of Positioning Time

From the operating conditions, the positioning time is 1.09 s.
Since the required travel time is 1.2 s or less, proceed to the next step.

Set value

Angular Velocity	V	90 deg/s
Angular Acceleration	a	1000 deg/s^2
Angular Deceleration	d	1000 deg/s^2
Travel Angle	S	90 deg

Calculated value

Reached Angular Velocity	Vmax	300 deg/s
Effective Angular Velocity	Vb	90 deg/s
Acceleration Time	Ta	0.09 s
Deceleration Time	Td	0.09 s
Constant Speed Time	Tc	0.91 s
Positioning Time	T	1.09 s

STEP2 Confirmation of Moment of Inertia of Load

Calculate the moment of inertia I, and then temporarily select a model from the angular speed and allowable moment of inertia graph.

[Rectangular Plate]

$$I1=1.07\times\frac{4\times0.15^2+0.06^2}{12}+0.21\times\frac{4\times0.03^2+0.06^2}{12}=0.00847$$

[Cube]

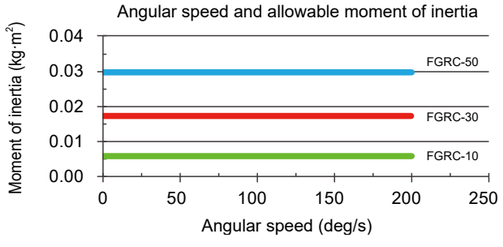
$$I2=0.85\times\left[\frac{0.06^2+0.06^2}{12}+0.09^2\right]=0.00740$$

The total moment of inertia I is as follows.

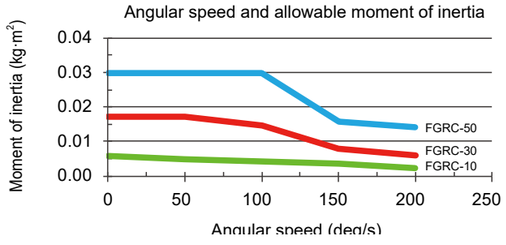
$I = I1+I2=0.01587$ (kg·m^2)...①

From the angular speed and allowable moment of inertia graph, select FGRC-30 [48 VDC] that satisfies the allowable moment of inertia at angular speed 90 deg/s.

[At 48 VDC]



[At 24 VDC]



STEP3 Confirmation of Required Torque

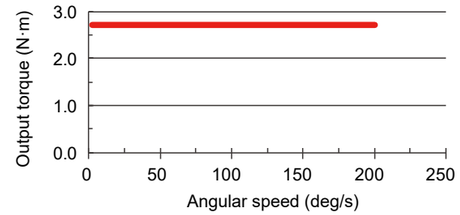
Calculate the load torque and confirm that it is within the range in the graph of angular speed and output torque.
Set acceleration/deceleration from a = d = 1000 deg/s^2

$$\dot{\omega}=1000\times\frac{\pi}{180}$$

$=17.45$ rad/s^2...②

① and ② inertia load (TA) is
$T_A=3\times0.01587\times17.45$
$=0.831$ (N·m)

[At 48 VDC] [FGRC-30]



The intersection of angular velocity V = 90 (deg/s) and TA = 0.598 (N·m) is inside the graph, so it is usable.

STEP4 Confirmation of Allowable Load

Finally, check if value is within allowable load range after load value applied to table is calculated.

[Thrust Load]
Total weight
1.07+0.21+0.85=2.13(kg)
Thus, thrust load (Ws)
Ws = 2.13 × 9.8 = 20.9 (N)

[Radial Load]
Since no radial load is applied
$W_R = 0$ (N)

[Moment Load]
Moment load (M_1) of rectangle plate
1.07×9.8=10.5 (N)
0.21 × 9.8 = 2.06 (N)
Therefore,
$M_1 = 10.5 \times 0.075 - 2.06 \times 0.015 = 0.76$ (N·m)

Moment load (M_2) of rectangular parallelepiped
0.85×9.8=8.3 (N)
Therefore,
$M_2 = 8.3 \times 0.09 = 0.75$ (N·m)

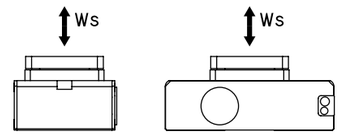
Therefore, the sum of M1 and M2
M=0.76+0.75=1.51 (N·m)

$$\frac{W_S}{W_{Smax}}+\frac{W_R}{W_{Rmax}}+\frac{M}{Mmax}$$

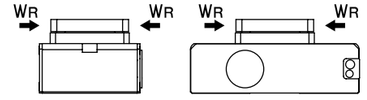
$$\frac{20.9}{200}+\frac{0}{200}+\frac{1.51}{5.5}=0.4\leq 1.0$$

From the above, since the total load value is within the allowable load value, FGRC-30 can be selected.

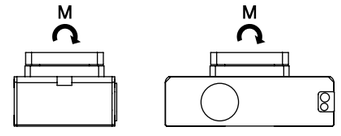
①Thrust load (axial load)



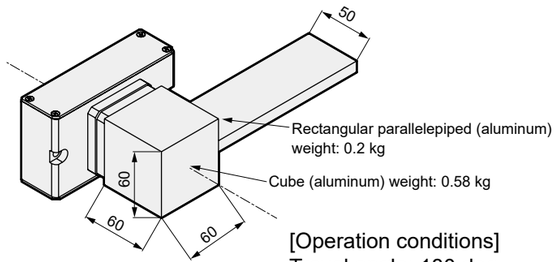
②Radial load (axial load)



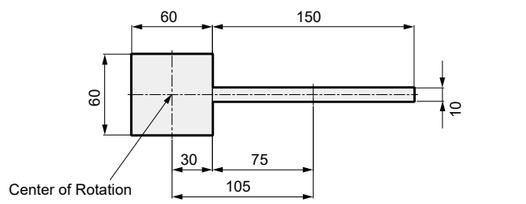
③Moment load (axial load)



Selection Example [Wall Mount]



Load Details



(Distance from center of rotation to rectangle plate load center)

[Operation conditions]
Travel angle: 180 deg
Travel time: 1.8 s
Angular acceleration/deceleration: 1000 deg/s^2 (0.1G)

STEP1 Confirmation of Positioning Time

From the operating conditions, the positioning time is 1.57 s.
This is lower than the required travel time of 1.8 s, so proceed to the next step.

Set value

Angular Velocity	V	125 deg/s
Angular Acceleration	a	1000 deg/s^2
Angular Deceleration	d	1000 deg/s^2
Travel Angle	S	180 deg

Calculated value

Reached Angular Velocity	Vmax	424.3 deg/s
Effective Angular Velocity	Vb	125 deg/s
Acceleration Time	Ta	0.125 s
Deceleration Time	Td	0.125 s
Constant Speed Time	Tc	1.315 s
Positioning Time	T	1.57 s

STEP2 Confirmation of Moment of Inertia of Load

Calculate the moment of inertia I, and then temporarily select a model from the angular speed and allowable moment of inertia graph.

[Rectangular Parallelepiped]

$$I_1 = 0.2 \times \frac{(0.01^2 + 0.15^2)}{12} + 0.2 \times 0.105^2 = 0.00258\ (kg \cdot m^2)$$

[Cube]

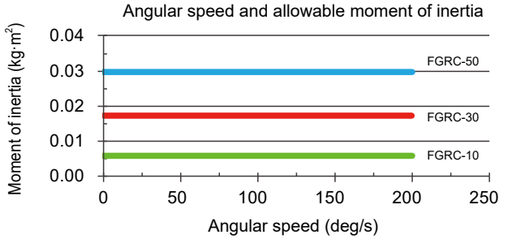
$$I_2 = 0.58 \times \frac{(0.06^2 + 0.06^2)}{12} = 0.00035\ (kg \cdot m^2)$$

The total moment of inertia is as follows.

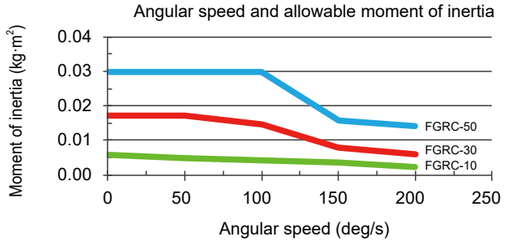
$I = I_1 + I_2 = 0.00293\ (kg \cdot m^2)$...①

From the angular speed and allowable moment of inertia graph, select FGRC-10 [48 VDC] that satisfies the allowable moment of inertia at angular speed 125 deg/s.

[At 48 VDC]



[At 24 VDC]



STEP3 Confirmation of Required Torque

Calculate the load torque and confirm that it is within the range in the graph of angular speed and output torque.
Calculate the load torque using the gravitational resistance load (T_R) and inertia load (T_A).

[Resistive Load]

$T_R = 3 \times 0.2 \times 9.8 \times 0.105$
$= 0.617\ (N \cdot m)$ ...②

[Inertial Load]

Set acceleration/deceleration from a = d = 1000 deg/s²

$$\dot{\omega} = 1000 \times \frac{\pi}{180}$$

$= 17.45\ rad/s^2$...③

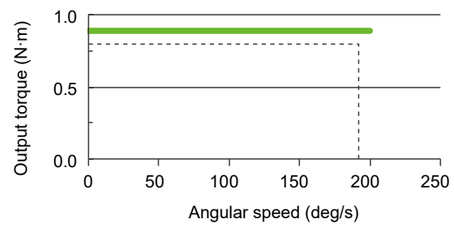
① and ③ inertia load (T_A) is

$T_A = 3 \times 0.00293 \times 17.45$
$= 0.153\ (N \cdot m)$ ...④

② and ④ thereby total load torque (T) is

$T = T_R + T_A = 0.617 + 0.153 = 0.77\ (N \cdot m)$

[At 48 VDC] [FGRC-10]

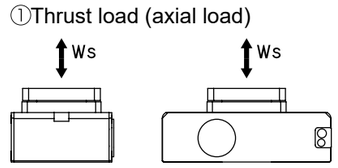


The intersection of angular velocity V = 180 (deg/s) and T = 0.77 (N·m) is inside the graph, so it is usable.

STEP4 Confirmation of Allowable Load

Finally, check if value is within allowable load range after load value applied to table is calculated.

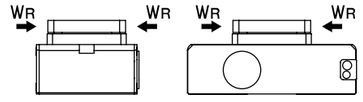
①Thrust load (axial load)



[Thrust Load]
Since no thrust load is applied
$W_S = 0$ (N)

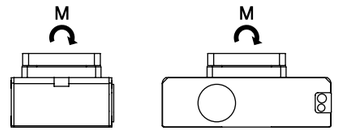
[Radial Load]
Total weight
0.2+0.58=0.78 (kg)
Therefore, radial load (W_R) is
$W_R = 0.78 \times 9.8 = 7.64$ (N)

②Radial load (axial load)



[Moment Load]
Moment load (M) from the figure below right
$M = 0.03 \times (0.2 + 0.58) \times 9.8 = 0.23$ (N·m)

③Moment load (axial load)



Therefore,

$$\frac{W_S}{W_{Smax}} + \frac{W_R}{W_{Rmax}} + \frac{M}{M_{max}}$$

$$\frac{0}{80} + \frac{7.64}{80} + \frac{0.23}{2.5} = 0.19 \leq 1.0$$

The total load value is within the allowable load value.
FGRC-10 can be selected.

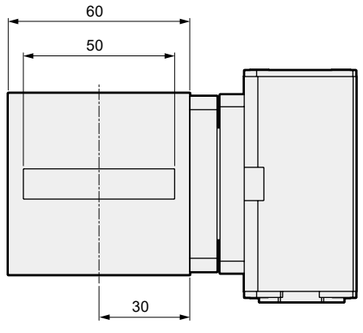
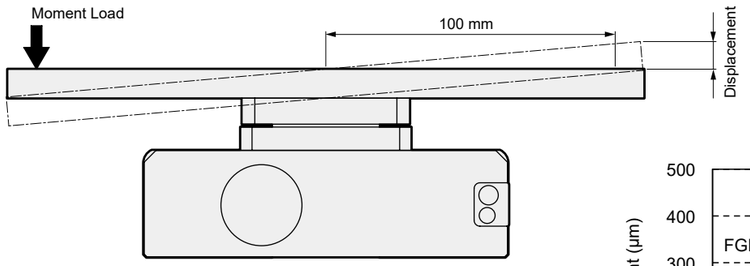
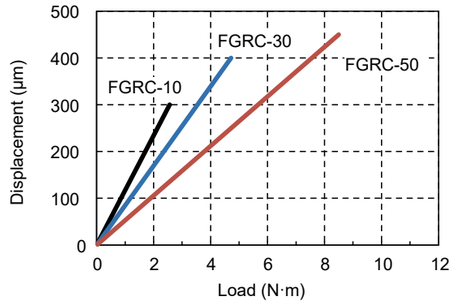


Table deflection *Reference value

Displacement of the table at a point 100 mm away from the center of rotation when a moment load is applied to the FGRC. (It is assumed that the table is in a non-rotating stationary state.)
Table Displacement Amount





Runout accuracy: Displacement when 180 deg is moved * Reference value

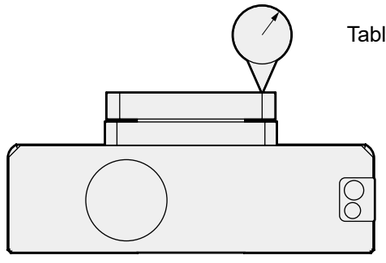


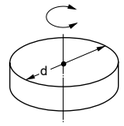
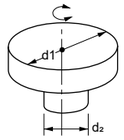
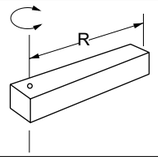
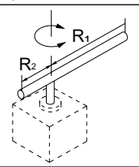
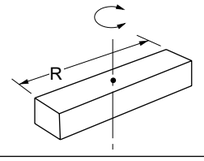
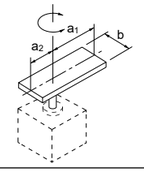
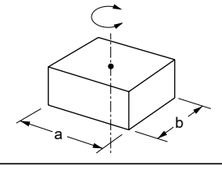
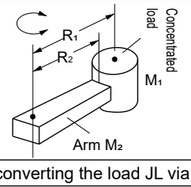
Table top surface runout

(mm)

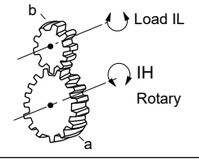
Measurement Location	FGRC
Runout of the top surface of the table	0.1

Diagram for calculating moment of inertia

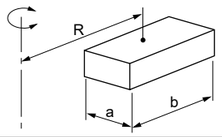
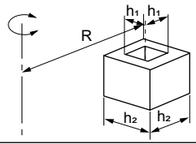
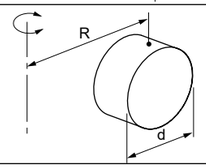
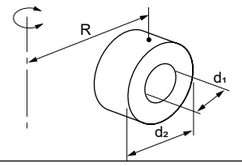
When the rotating shaft passes through the workpiece

Shape	Diagram	Required Items	Moment of inertia I kg·m²	Radius of gyration	K_1^2	Remarks
Dial plate		● Diameter d (m) ● Weight M (kg)	$I = \frac{Md^2}{8}$	$\frac{d^2}{8}$		● No mounting direction ● For sliding use, contact CKD.
Stepped disc		● Diameter d_1 (m) d_2 (m) ● Weight d_1 section M_1 (kg) d2 section M_2 (kg)	$I = \frac{1}{8}(M1d_1^2 + M_2d_2^2)$	$\frac{d_1^2 + d_2^2}{8}$		● Ignore when the d_2 section is extremely small compared to the d_1 section
Bar (center of rotation at end)		● Bar length R (m) ● Weight M (kg)	$I = \frac{MR^2}{3}$	$\frac{R^2}{3}$		● Mounting direction is horizontal ● Oscillating time changes when the mounting direction is vertical
Thin rod		● Bar length R_1 R_2 ● Weight M_1 M_2	$I = \frac{M_1/R_1^2}{3} + \frac{M_2/R_2^2}{3}$	$\frac{R_1^2 + R_2^2}{3}$		● Mounting direction is horizontal ● Oscillating time changes when the mounting direction is vertical
Bar (center of rotation at center of gravity)		● Bar length R (m) ● Weight M (kg)	$I = \frac{MR^2}{12}$	$\frac{R^2}{12}$		● No mounting direction
Thin rectangle plate (rectangular parallelepiped)		● Plate length a_1 a_2 ● Side length b ● Weight M_1 M_2	$I = \frac{M_1}{12}(4a_1^2 + b^2) + \frac{M_2}{12}(4a_2^2 + b^2)$	$\frac{(4a_1^2+b^2)+(4a_2^2+b^2)}{12}$		● Mounting direction is horizontal ● Oscillating time changes when the mounting direction is vertical
Cuboid		● Side length a (m) b (m) ● Weight M (kg)	$I = \frac{M}{12}(a^2 + b^2)$	$\frac{a^2 + b^2}{12}$		● No mounting direction ● For sliding use, contact CKD.
Concentrated loa		● Shape of concentrated load ● Length to center of gravity of concentrated load R1 ● Arm length R_2 (m) ● Concentrated load weight M1 (kg) ● Arm weight M2 (kg)	$I = M1(R_1^2+k_1^2) + \frac{M_2R_2^2}{3}$	k_1^2 is common Calculate by load shape		● Mounting direction is horizontal ● M_2 is M_1 in comparison toa very small placeis M_2=0 Calculated as It's fine

Method of converting the load JL via gears to the rotary actuator shaft axis

Gear		● Gear Rotary side (tooth number) a Load side (No. of teeth) b ● Inertia of Load Moment N·m	Moment of Inertia of Load around Rotary Shaft $I_H = \left(\frac{a}{b}\right)^2 I_L$			● When gear shape is larger, gear moment of inertia should be considered.

Rotary shaft offsets from workpiece

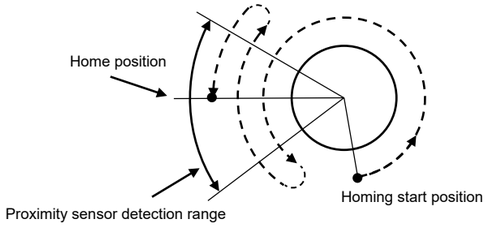
Shape	Diagram	Required Items	Moment of inertia I kg·m2	Remarks
Cuboid		● Side length a (m) ● Distance from rotary shaft to load center b (m) R (m) ● Weight M (kg)	$I = \frac{M}{12}(a^2 + b^2) + MR^2$	● Same for cube
Hollow Rectangular Parallelepiped		● Side length h1 (m) h2 (m) ● Distance from rotary shaft to load center R (m) ● Weight M (kg)	$I = \frac{M}{12}(h_1^2+h_2^2)+MR^2$	● Cross section is for cube only
Cylinder		● Diameter d (m) ● Distance from rotary shaft to load center R (m) ● Weight M (kg)	$I = \frac{Md^2}{16}+MR^2$	
Hollow Cylinder		● Diameter d1 (m) d2 (m) ● Distance from rotary shaft to load center R (m) ● Weight M (kg)	$I = \frac{M}{16}(d_1^2 + d_2^2) + MR^2$	

* When determining the moment of inertia, first model the load, jigs, etc., convert the shape to a simple one, and then perform calculations. In the case of a composite load, calculate the individual moments of inertia and sum them.

Homing Method

● Sensor detection method

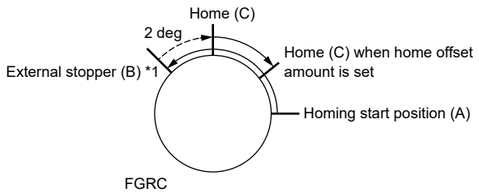
The FGRC series recognizes the home position by detecting the proximity sensor inside the actuator. Therefore, depending on the homing start position, the actuator may move more than one rotation during homing. In addition, with the FGRC-10, after detecting the proximity sensor, the actuator operates within a range of ±45 deg around the sensor. After that, the homing operation is completed.



*The angle at which the unit operates around the sensor varies somewhat for each product due to factors such as how the sensor is fixed.

● Pushing method

When it presses against the external stopper outside the actuator and reaches a certain current value, it recognizes the position reversed by 2 deg from that position as the home position. Please provide the external stopper with sufficient rigidity. If the rigidity is insufficient, a deviation in the home position may occur.



*1 External stoppers and locating jigs are to be prepared by the customer.

MEMO

F Series
FLCR
FGRC
FLSH
FFLD
Ending

To Use This Product Safely

Be sure to read this before use.
Refer to Intro 17 for general information on electric actuators.

Individual Precautions: Electric actuator FGRC Series

During Design / Selection

1. Common

DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a risk of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
This can cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix (including the workpiece) it.
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■ Use within the product's specified operating range.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ If the moving workpiece poses a possible risk to personnel or if fingers could be caught, take safety measures.

■ It may take several seconds to complete an emergency stop, depending on the travel speed and load.

■ If the machine stops in the event of a system failure such as emergency stop or power outage, equipment damage or injury do not occur. Design a safety circuit or device.

■ Install indoors with low humidity.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such an environment will cause damage and malfunction.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
This can cause malfunction or failure.

■ Take possibility of power source breakdown into consideration.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ Use a safe design that takes load fluctuation, rising/lowering operation (wall-mounted), and changes in frictional resistance into consideration. The operating speed will increase, which can cause injury to people or damage to machinery.

■ The pressing torque may decrease during a power outage or similar. Use a safe design that takes this into consideration. When used in a clamping mechanism, the clamping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device to prevent injury to people or damage to machinery.

■ Sudden stops during table rotation may generate load torque larger than the theoretical value. Please design with safety in mind.

■ Backlash may cause vibration when stopping or increased positioning time. When stopping precision is required, use an external stopper, etc., and complete positioning with pressing operation.

Caution

■ Never disassemble or modify the product.

■ The customer is responsible for the compatibility of CKD products with the customer's systems, machines and equipmentfor details.

■ For UL compatibility, use a Class2 power supply unit conforming to UL1310 for the combination DC power supply.

■ Set up the wiring so as not to apply inductive noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply which provides ample capacity based on the number of installed products. If there is not enough capacity, it may malfunction.

■ Fix the fixing cable so that it does not easily move, as it cannot be used in applications involvingrepeated bending. For use in locations involving repeated bending, please use a flexible cable.

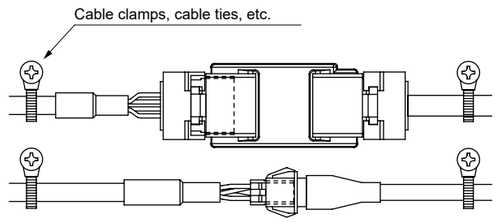
■ Use movable/fixed cables with a bending radius of 63 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ Use a cable within 10 m to connect the IF connector.

■ Do not hold the product's movable parts or cables during transportation and installation.
This can cause injury or disconnection.

■ Do not move the cable leading out of the actuator. Fix the cable part. Furthermore, use cables with a bending radius of 40 mm or more.



■ Do not fix the cable leading out of the actuator in a pulled state.
This may lead to damage to the internal parts of the actuator.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

FGRC Series Model Selection Checklist → CKD (Contact)

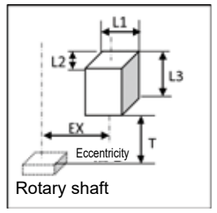
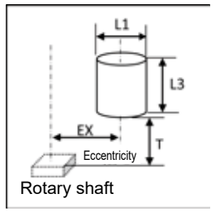
Fill in the form and send to the nearest CKD Sales Office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	
Operating Conditions	Travel Angle deg, travel time: s
	Set angular speed: deg/s
	Set angular acceleration/deceleration: deg/s^2 (set angular acceleration/deceleration time: s)
	Repeatability: ± deg
	Mounting orientation: Horizontal / Wall-mounted / Other
Load Conditions	[Static Load] Pushing Force: N, distance from center of rotation to pressure cone apex: mm
	[Resistance Load] Load fluctuation: No / Yes Weight, external force, frictional force: kg, distance from center of rotation to pressure cone apex: mm
	[Inertial Load] L1 : mm, L2: mm L3 : mm, EX: mm T : mm Quantity: pcs., material:  Rotary shaft  Rotary shaft *Please inquire about other load shapes.
Operating Environment	Ambient Temperature: °C, ambient humidity: %
	Atmosphere:
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

F Series
FLCR
FGRC
FLSH
FFLD
Ending

FLSH

2-Finger Gripper Type

Electric Actuator with Motor Specification

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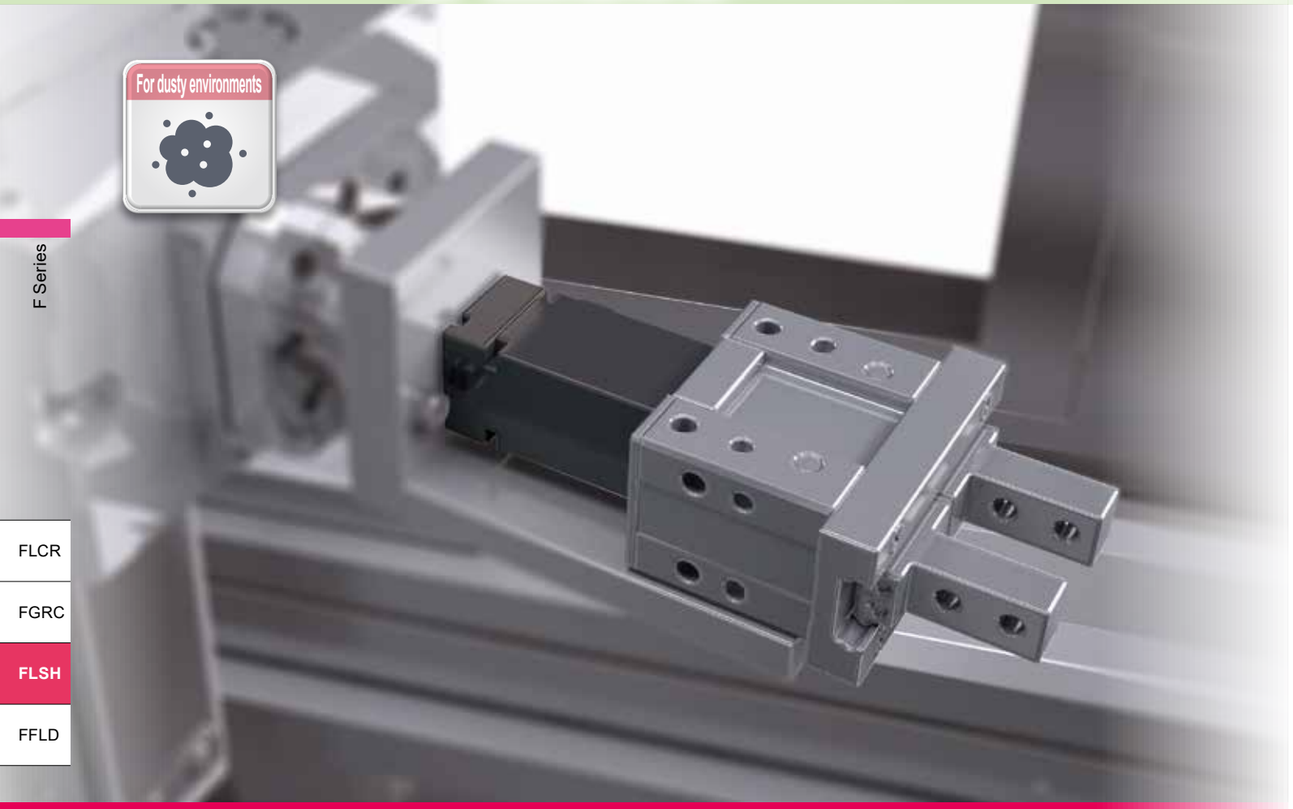
● Specifications/Model No. Notation/Dimensions	
· FLSH-16	274
· FLSH-20	278
· FLSH-25	282
● Model selection	286
● Technical data	288
⚠Precautions for Use	290
Model Selection Check Sheet	292

FLSH System Table

Model No.	Motor Size	Stroke and max. speed (mm/s)						Max. Gripping force (N)
		6 mm	10 mm	12 mm	14 mm	18 mm	22 mm	
FLSH-16	□20	50 mm/s		50				20
FLSH-20	□25		50			50		42
FLSH-25	□25L				50		50	65

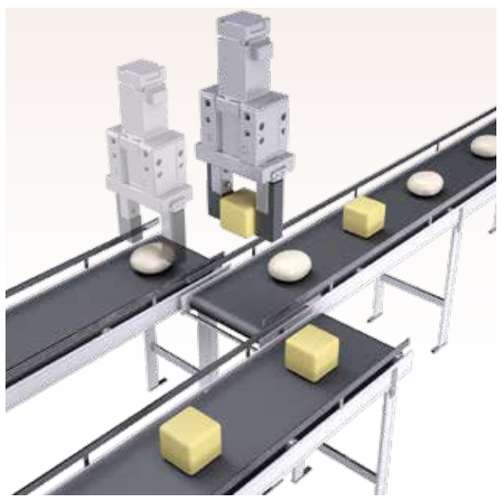
F Series
FLCR
FGRC
FLSH
FFLD
Ending



For soft handling of various workpieces

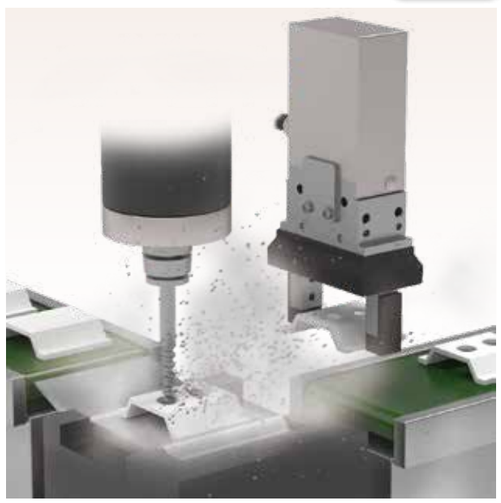
Application examples

Grip deformable various workpieces softly with one actuator



Improved environmental resistance with optional case cover

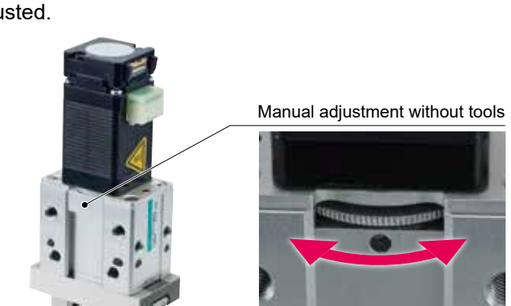
IP50 Compatible



Manual operation and self-lock mechanisms

Easy maintenance

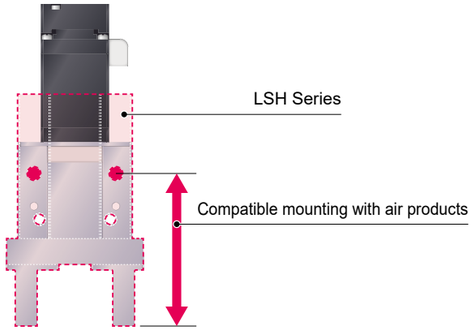
Equipped with a manual operation mechanism that can be operated without tools. The gripping position held by the self-lock can be adjusted.



Dimensions equivalent to air products

Reduced design

Since it is mounting-compatible with the air gripper LSH series, the range of choices at the time of design is expanded. The FLSH series is recommended when handling of various workpieces is required.



Abundant options

High versatility Special environment

Various options such as with case, with rubber cover, and finger shape are supported.

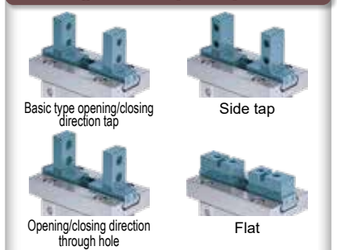
With case

Reduced risk of disconnection with flexible cable

Rubber cover option

Improved environmental resistance (+ with case for IP50)

Finger shape option



Design of Attachments as desired

Electric actuator 2-Finger Gripper

FLSH-16

□20 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLSH - 16 ❶ | G ❷ | H1 ❸ | 06 ❹ | N ❺ | C ❻ | N ❼ - F ❽ | S03 ❾

❶Size

16

❷Connected Controllers *1

G	ECMG/ECG-B
Blank	ECR

❸Screw lead

H1	1.5 mm

❹Stroke

06	6 mm (3 mm one side)
12	12 mm (6 mm one side)

❺Rubber cover *2

N	None
G	Chloroprene rubber
F	Fluororubber

❻Encoder

C	Incremental Encoder

❼Finger

N	Basic type
2	Side tap
3	Through hole
4	Flat

❽Cable lead-out type/directional *3 *4

L	Case outlet	Left side
R	Case outlet	Right surface
T	Case ejector	Top
F	Direct outlet	Front
S	Direct leadout	Side

❾Relay cable *5

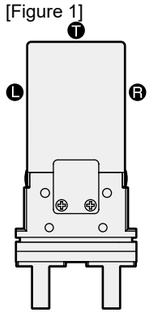
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
*2 When the rubber cover "G, F" has been selected, only the finger "N" can be selected.
*3 Refer to Figure 1 and Figure 2.
*4 When the rubber cover "N" or finger "N" has been selected for the stroke "06", only the cable lead-out type/direction "F, S" can be selected.
*5 For ECR, refer to page 607 for Dimensions diagram , or for ECMG/ECG, refer to page 592.

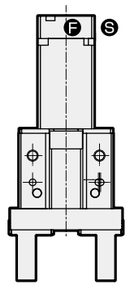
Option Compatibility Table

Option	Model No.	Connected Controller ECMG ECG-B	Connected Controller ECR
❹Stroke	06	●	●
	12	●	
❺Rubber Cover	N	●	●
	G/F	●	
❼Finger	N	●	●
	2/3/4	●	
❽Cable outlet type/direction	L/R/T	●	
	F/S	●	●

[Figure 1]



[Figure 2]



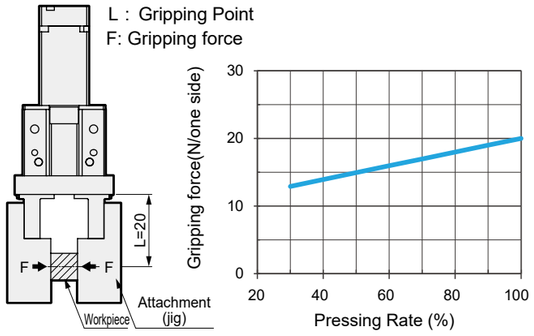
Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□20. Stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Sliding screw	
Stroke	mm	6 (one side 3)	12 (one side 6)
Screw lead	mm	1.5	
Max. gripping force *1	N	20 (one side)	
Open/close speed range	mm/s	5 to 50 (one side)	
Acceleration/deceleration speed range	G	0.1 to 0.3	
Gripping speed range *1	mm/s	5 to 15 (one side)	
Repeatability *2	mm	±0.02	
Positioning repeatability *3	mm	±0.05 (one side)	
Lost Motion	mm	0.3 or less (one side)	
Static Allowable Moment	N·m	MP=0.68, MY=0.68, MR=1.36	
Motor power supply voltage *4		24VDC ±10% or 48 VDC ±10%	
Insulation resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection structure		IP40 (IP50 *5)	
Weight g	ECMG, ECG-B *6	200	220
	ECR	250	-

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 This results in variations in the stop position when repeated positioning to the same point is performed.
*4 48 VDC is compatible only with Controllers ECR.
*5 Rubber cover (G/F), cable outlet type/direction: When case outlet (L/R/T) is selected.

Gripping Force and Pushing Rate

[At 24/48 VDC]



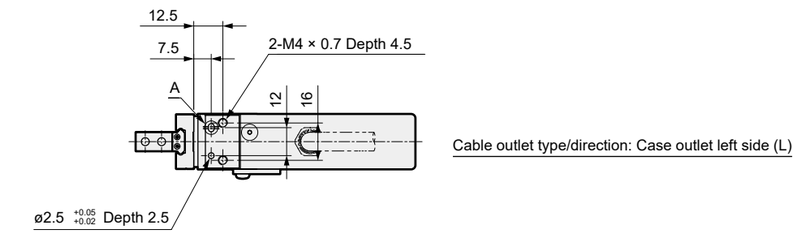
* Gripping force and pressing rate are guidelines. Power supply voltages, individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.
* Speed during gripping operation is 15mm/s. (L=20)

Option weight (*6) (g)

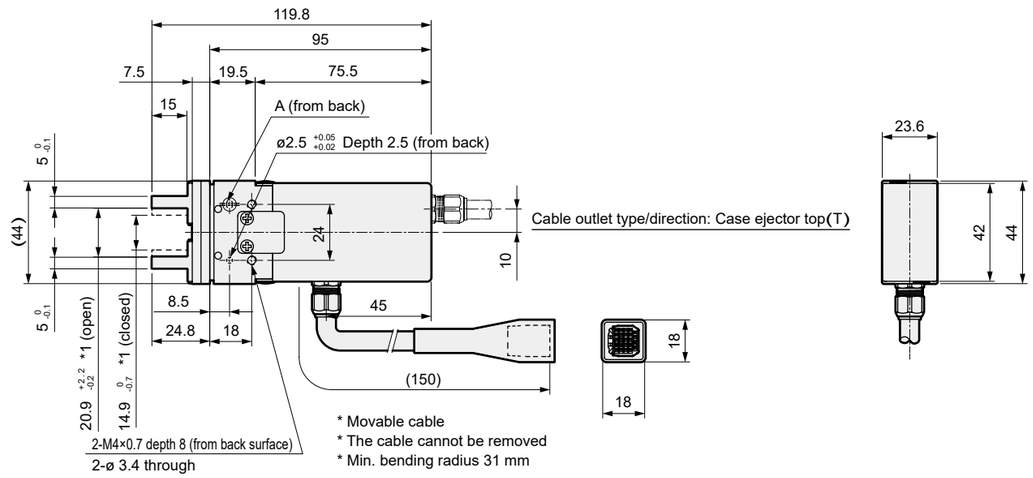
Option	Stroke 06	Stroke 12
Rubber Cover	+0	+10
Case outlet	+100	+100

Outline Dimension Drawing

● FLSH-16GH106NC3-L/R/T *(stroke: 6 mmm, rubber cover: None, Finger: through hole, Cable outlet type/direction: Case outlet)



Cable outlet type/direction: Case outlet left side (L)

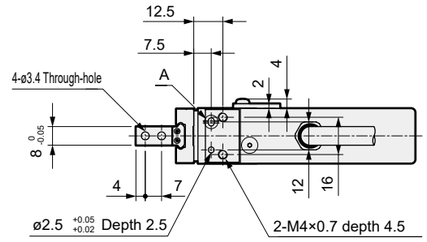


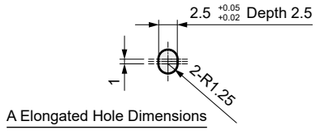
Cable outlet type/direction: Case ejector top(T)

* Movable cable
* The cable cannot be removed
* Min. bending radius 31 mm

*1 Including the zero point return distance

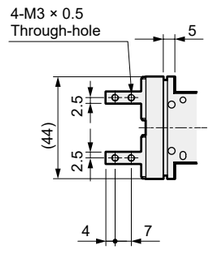
Cable outlet type/direction: Case outlet right surface(R)



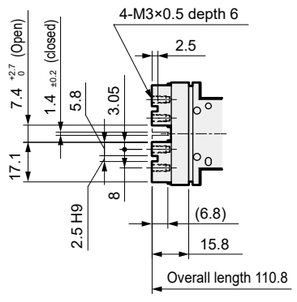


A Elongated Hole Dimensions

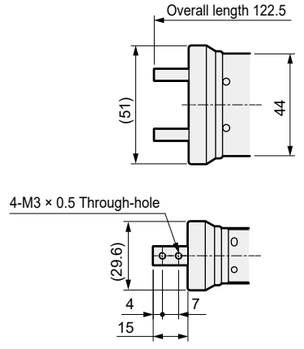
●Finger: Side tap (2)



●Finger: Flat (4)

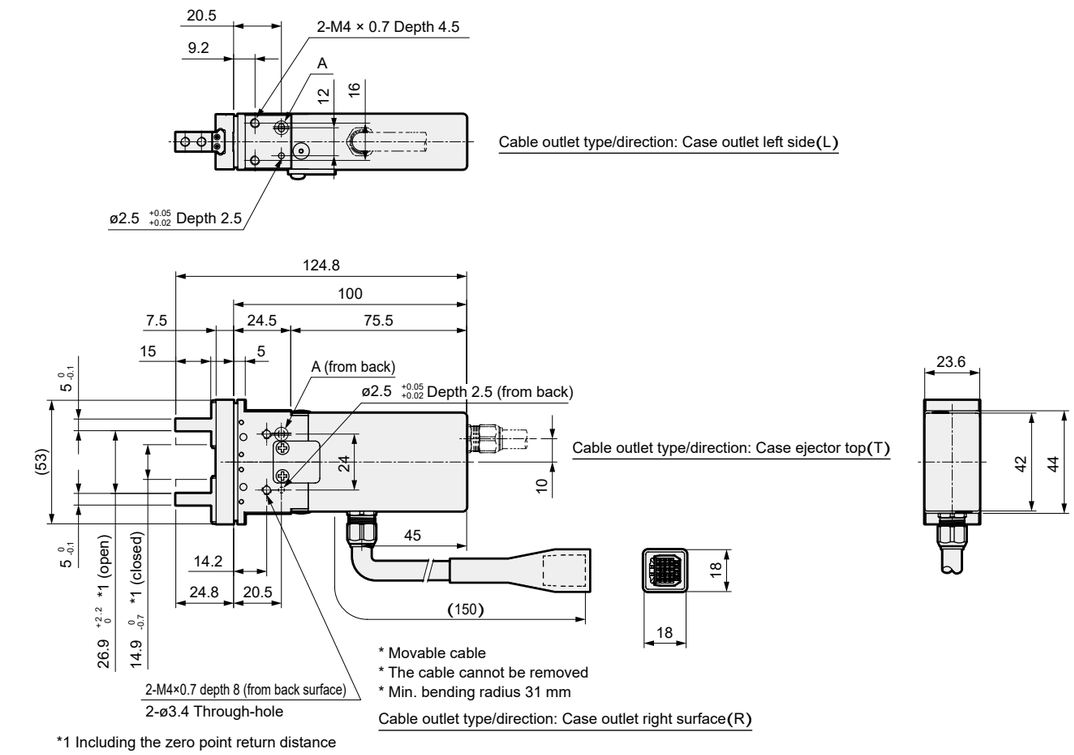


●Rubber cover(G/F)
Finger: Basic(N)

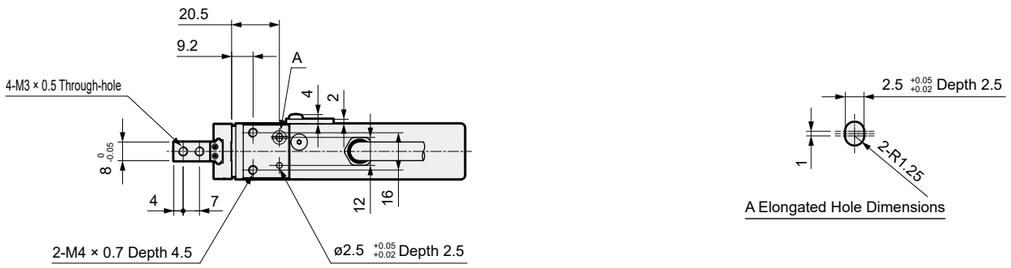


Outline Dimension Drawing

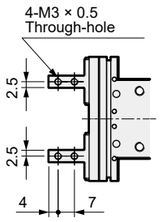
● FLSH-16GH112NCN-L/R/T *(stroke: 12 mmm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Case outlet)



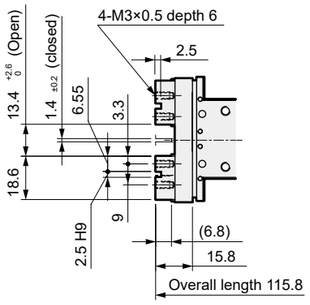
*1 Including the zero point return distance



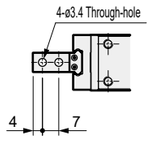
●Finger: Side tap (2)



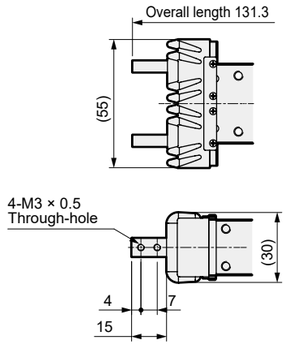
●Finger: Flat (4)



●Finger: Through hole (3)

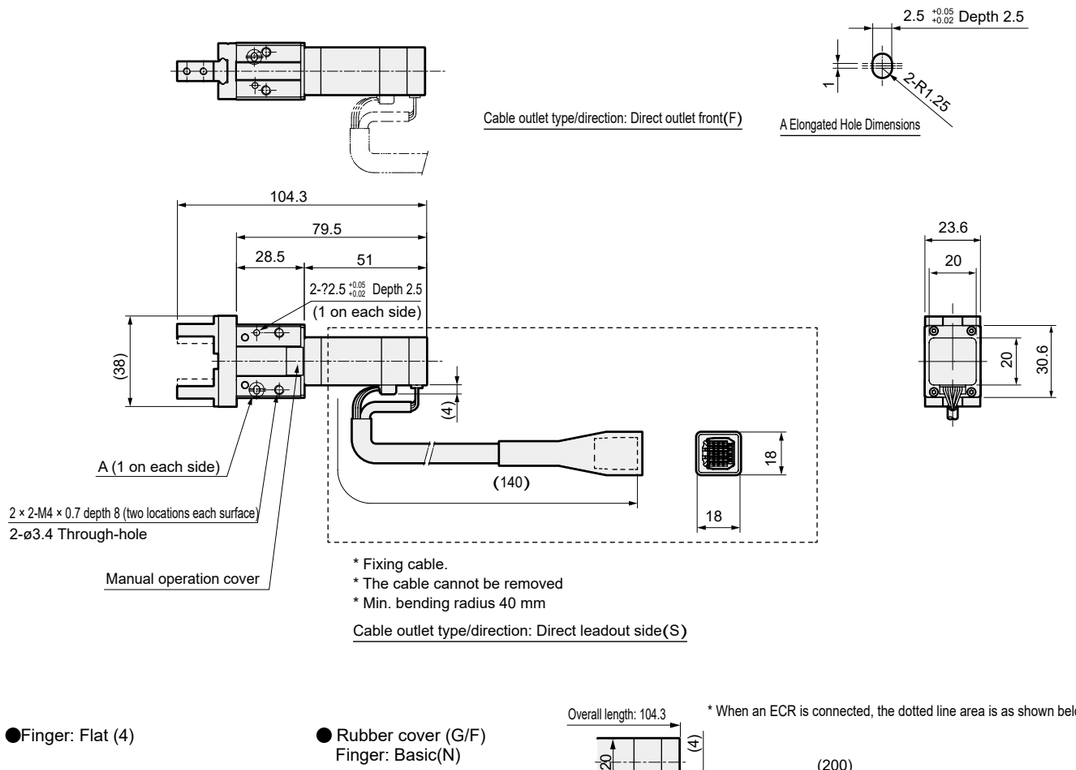


●Rubber cover(G/F)
Finger: Basic(N)

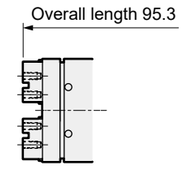


Outline Dimension Drawing

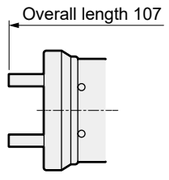
● FLSH-16GH106NCN-F/S * (stroke: 6 mmm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)



●Finger: Flat (4)

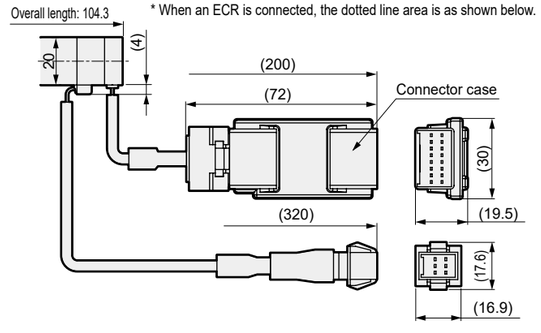


● Rubber cover (G/F)
Finger: Basic(N)

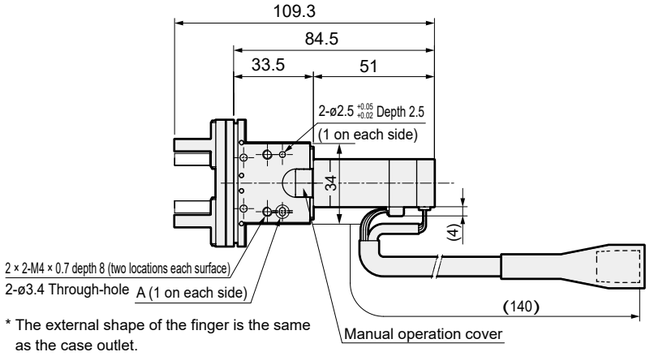


* The external shape of the finger is the same as the case outlet.

* When an ECR is connected, the dotted line area is as shown below.

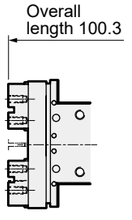


● FLSH-16GH112NCN-F/S *(stroke: 12 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)

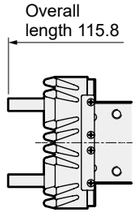


* The external shape of the finger is the same as the case outlet.

●Finger: Flat (4)



●Rubber cover (G/F)
Finger: Basic (N)



Electric actuator 2-Finger Gripper

FLSH-20

□25 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLSH - 20 ❶ | G ❷ | H1 ❸ | 10 ❹ | N ❺ | C ❻ | N ❼ - F ❽ | S03 ❾

❶Size

20

❷Connected Controllers *1

G	ECMG/ECG-B
Blank	ECR

❸Screw lead

H1	1.5 mm

❹Stroke

10	10 mm (5 mm one side)
18	18 mm (9 mm one side)

❺Rubber cover *2

N	None
G	Chloroprene rubber
F	Fluororubber

❻Encoder

C	Incremental Encoder

❼Finger

N	Basic type
2	Side tap
3	Through hole
4	Flat

❽Cable lead-out type/directional *3 *4

L	Case outlet left side
R	Case outlet right surface
T	Case ejector top
F	Direct outlet front
S	Direct leadout side

❾Relay cable *5

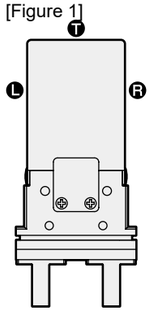
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 529.
*2 When the rubber cover "G, F" has been selected, only the finger "N" can be selected.
*3 Refer to Figure 1 and Figure 2.
*4 When the rubber cover "N" or finger "N" has been selected for the stroke "10", only the cable lead-out type/direction "F, S" can be selected.
*5 For ECR, refer to page 607 for Dimensions diagram , or for ECMG/ECG, refer to page 592.

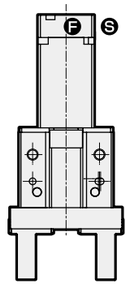
Option Compatibility Table

Option	Model No.	Connected Controller: ECMG ECG-B	Connected Controller: ECR
❹Stroke	10	●	●
	18	●	
❺Rubber Cover	N	●	●
	G/F	●	
❼Finger	N	●	●
	2/3/4	●	
❽Cable outlet type/direction	L/R/T	●	
	F/S	●	●

[Figure 1]



[Figure 2]



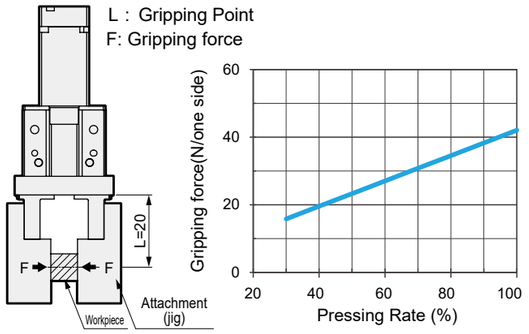
Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□25 Stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Sliding screw	
Stroke	mm	10 (one side 5)	18 (one side 9)
Screw lead	mm	1.5	
Max. gripping force *1	N	42 (one side)	
Open/close speed range	mm/s	5 to 50 (one side)	
Acceleration/deceleration speed range	G	0.1 to 0.3	
Gripping speed range *1	mm/s	5 to 15 (one side)	
Repeatability *2	mm	±0.02	
Positioning repeatability *3	mm	±0.05 (one side)	
Lost Motion	mm	0.3 or less (one side)	
Static Allowable Moment	N·m	MP=1.32, MY=1.32, MR=2.65	
Motor power supply voltage *4		24VDC ±10% or 48 VDC ±10%	
Insulation resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection structure		IP40 (IP50 *5)	
Weight g	ECMG, ECG-B *6	380	440
	ECR	380	-

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 This results in variations in the stop position when repeated positioning to the same point is performed.
*4 48 VDC is compatible only with Controllers ECR.
*5 Rubber cover (G/F), cable outlet type/direction: When case outlet (L/R/T) is selected.

Gripping Force and Pushing Rate

[At 24/48 VDC]



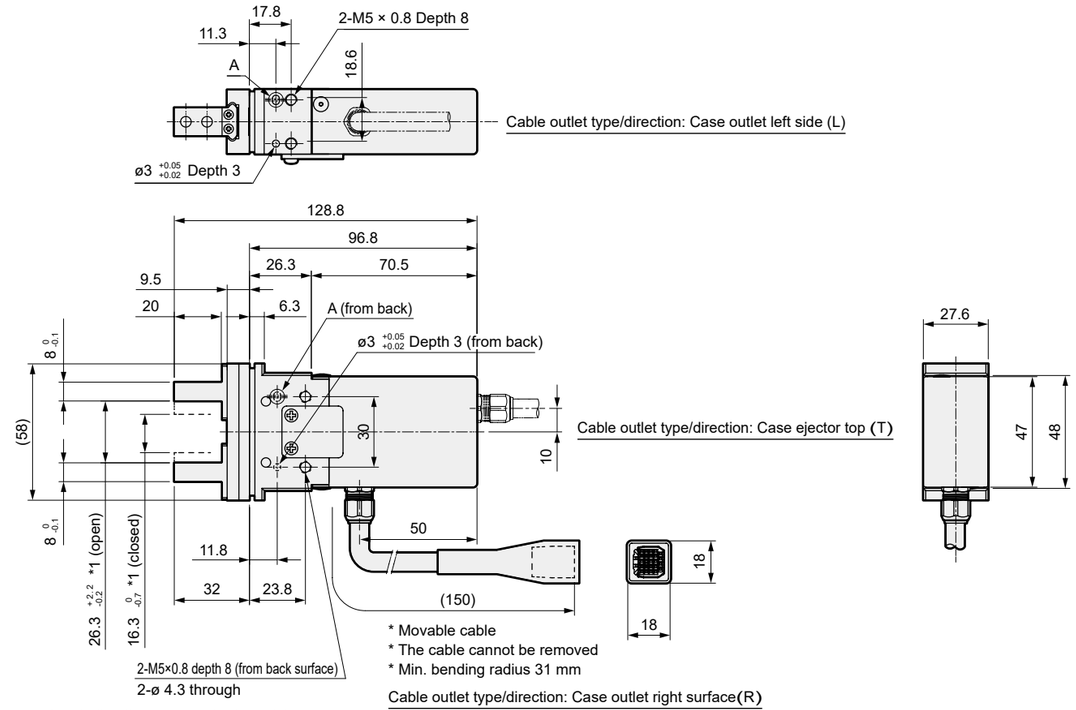
* Gripping force and pressing rate are guidelines. Even with the same pushing rate, errors will occur with the actual numbers due to differences in power supply voltage, individual differences in motors, and variations in mechanical efficiency.
* Speed during gripping operation is 15mm/s. (L=20)

Option weight (*6) (g)

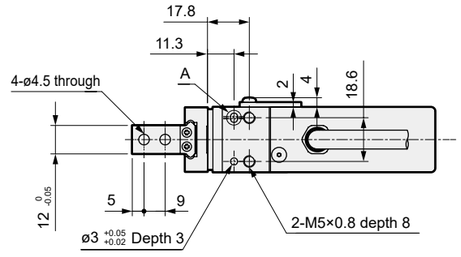
Option	Stroke 10	Stroke 18
Rubber Cover	+10	+20
Case outlet	+110	+110

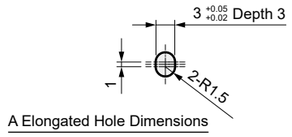
Outline Dimension Drawing

● FLSH-20GH110NC3-L/R/T *(stroke: 10 mmm, rubber cover: None, Finger: through hole, Cable outlet type/direction: Case outlet)



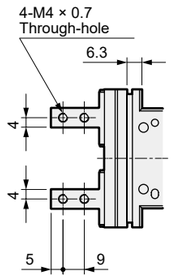
*1 Including the zero point return distance



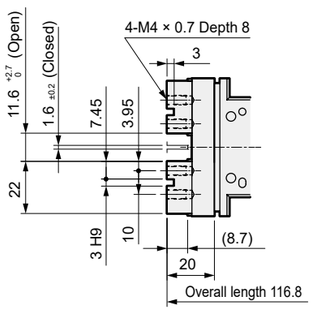


A Elongated Hole Dimensions

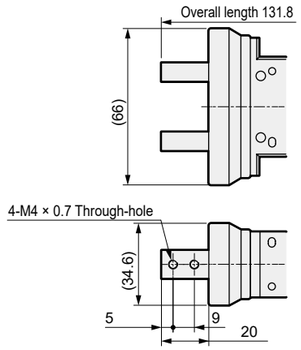
●Finger: Side tap (2)



●Finger: Flat (4)

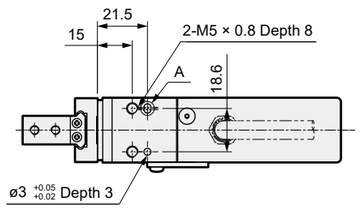


●Rubber cover(G/F)
Finger: Basic(N)

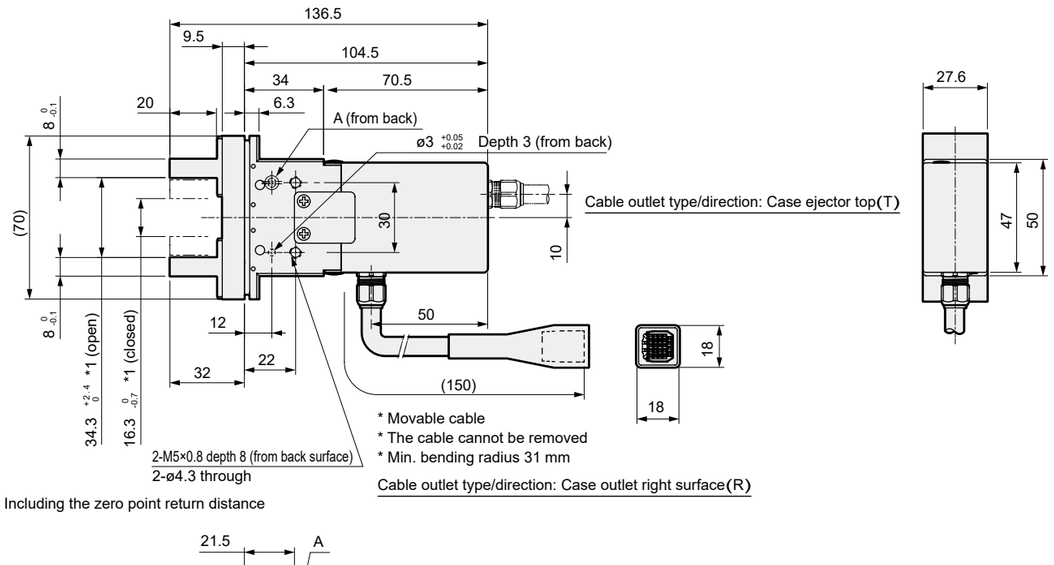


Outline Dimension Drawing

● FLSH-20GH118NCN-L/R/T *(stroke: 18 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Case outlet)



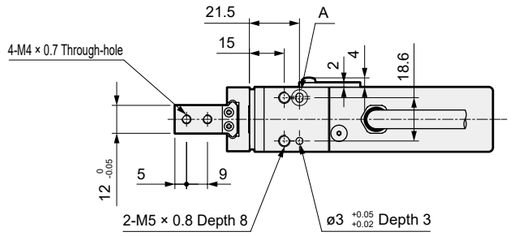
Cable outlet type/direction: Case outlet left side (L)

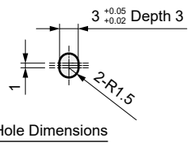


Cable outlet type/direction: Case ejector top(T)

Cable outlet type/direction: Case outlet right surface(R)

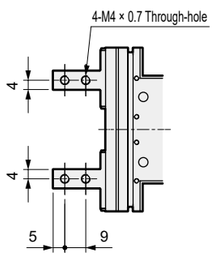
*1 Including the zero point return distance



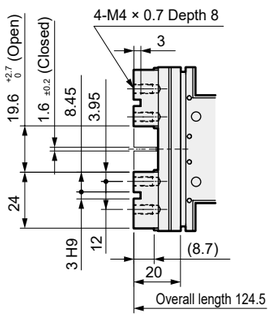


A Elongated Hole Dimensions

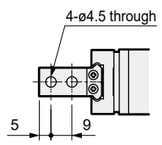
●Finger: Side tap (2)



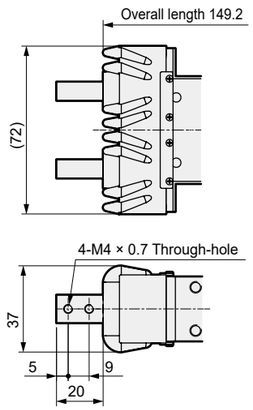
●Finger: Flat (4)



●Finger: Through hole (3)

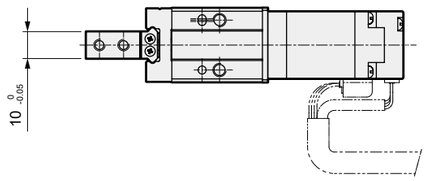


●Rubber cover(G/F)
Finger: Basic(N)

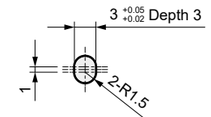


Outline Dimension Drawing

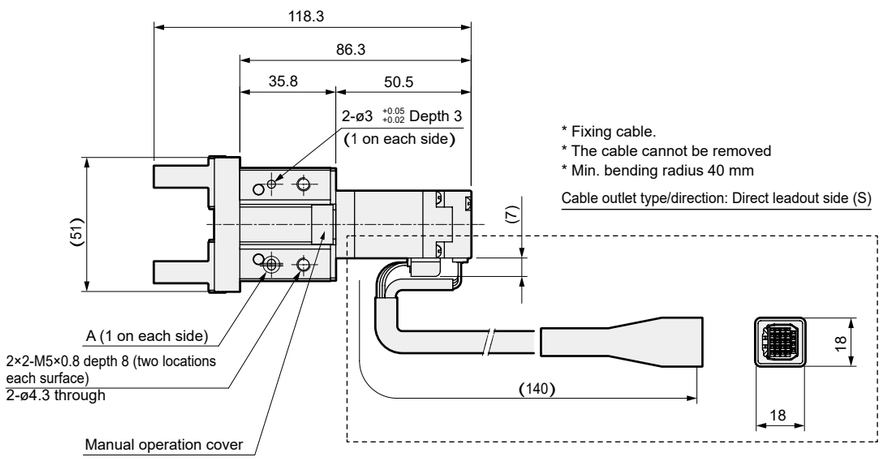
● FLSH-20GH110NCN-F/S *(stroke: 10 mmm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)



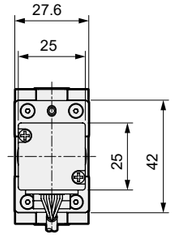
Cable outlet type/direction: Direct outlet front (F)



A Elongated Hole Dimensions

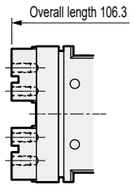


Cable outlet type/direction: Direct leadout side (S)

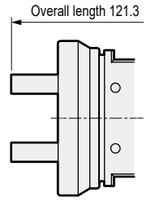


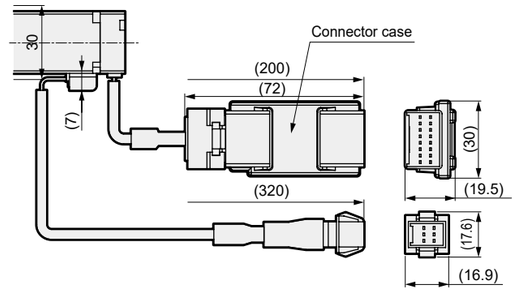
* When an ECR is connected, the dotted line area is as shown below.

●Finger: Flat (4)



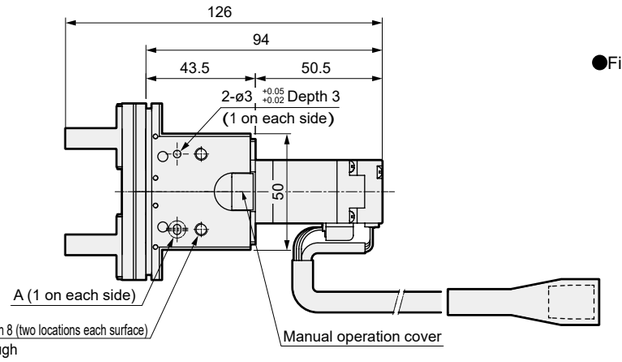
●Rubber cover (G/F)
Finger: Basic(N)



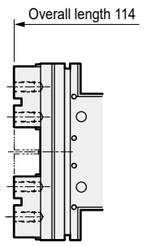


* The external shape of the finger is the same as the case outlet.

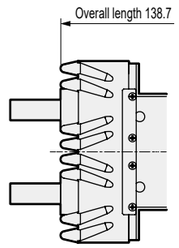
● FLSH-20GH118NCN-F/S *(stroke: 18 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)



●Finger: Flat (4)



●Rubber cover(G/F)
Finger: Basic(N)



* The external shape of the finger is the same as the case outlet.

Electric actuator 2-Finger Gripper

FLSH-25

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FLSH - 25 G H1 14 N C N - F S03

❶Size
25	

❷Connected Controllers *1
G	ECMG/ECG-B
Blank	ECR

❸Screw lead
H1	1.5 mm

❹Stroke
14	14 mm (7 mm one side)
22	22 mm (11 mm one side)

❺Rubber cover *2
N	None
G	Chloroprene rubber
F	Fluororubber

❻Encoder
C	Incremental Encoder

❼Finger
N	Basic type
2	Side tap
3	Through hole
4	Flat

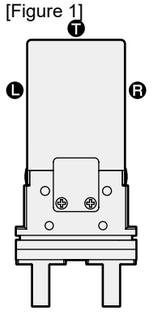
❽Cable lead-out type/directional *3 *4
L	Case outlet	Left side
R	Case outlet	Right surface
T	Case ejector	Top
F	Direct outlet	Front
S	Direct leadout	Side

❾Relay cable *5
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

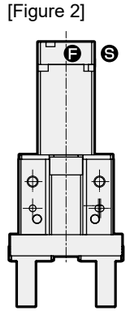
Option Compatibility Table

Option	Model No.	Connected Controller ECMG ECG-B	Connected Controller ECR
❹Stroke	14	●	●
	22	●	
❺Rubber cover	N	●	●
	G/F	●	
❼Finger	N	●	●
	2/3/4	●	
❽Cable output type/direction	L/R/T	●	
	F/S	●	●

[Figure 1]



[Figure 2]



*1 Select the controller from page 529.
*2 When the rubber cover "G, F" has been selected, only the finger "N" can be selected. When the rubber cover "G, F" is selected, only the stroke "14" can be selected.
*3 Refer to Figure 1 and Figure 2.
*4 When the rubber cover "N" or finger "N" has been selected for stroke "14", only the cable lead-out type/direction "F, S" can be selected.
*5 The relay cable Dimensions diagram is For ECR,P. 607or For ECMG/ECG, P. 592.

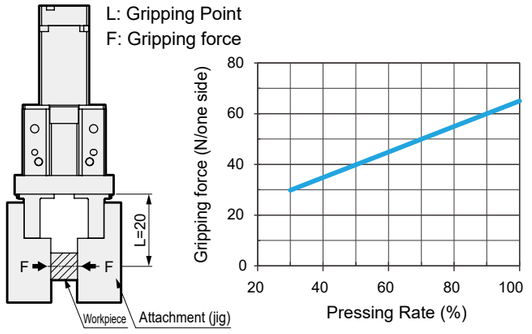
Specifications

Connected Controller		ECMG, ECG-B, ECR	
Motor		□25L stepping motor	
Encoder Type		Incremental Encoder	
Drive Method		Sliding screw	
Stroke	mm	14 (one side 7)	22 (one side 11)
Screw lead	mm	1.5	
Max. gripping force *1	N	65 (one side)	
Open/close speed range	mm/s	5 to 50 (one side)	
Acceleration/deceleration speed range	G	0.1 to 0.3	
Gripping speed range *1	mm/s	5 to 15 (one side)	
Repeatability *2	mm	±0.02	
Positioning repeatability *3	mm	±0.05 (one side)	
Lost Motion	mm	0.3 or less (one side)	
Static Allowable Moment	N·m	MP=1.94, MY=1.94, MR=3.88	
Motor power supply voltage *4		24VDC ±10% or 48 VDC ±10%	
Insulation resistance		10 MΩ, 500 VDC	
Dielectric Strength		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection structure		IP40 (IP50 *5)	
Weight g	ECMG, ECG-B *6	590	630
	ECR	580	-

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 This results in variations in the stop position when repeated positioning to the same point is performed.
*4 48 VDC is compatible only with Controllers ECR.
*5 Rubber cover (G/F), cable outlet type: Direction: When case outlet (L/R/T) is selected.

Gripping Force and Pushing Rate

[At 24/48 VDC]



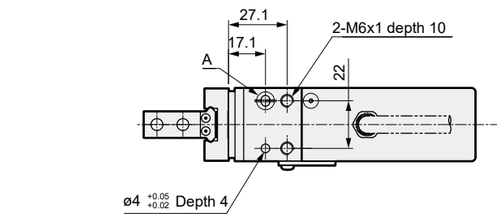
* Gripping force and pressing rate are guidelines. Even with the same pushing rate, errors will occur with the actual numbers due to differences in power supply voltage, individual differences in motors, and variations in mechanical efficiency.
* Speed during gripping operation is 15mm/s. (L=20)

Option weight (*6) (g)

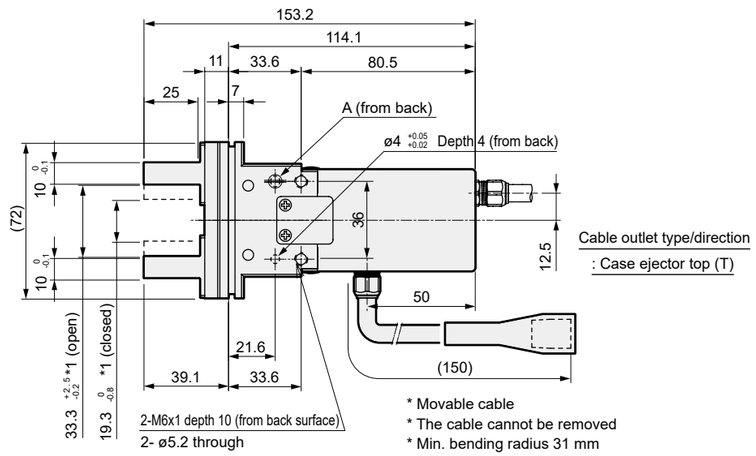
Option	Stroke 14	Stroke 22
Rubber Cover	+20	-
Case outlet	+100	+100

Outline Dimension Drawing

● FLSH-25GH114NC3-L/R/T * (stroke: 14 mm, rubber cover: None, Finger: through hole, Cable outlet type/direction: Case outlet)

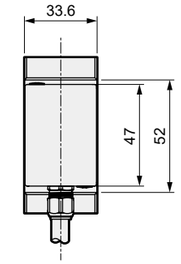


Cable outlet type/direction: Case outlet left side (L)



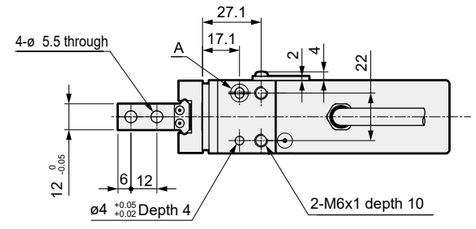
*1 Including the zero point return distance

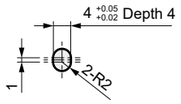
Cable outlet type/direction
: Case ejector top (T)



* Movable cable
* The cable cannot be removed
* Min. bending radius 31 mm

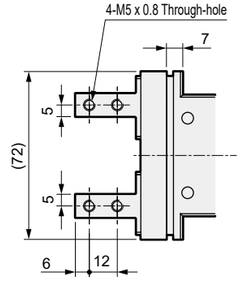
Cable outlet type/direction: Case outlet right side (R)



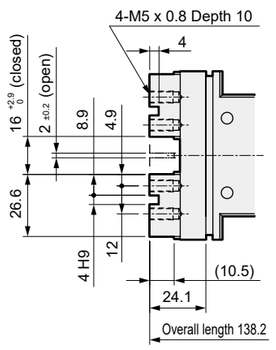


A Elongated Hole Dimensions

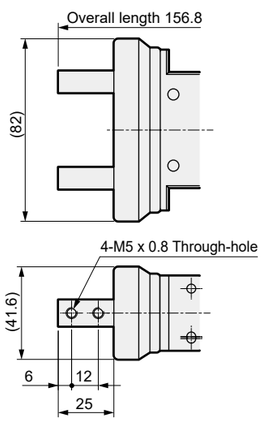
●Finger: Side tap (2)



●Finger: Flat (4)

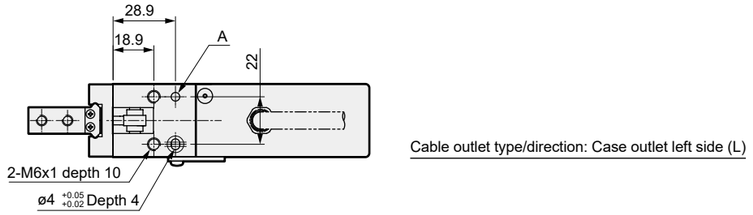


●Rubber cover(G/F)
Finger: Basic(N)

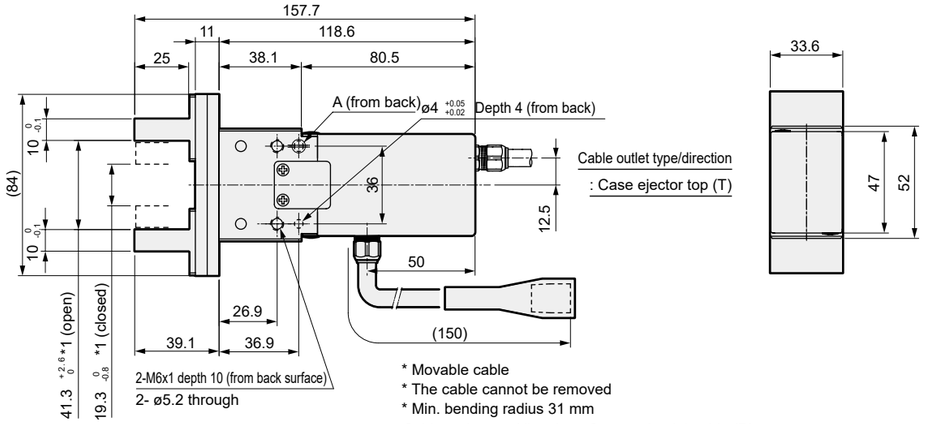


Outline Dimension Drawing

● FLSH-25GH122NCN-L/R/T * (stroke: 22 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Case outlet)



Cable outlet type/direction: Case outlet left side (L)

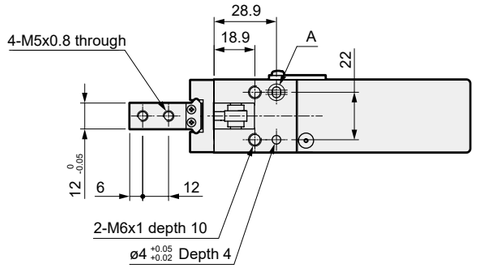


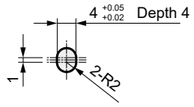
Cable outlet type/direction
: Case ejector top (T)

* Movable cable
* The cable cannot be removed
* Min. bending radius 31 mm

Cable outlet type/direction: Case outlet right side (R)

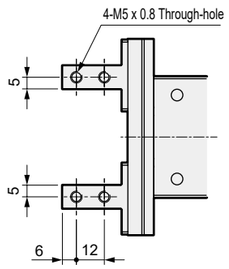
*1 Including the zero point return distance



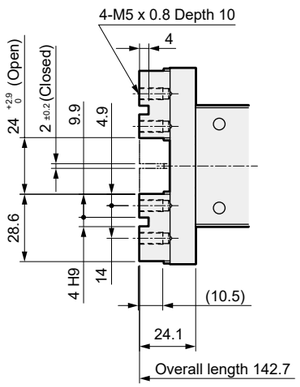


A Elongated Hole Dimensions

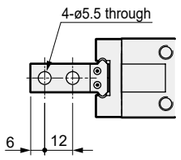
●Finger: Side tap (2)



●Finger: Flat (4)

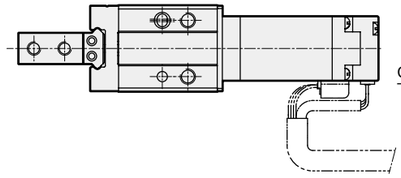


●Finger: Through hole (3)

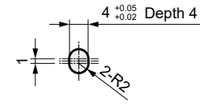


Outline Dimension Drawing

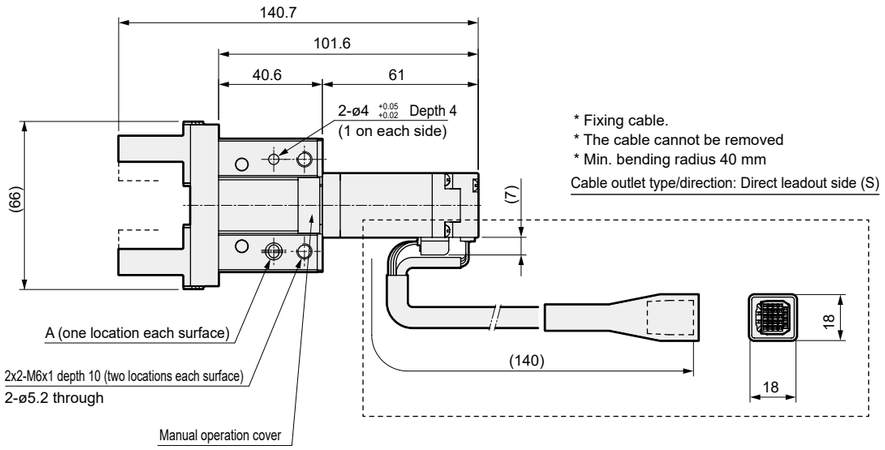
● FLSH-25GH114NCN-F/S * (stroke: 14 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)



Cable outlet type/direction: Direct outlet front (F)

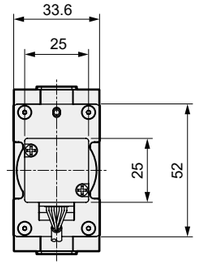


A Elongated Hole Dimensions



* Fixing cable.
* The cable cannot be removed
* Min. bending radius 40 mm

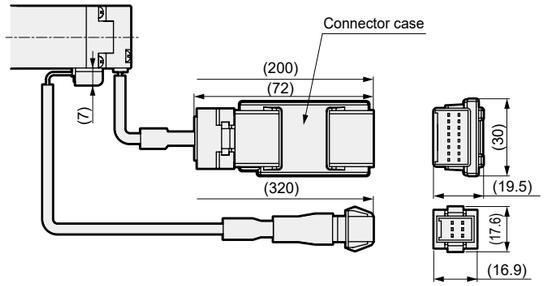
Cable outlet type/direction: Direct leadout side (S)



●Finger: Flat (4)

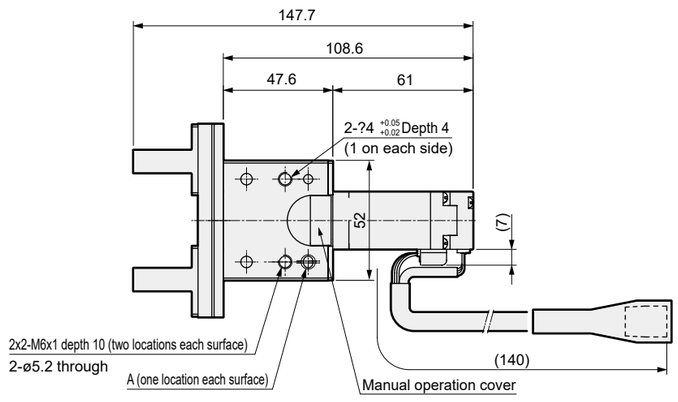
●Rubber cover (G/F)
Finger: Basic (N)

When an ECR * is connected, the dotted line area is as shown below.

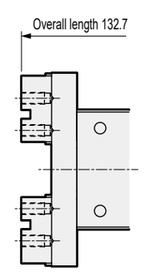


* The external shape of the finger is the same as the case outlet.

● FLSH-25GH122NCN-F/S * (stroke: 22 mm, rubber cover: None, Finger: Basic type, Cable outlet type/direction: Direct outlet)



● Finger: Flat (4)



* The external shape of the finger is the same as the case outlet.

STEP1 Calculation of Required Gripping Force

Calculate the gripping force required to transport the workpiece (weight WL) based on the following.

$$F_w > \frac{W_L x g x K}{n}$$

F_w : Required gripping force (N)
n : Number of Small Fingers = 2
W_L: Workpiece weight [kg]
g : Gravitational acceleration = 9.8 (m/s²)
K : Conveyance Factor
5 [holding only]
10 [normal transport]
20 [suddenly accelerated transport]

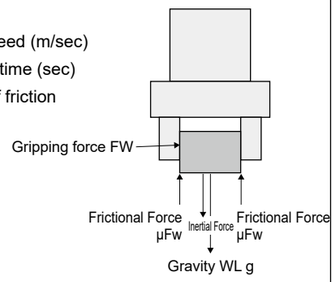
About Conveyance Factor K

Calculation example: When decelerating and stopping in 0.1 second from transport speed of V = 0.75 m/s with friction coefficient μ of workpiece and attachment as 0.1, see below.

Determine the transport coefficient K from the force applied to the workpiece

V: Transport speed (m/sec)
t: Deceleration time (sec)
μ: Coefficient of friction

- Inertial force = W_Lx (V/t)
- Gravity = W_Lg
- Required gripping force F_W $> \frac{WLx(V/t)+W_Lg}{n\mu} = \frac{W_Lx(V/t+g)}{n\mu} = \frac{17.3\ W_L}{2 \times 0.1} = 86.5\ W_L$



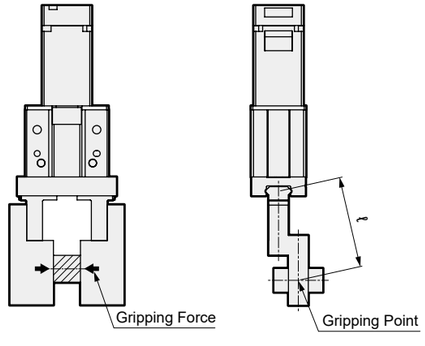
∴ The transport coefficient K at this time is, from the above formula $\frac{W_LxgxK}{n} = 86.5\ W_L$

$$K = \frac{n \times 86.5}{g} = \frac{2 \times 86.5}{9.8} \approx 20$$

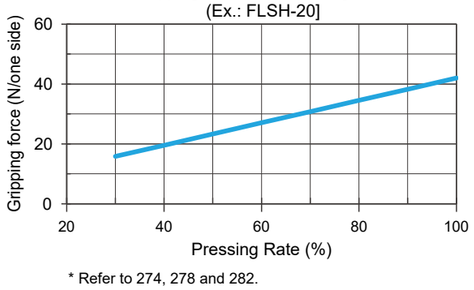
Note) The transport coefficient K needs to allow a margin for impacts during transport, etc. Even if the friction coefficient μ is higher than μ=0.1, set the conveyance factor K to 10 to 20 or more for safety.

STEP2 Provisional selection of model from gripping force graph

Confirm the conditions on the right and provisionally select a model from the gripping force graph. The gripping force changes depending on the gripping point distance ℓ and the pushing rate. Please confirm that sufficient gripping force can be obtained under your conditions of use from the graph.

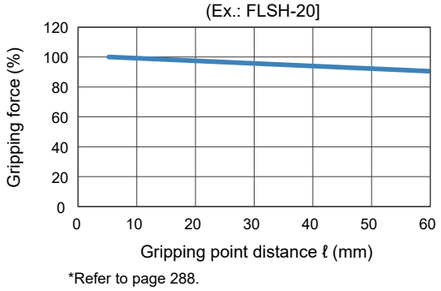


Gripping Force and Pushing Rate
(Ex.: FLSH-20)



* Refer to 274, 278 and 282.

Gripping force and gripping point distance
(Ex.: FLSH-20)

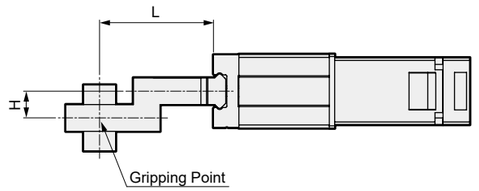


*Refer to page 288.

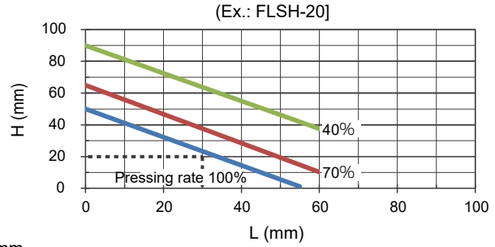
STEP3 Confirmation of Attachment Shape

Please use the gripping point distance within the range of the graph on the right.

Ex) L: 30mm H: 20 mm



Gripping Point Distance and Pushing Rate
(Ex.: FLSH-20]



When FLSH-20 is selected, L: 30 mm, H: The intersection of 20 mm is inside the line with a pressing rate of 100%, so it can be used.

*Refer to page 288.

●Use attachments as short and lightweight as possible.
If they are long and heavy, the inertial force during opening and closing becomes large, which may cause backlash in the fingers or accelerate wear of the finger sliding parts, adversely affecting the service life.
●Minimizing the attachment shape as much as possible within the performance data enables the product to be used for a longer time.
●The weight of the attachment affects the service life, so check that the weight is less than the following value.
W < 1/4h (1 pc.) W: Weight of attachment
h: Product Weight-Finger Gripper

STEP4 Confirmation of External Force on Fingers

If external force is applied to the fingers, please use within the limits of [Table 1].

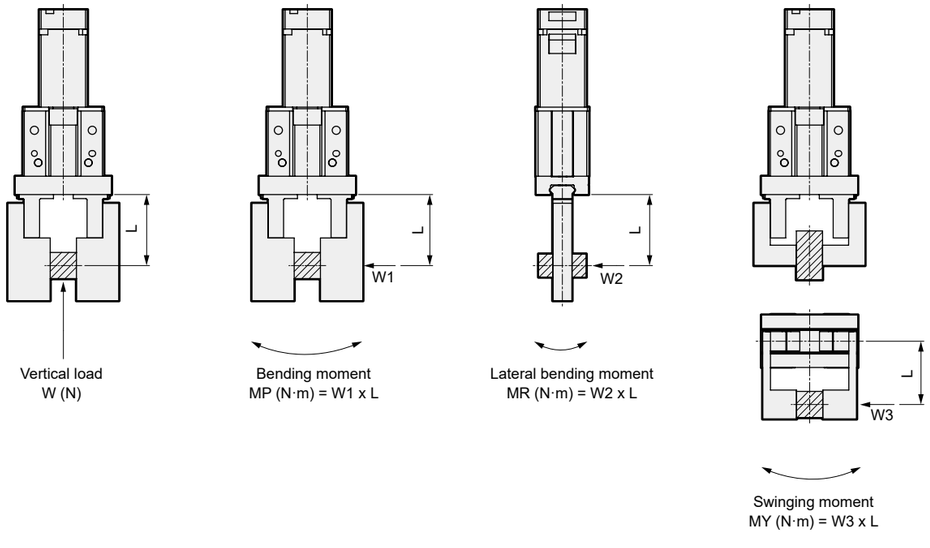


Table 1 Static allowable moment

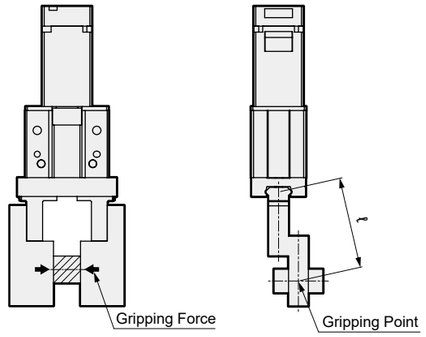
Size	Vertical load Wmax (N)	Bending moment MPmax (N·m)	Lateral bending moment MRmax (N·m)	Swinging moment MYmax (N·m)
FLSH-16	98	0.68	1.36	0.68
FLSH-20	147	1.32	2.65	1.32
FLSH-25	255	1.94	3.88	1.94

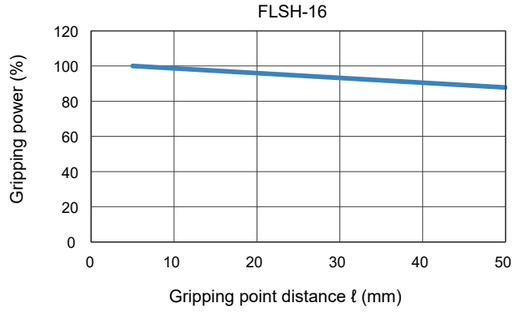
Calculation example)
Model No.: FLSH-20, L: 40 mm when a load W1: 30N is applied
MP = 30 x 40 x 10^{-3} = 1.2 N·m < MPmax = 1.32 N·m

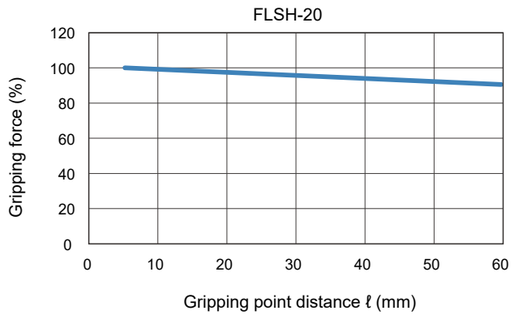
Gripping force and gripping point distance

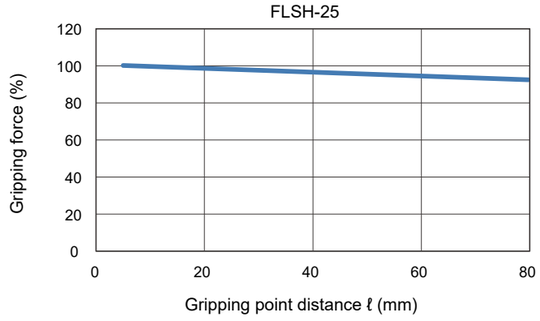
Indicates the gripping force at the gripping point distance ℓ.

Calculated as $\ell = \sqrt{L^2 + H^2}$.

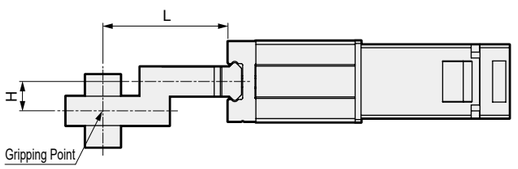


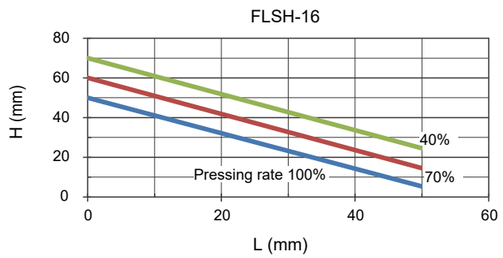


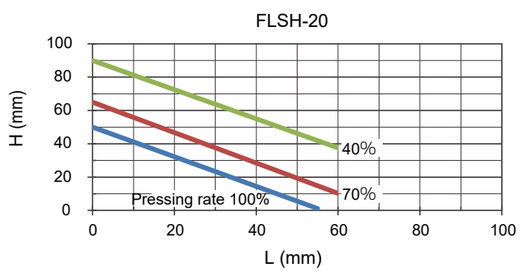


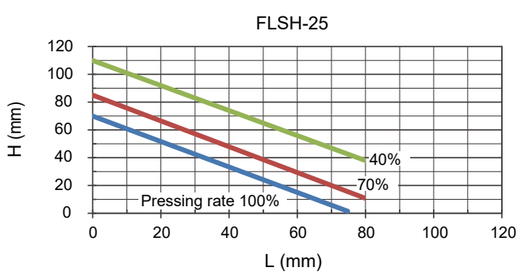


Gripping Point Distance and Pushing Rate









Maintenance Parts

■Maintenance parts (rubber cover)

	Model No.	Applicable Models
Chloroprene rubber	FLSH-16G-06-COVER-G	FLSH-16GH106
	FLSH-20G-10-COVER-G	FLSH-20GH110
	FLSH-25G-14-COVER-G	FLSH-25GH114
	FLSH-16G-12-COVER-G	FLSH-16GH112
	FLSH-20G-18-COVER-G	FLSH-20GH118
Fluoro Rubber	FLSH-16G-06-COVER-F	FLSH-16GH106
	FLSH-20G-10-COVER-F	FLSH-20GH110
	FLSH-25G-14-COVER-F	FLSH-25GH114
	FLSH-16G-12-COVER-F	FLSH-16GH112
	FLSH-20G-18-COVER-F	FLSH-20GH118

To Use This Product Safely

Be sure to read this before use.
Refer to Intro 17 for general information on electric actuators.

Individual Precautions: Electric actuator FLSH Series

During Design / Selection

1. Common

DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a risk of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
This can cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix (including the workpiece) it.
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■ Use within the product's specified operating range.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ If the moving workpiece poses a possible risk to personnel or if fingers could be caught, take safety measures.

■ It may take several seconds to complete an emergency stop, depending on the travel speed and load.

■ If the machine stops in the event of a system failure such as emergency stop or power outage, equipment damage or injury do not occur. Design a safety circuit or device.

■ Install indoors with low humidity.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such an environment will cause damage and malfunction.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
This can cause malfunction or failure.

■ Take possibility of power source breakdown into consideration.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ The gripping force may decrease during a power outage or similar. Use a safe design that takes this into consideration. The gripping force may decrease during a power outage or similar, dislodging the workpiece, so be sure to incorporate a safety device to prevent injury or mechanical damage.

Caution

■ Never disassemble or modify the product.

■ The customer is responsible for the compatibility of CKD products with the customer's systems, machines and equipmentfor details.

■ ULUse an Class2 power supply unit conforming to UL1310 for the combination DC power supply.

■ Set up the wiring so as not to apply inductive noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply which provides ample capacity based on the number of installed products. If there is not enough capacity, it may malfunction.

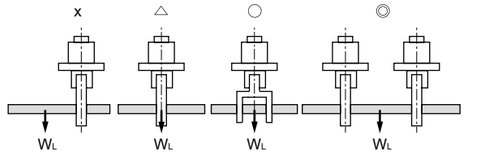
■ Fix the fixing cable so that it does not easily move, as it cannot be used in applications involvingrepeated bending. For use in locations involving repeated bending, please use a flexible cable.

■ Use a movable/fixed cable with a bending radius of 63 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ Use a cable within 10 m to connect the IF connector.

■ When gripping long or large workpieces, stable gripping requires a grip on the center of gravity. Stability is a must when using larger or multiple workpieces as well.



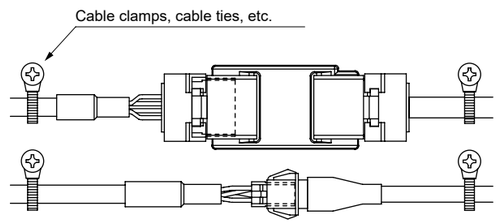
◎:Excelent, ○:Good, △: Conditional, X : Not Applicable

■ Select a model that has sufficient power to grip the workpiece weight.

■ Select a model that has sufficient opening/closing width for the workpiece size. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. When opening after gripping operation, increase the stroke by an amount corresponding to the backlash amount.

■ Do not hold the product's movable parts or cables during transportation and installation.
This can cause injury or disconnection.

■ Do not move the cable leading out of the actuator. Fix the cable part. Furthermore, use cables with a bending radius of 40mm or more.



For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

FLSH Series Model Selection Checklist → CKD (Contact)

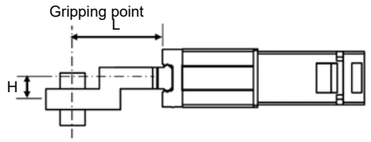
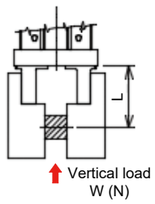
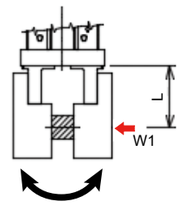
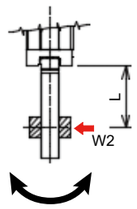
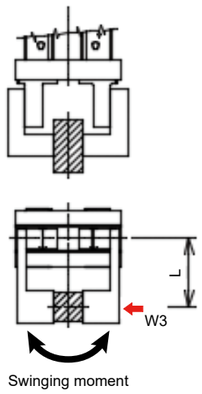
Fill in the form and send to the nearest CKD Sales Office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	
Basic Specifications	Max. stroke length (one side): mm
Operating Conditions	Travel stroke (one side): mm, travel time: s
	Gripping force (one side): N
	Open/close speed (one side): mm/s, gripping speed: mm/s
	Repeatability: ± mm, positioning repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical/Other
	Weight of workpiece: kg, workpiece material:
	Finger quantity: Finger material:
	Finger length: H: mm L: mm 
	External force on fingers: No / Yes  (Load: N)  Bending moment (Load: N, distance: mm)  Lateral bending moment (Load: N, distance: mm)  Swinging moment (Load: N, distance: mm)
Usage Environment	Ambient Temperature: °C, ambient humidity: %
	Atmosphere:
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

F Series
FLCR
FGRC
FLSH
FFLD
Ending

FFLD

2-Finger Gripper Type

Electric Actuator with Motor Specification

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Product Introduction 296

[Standard Type]
● Specifications / How to order / Dimensions
· FFLD-08 300
· FFLD-30 302
· FFLD-50 304
[High Speed Type]
● Specifications/How to order/Dimensions
· FFLD-04H 306
· FFLD-12H 308
· FFLD-30H 310
· FFLD-50H 312
● System configuration 314
● Field network description 315
● Model selection 316
● Technical Data 318

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Model Selection Check Sheet 324

FFLD System Table

Model No.		Motor Size	Stroke and max. speed (mm/s) 100 mm	140 mm	160 mm	Max. Gripping Force (N)
Standard Type FFLD	FFLD-08	□20	10 mm/s			80
	FFLD-30	□25L		10		300
	FFLD-50	□25L			10	500
High Speed Type FFLD-H	FFLD-04H	□20	30			40
	FFLD-12H	□25L		30		120
	FFLD-30H	□25L		30		300
	FFLD-50H	□35			30	500

FFLD Series

For robot end-effector applications

Lineup

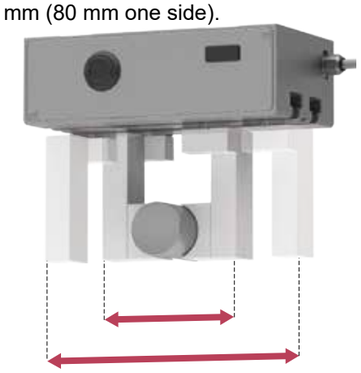
		Gripping force (N) 40	80	120	300	500	Max. operation speed (mm/s) 10	30	Listed Page
Standard	FFLD		●		●	●	●		300
High speed	FFLD-H	●		●	●	●		●	306

High gripping force, long stroke

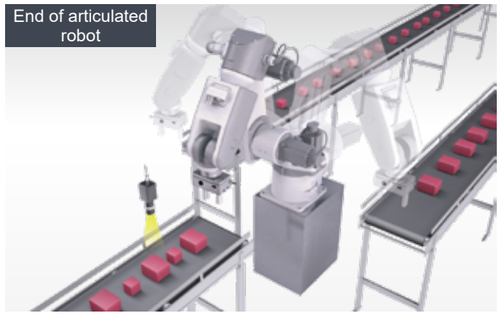
High versatility

Achieves a long stroke of gripping force 500 N (one side) and 160 mm (80 mm one side).
Heavy, various workpieces can be transported with one tool.

		FLSH	FFLD	
Max. stroke	mm	6 to 22 (3 to 11 per side)	**100 to 160 (80 per side)**	More than 7 times increase
Max. gripping force	N	20 to 65 (one side)	**80 to 500 (one side)**	About 8 times increase



End of articulated robot



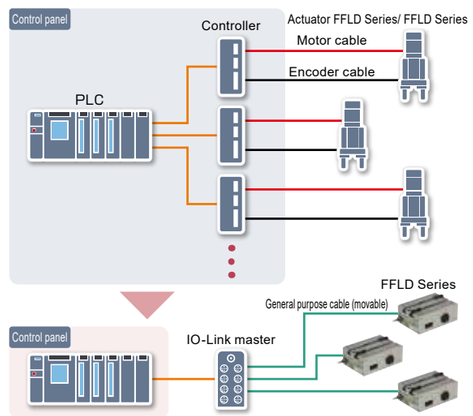
End of mobile cart robot

Built-in controller

Safety & Security
Space saving

A controller is built into the main body of the electric gripper. Achieves wiring saving and space saving, and reduces the risk of disconnection.

Controller board

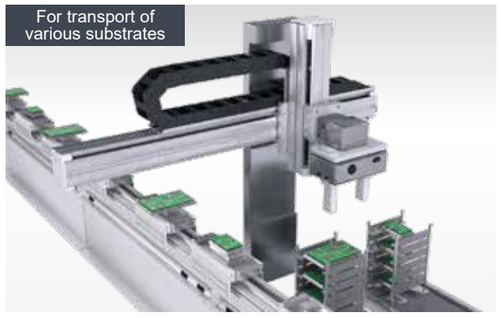


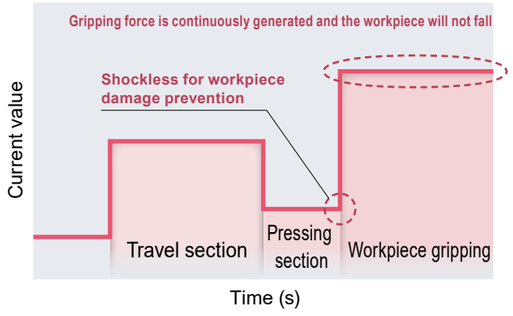
*Separate power supply is required. Refer to the system configuration example on page 314.

Pressing operation

Safety & Security

Workpiece gripping is performed by pushing motion. Gripping force is continuously generated, greatly reducing the risk of the workpiece falling. In addition, by controlling the motor current value, soft handling and long-time gripping are possible.

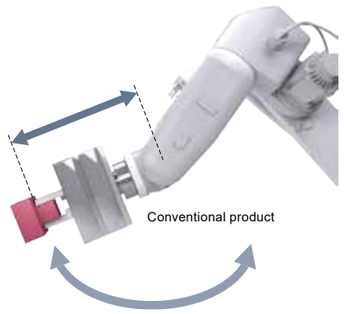


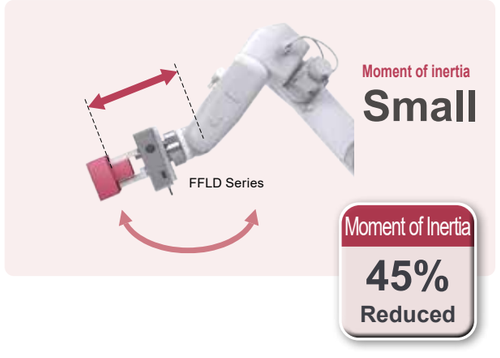


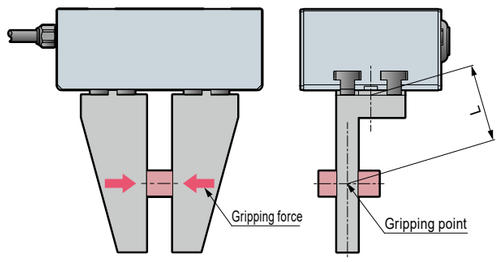
Thin, high-rigidity body

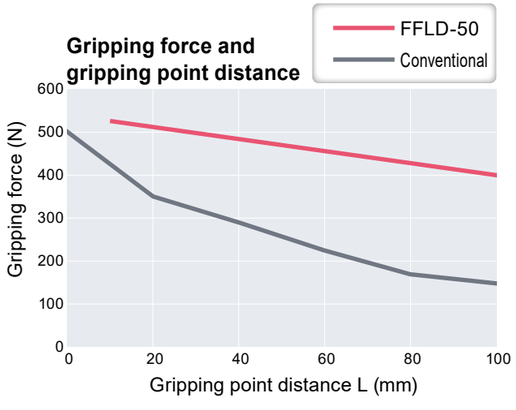
Space saving
High rigidity

Thin body reduces moment of inertia. Miniaturization of the robot is possible. In addition, a T-slot type guide is installed to achieve high rigidity. The reduction in gripping force due to the gripping point distance has been minimized.





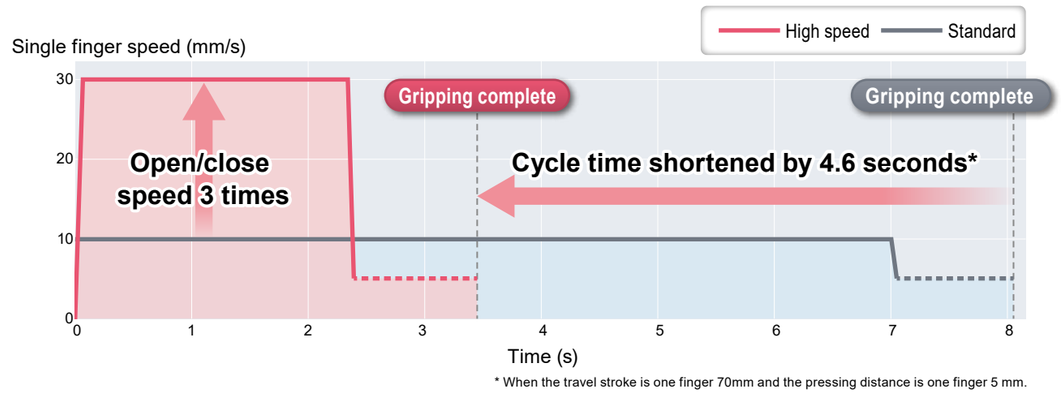




High open/close speed

Improved Productivity

The opening and closing speed of the fingers has been improved. It is possible to reduce the cycle time of the equipment.



* When the travel stroke is one finger 70mm and the pressing distance is one finger 5 mm.

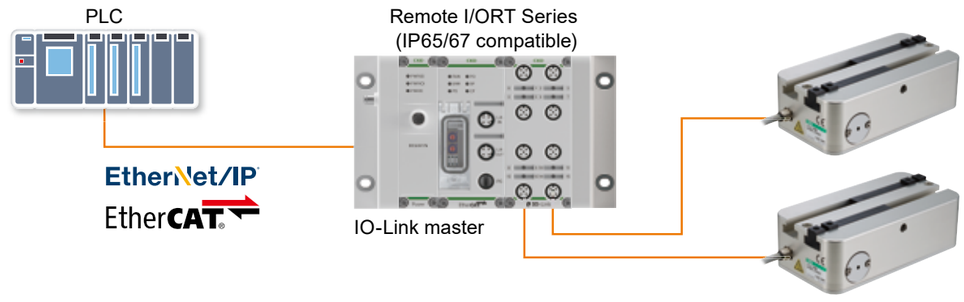
Available as made to order

High versatility
Special environment

IP54, blackening of the body, and changes to mounting holes and lead cables are possible.

Related Products

The IO-Link master unit can be mounted on the series. Can be connected to a PLC via the RT series.



* For details, refer to catalog No. Refer to CC-1557AA.

Electric actuator 2-Finger Gripper

FFLD-08

□20 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 08 50 N C N 30 - LK S R00

❶ Gripping force

08	80 N

❷ Stroke

50	100 mm (50 mm one side)

❸ Interface Specifications

LK	IO-Link

❹ Relay cable

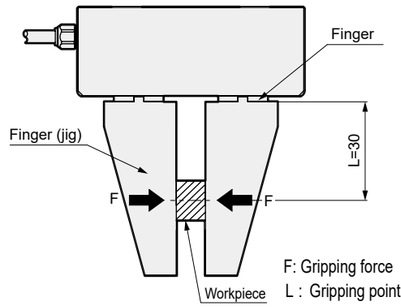
R00	Flexible cable

Specifications

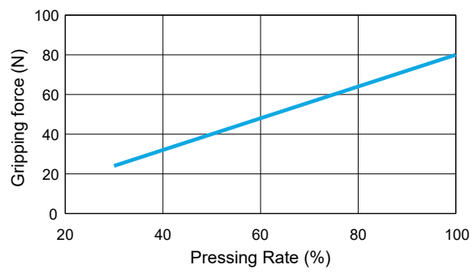
Motor		□20 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	100 (one side 50)
Max. gripping force *1	N	80 (one side)
Open/close speed range	mm/s	1 to 10 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=15, MY=15, MR=15
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	1.1 or less
Motor Max. Instantaneous Current	A	1.5
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	1.2

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

Gripping Force and Pushing Rate

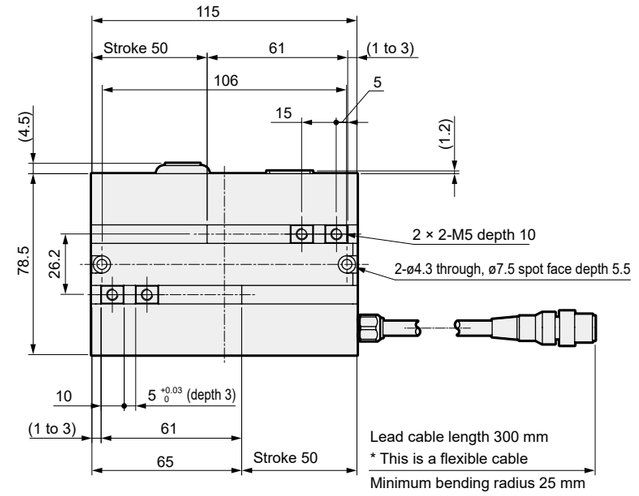


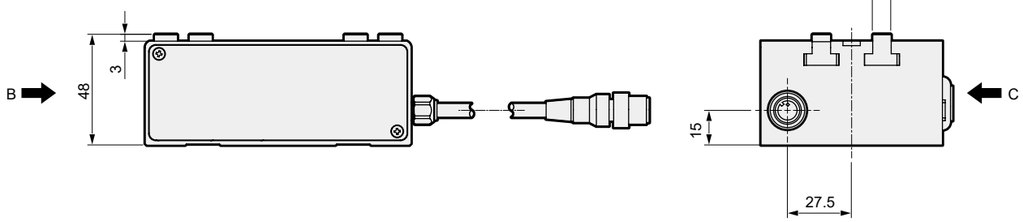
F: Gripping force
L : Gripping point distance

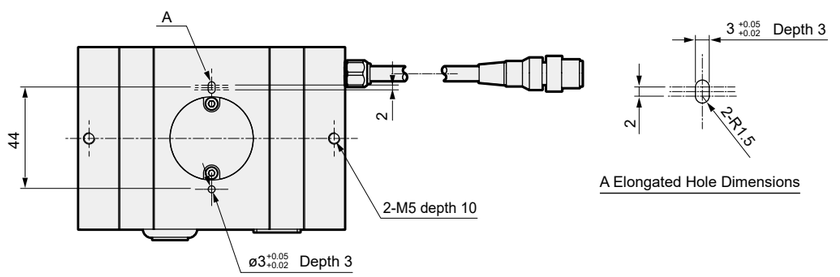


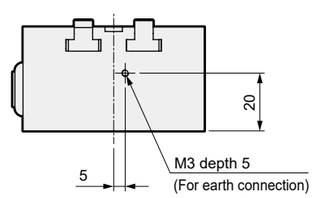
* The gripping force and pressing rate correlation diagram is merely a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

External Dimensions Drawing

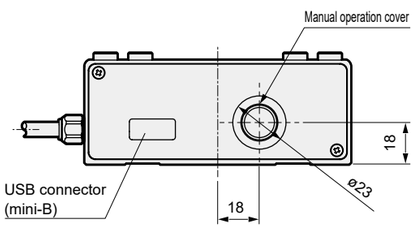








B View



C View

Electric actuator 2-Finger Gripper

FFLD-30

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 30 70 N C N 30 - LK S R00

❶ Gripping force

30	300 N

❷ Stroke

70	140 mm (70 mm one side)

❸ Interface Specifications

LK	IO-Link

❹ Relay cable

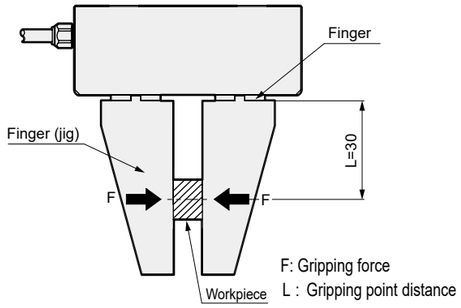
R00	Flexible cable

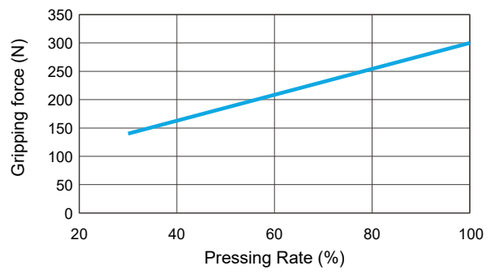
Specifications

Motor		□25L stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	140 (one side 70)
Max. gripping force *1	N	300 (one side)
Open/close speed range	mm/s	1 to 10 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=45, MY=45, MR=45
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	3.2 or less
Motor Max. Instantaneous Current	A	4.0
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	1.7

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

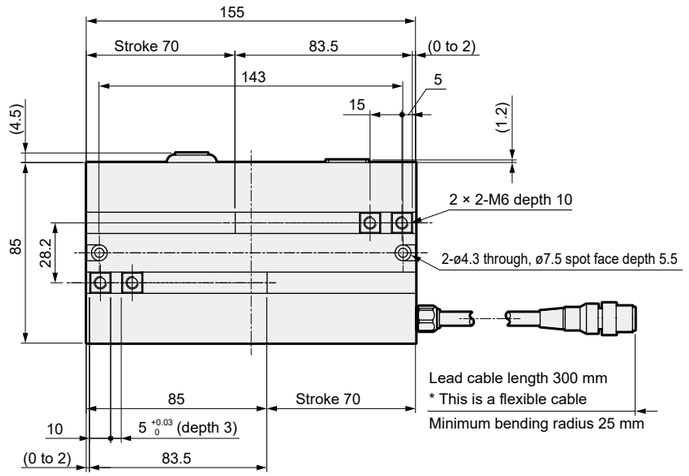
Gripping Force and Pushing Rate

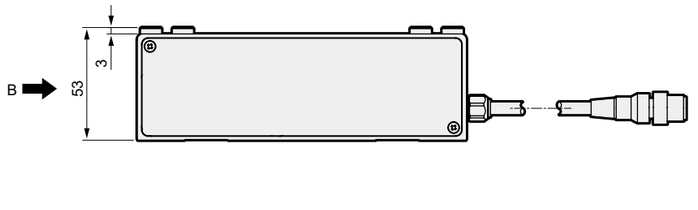


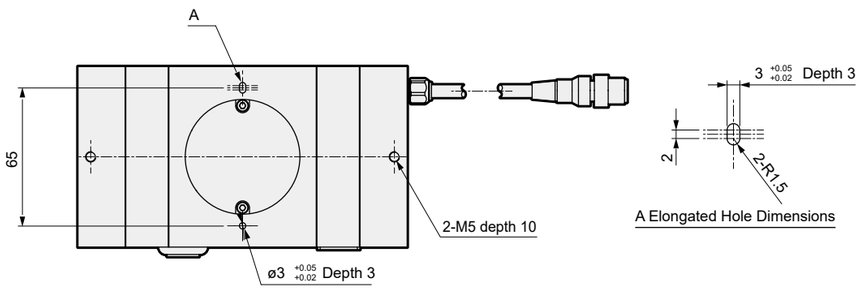


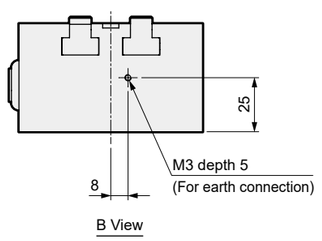
* The gripping force and pressing rate correlation diagram is merely a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

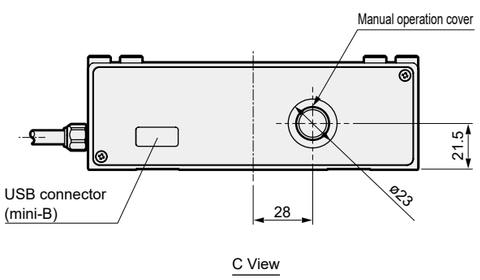
External Dimensions Drawing











Electric actuator 2-Finger Gripper

FFLD-50

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 50 (❶) 80 (❷) N C N 30 - LK (❸) S R00 (❹)

❶Gripping force	
50	500 N

❷Stroke	
80	160 mm (80 mm one side)

❸Interface Specifications	
LK	IO-Link

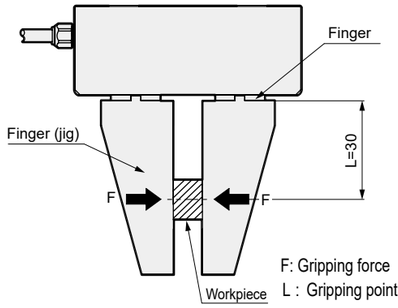
❹Relay cable	
R00	Flexible cable

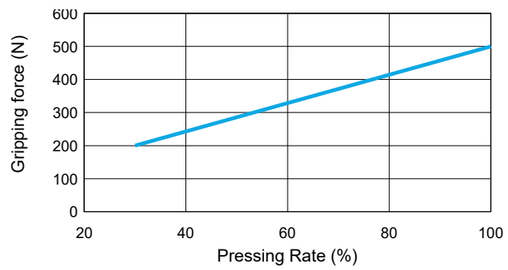
Specifications

Motor		□25L stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	160 (one side 80)
Max. gripping force *1	N	500 (one side)
Open/close speed range	mm/s	1 to 10 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=64, MY=55, MR=64
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	3.2 or less
Motor Max. Instantaneous Current	A	4.0
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	2.5

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

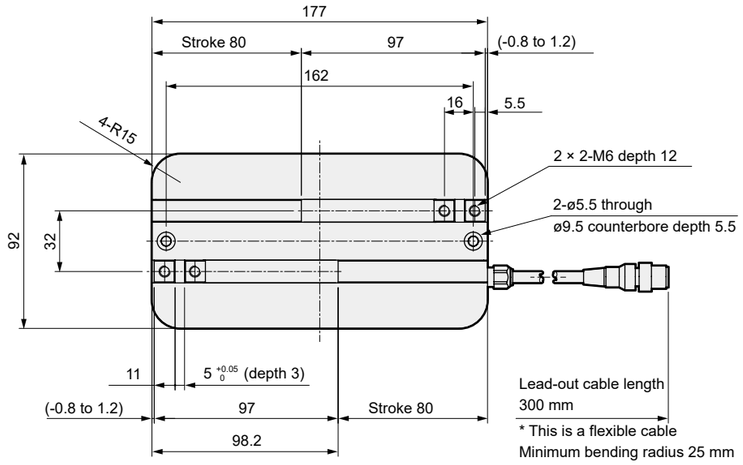
Gripping Force and Pushing Rate

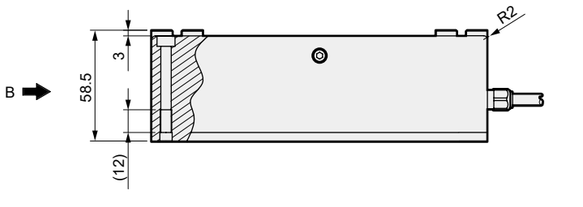


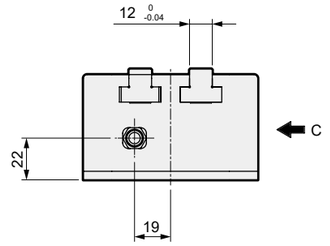


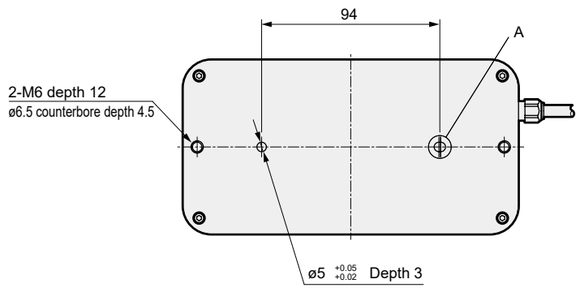
* The gripping force and pressing rate correlation diagram is merely a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

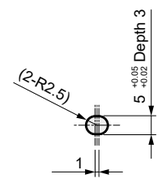
External Dimensions Drawing



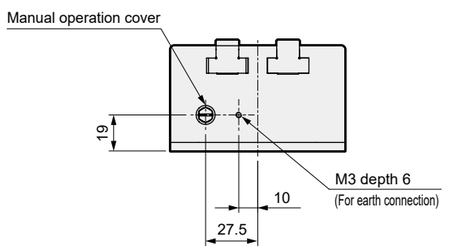




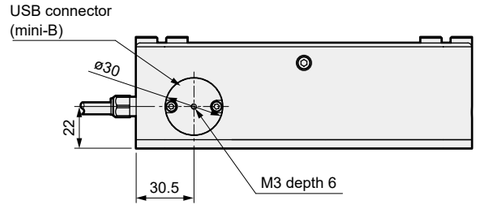




A Elongated Hole Dimensions



B View



C View

Electric actuator 2-Finger Gripper High speed

FFLD-04H

□20 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 04 H 50 N C N 30 - LK S R00

❶Gripping force

04	40N

❷Stroke

50	100 mm (50 mm one side)

❸Interface Specifications

LK	IO-Link

❹Relay cable

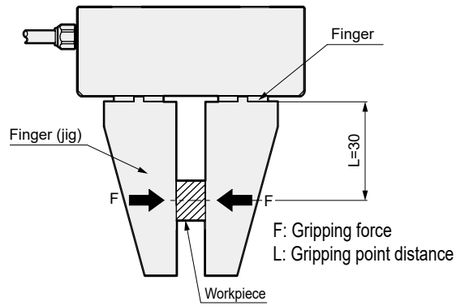
R00	Flexible cable

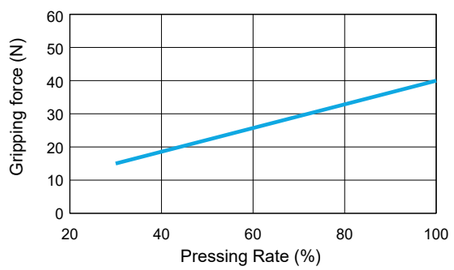
Specifications

Motor		□20 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	100 (one side 50)
Max. gripping force *1	N	40 (one side)
Open/close speed range	mm/s	1 to 30 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=15, MY=15, MR=15
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	1.1 or less
Motor Max. Instantaneous Current	A	1.5
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	1.2

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

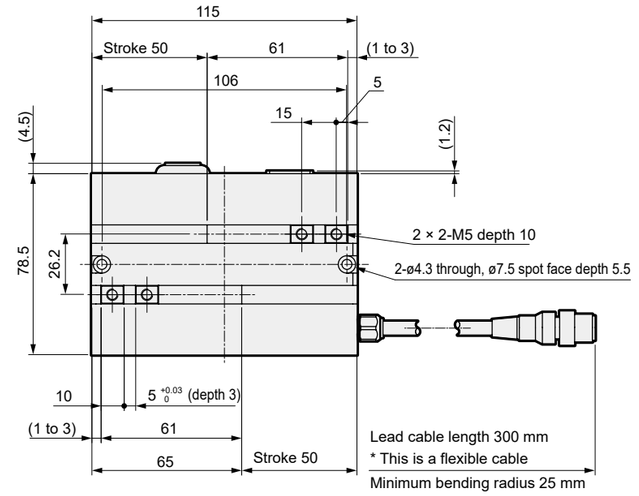
Gripping Force and Pushing Rate

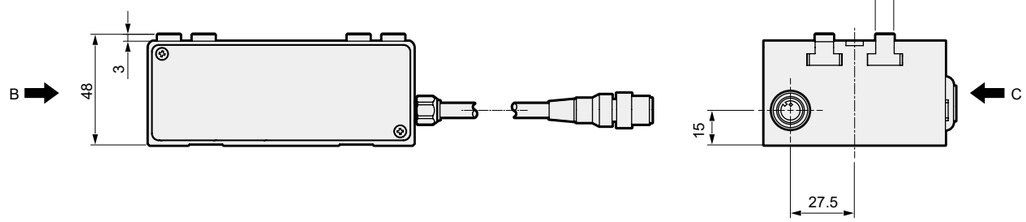


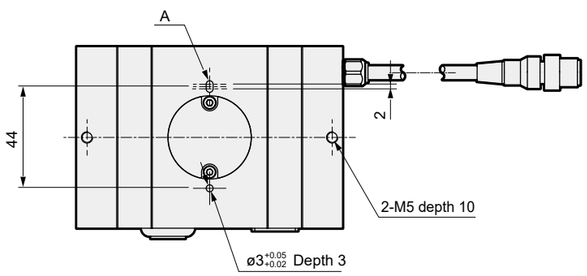


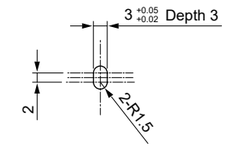
* The gripping force and pressing rate correlation diagram is merely a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

External Dimensions Drawing

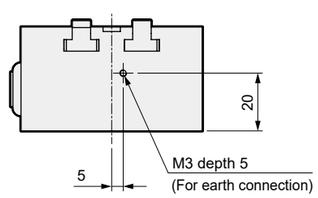




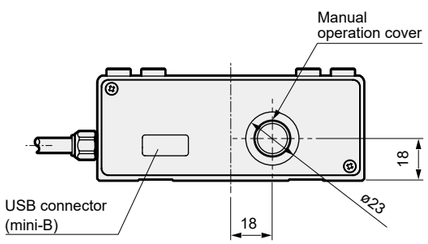




A Elongated Hole Dimensions



B View



C View

Electric actuator 2-Finger Gripper High speed

FFLD-12H

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 12 H 70 N C N 30 - LK S R00

❶Gripping force

12	120N

❷Stroke

70	140 mm (70 mm one side)

❸Interface Specifications

LK	IO-Link

❹Relay cable

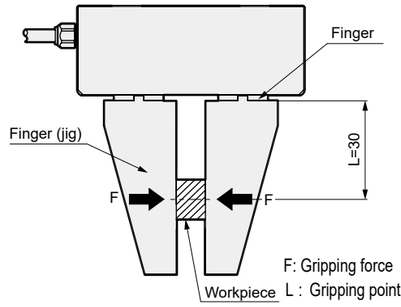
R00	Flexible cable

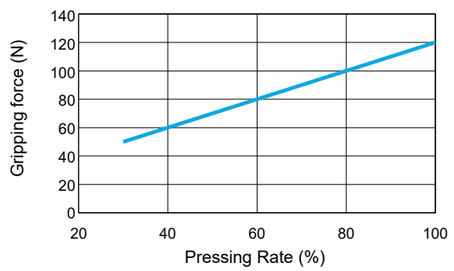
Specifications

Motor		□25L stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	140 (one side 70)
Max. gripping force *1	N	120 (one side)
Open/close speed range	mm/s	1 to 30 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=45, MY=45, MR=45
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	3.2 or less
Motor Max. Instantaneous Current	A	4.0
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	1.7

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

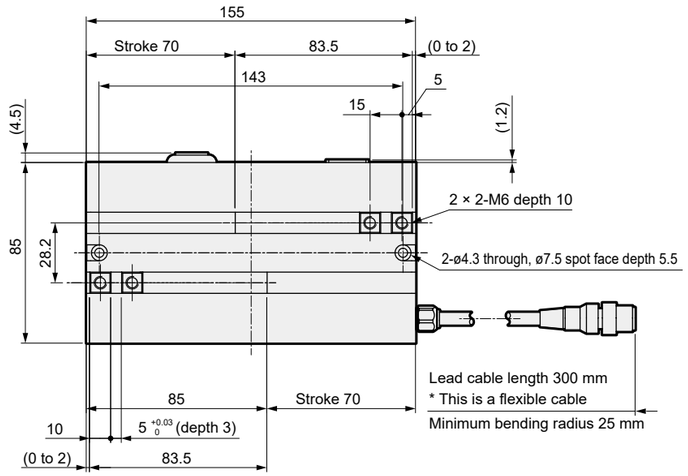
Gripping Force and Pushing Rate

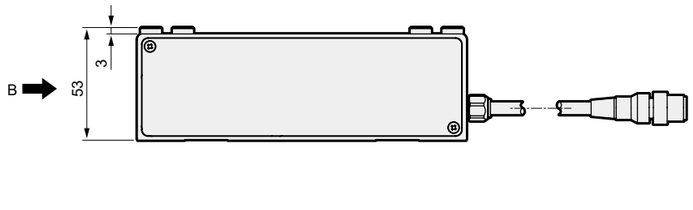


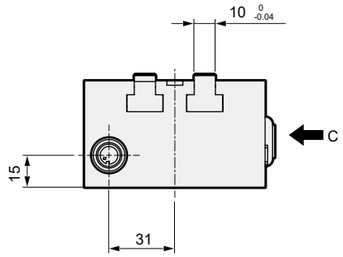


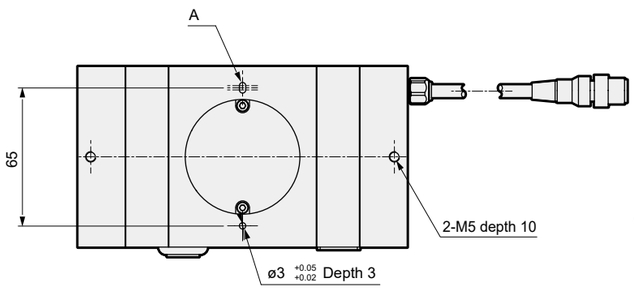
* The gripping force and pressing rate correlation diagram is merely a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

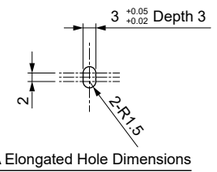
External Dimensions Drawing



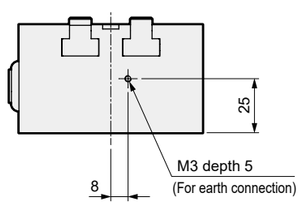




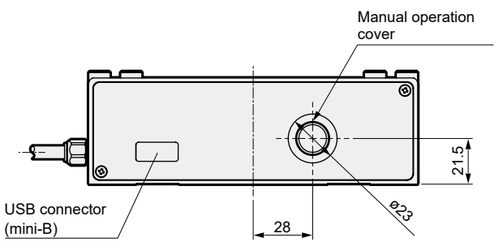




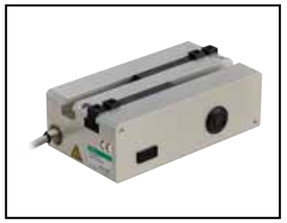
A Elongated Hole Dimensions



B View



C View



Electric actuator 2-Finger Gripper high speed

FFLD-30H

□25L stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 30 H 70 N C N 30 - LK S R00

❶Gripping force

30	300 N

❷Stroke

70	140 mm (70 mm one side)

❸Interface Specifications

LK	IO-Link

❹Relay cable

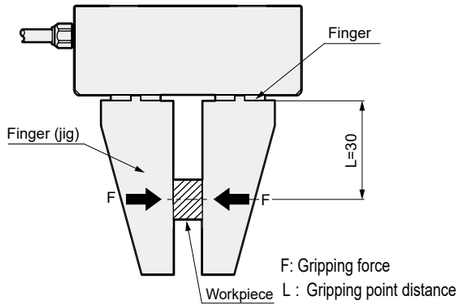
R00	Flexible cable

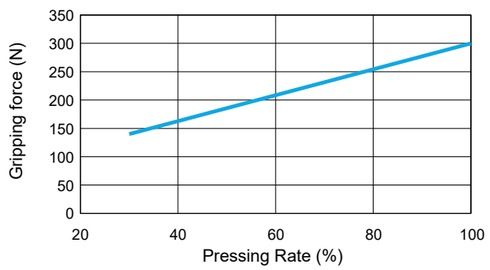
Specifications

Motor		□25L stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	140 (one side 70)
Max. gripping force *1	N	300 (one side)
Open/close speed range	mm/s	1 to 30 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=45, MY=45, MR=45
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	3.2 or less
Motor Max. Instantaneous Current	A	4.0
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	1.7

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

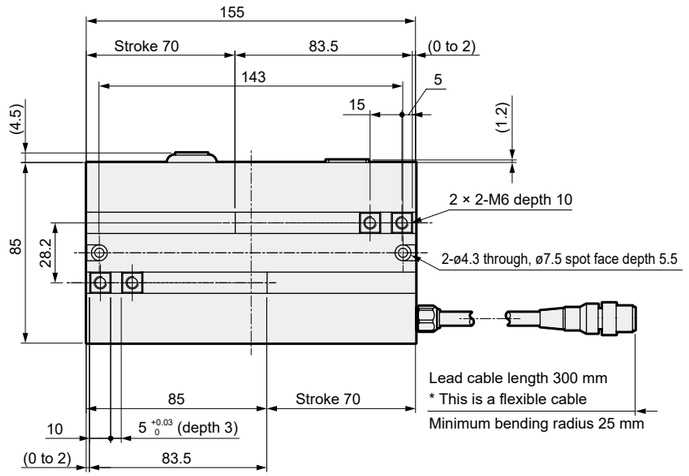
Gripping Force and Pushing Rate

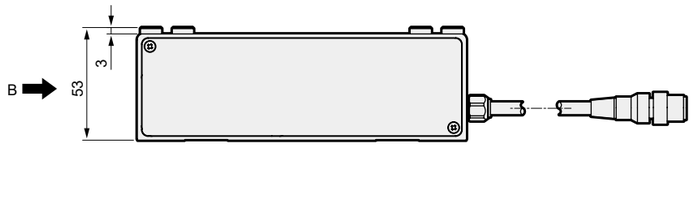


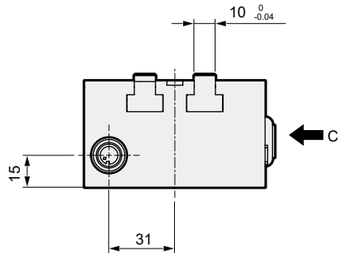


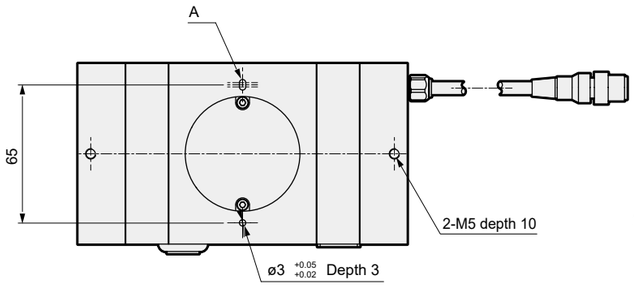
* The gripping force and pressing rate correlation diagram is merely a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

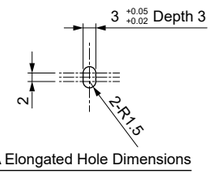
External Dimensions Drawing



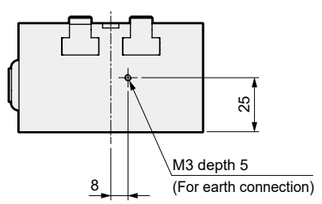




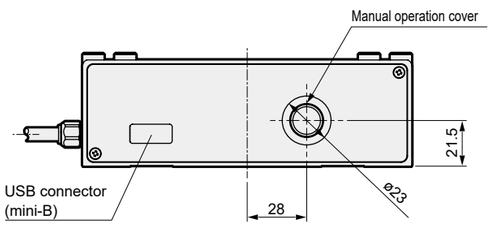




A Elongated Hole Dimensions



B View



C View

Electric actuator 2-Finger Gripper high speed

FFLD-50H

□35 Stepping motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

FFLD - 50 H 80 N C N 30 - LK S R00

❶Gripping force

50	500 N

❷Stroke

80	160 mm (80 mm one side)

❸Interface Specifications

LK	IO-Link

❹Relay cable

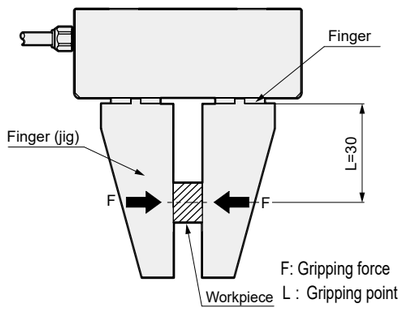
R00	Flexible cable

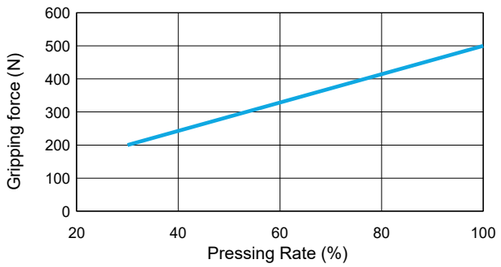
Specifications

Motor		□35 Stepping motor
Encoder Type		Incremental Encoder
Drive Method		Rack and pinion, worm gear
Controller		Built-in
Stroke	mm	160 (one side 80)
Max. gripping force *1	N	500 (one side)
Open/close speed range	mm/s	1 to 30 (one side)
Gripping speed range *1	mm/s	1 to 5 (one side)
Repeatability *2	mm	±0.02
Positioning repeatability *3	mm	±0.05 (one side)
Lost Motion	mm	0.4 or less (one side)
Static Allowable Moment	N·m	MP=64, MY=55, MR=64
Configuration Tool		Configuration software (S-Tools)
External Interface		IO-Link
Power supply voltage	Communication/ Control	24 VDC ±10%
	Motive Power	24 VDC ±10%
Current consumption	Communication/ Control A	0.2 or less
	Power A	3.0 or less
Motor Max. Instantaneous Current	A	4.0
Power capacity		Max. 100 W
Insulation Resistance		10 MΩ, 500 VDC
Dielectric strength		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP20
Weight	kg	2.7

*1 Gripping is done with pressing operation.
*2 Repeat accuracy indicates the variation when the same workpiece is repeated gripped at the same power, under the same operation conditions.
*3 The stop position will vary if positioning repeatability is checked using the same point.

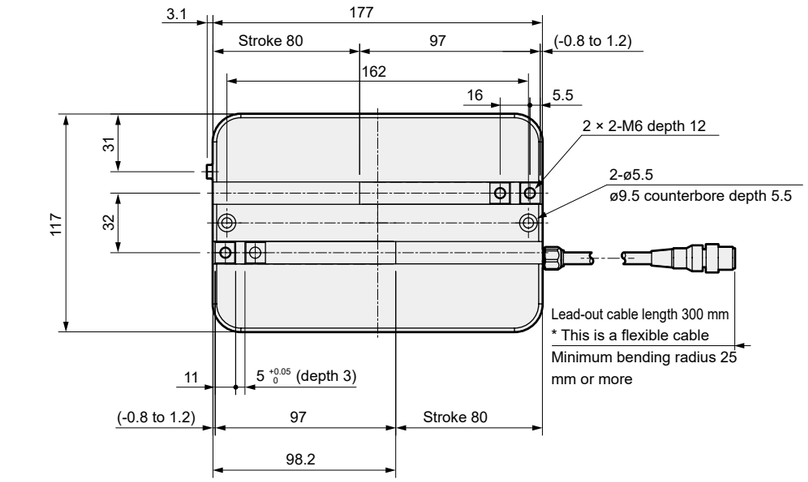
Gripping Force and Pushing Rate

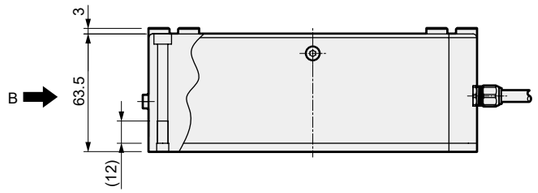


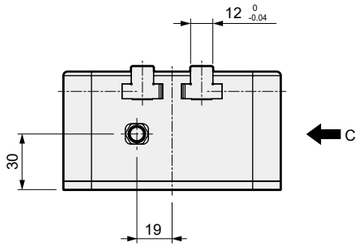


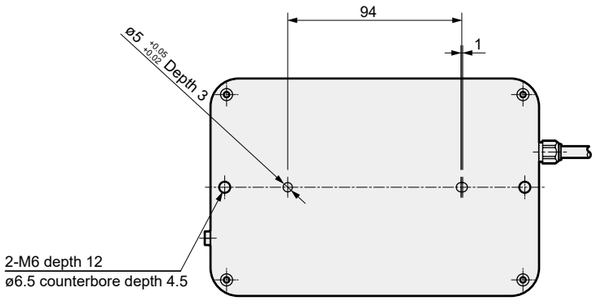
* The gripping force and pressing rate correlation diagram is merely a guideline. Even with the same pushing rate, errors will occur with the actual numbers due to individual differences in motors and variations in mechanical efficiency.
* Gripping speed is for 5mm/s. (L=30)
* The setting range for the pressing rate is 30 to 100%.

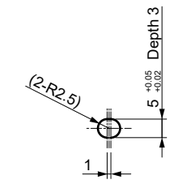
External Dimensions Drawing



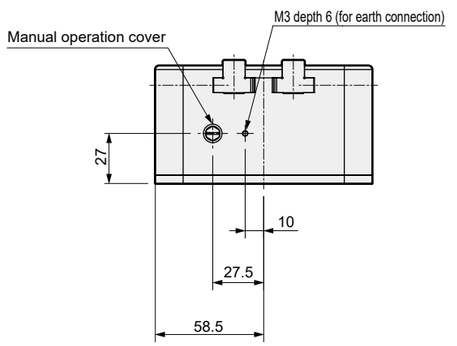




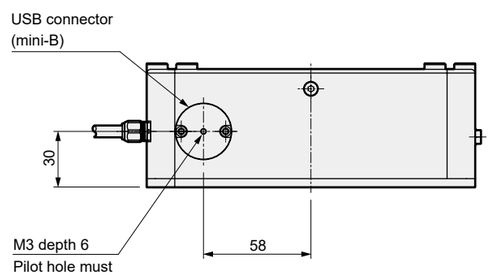




A Elongated Hole Dimensions

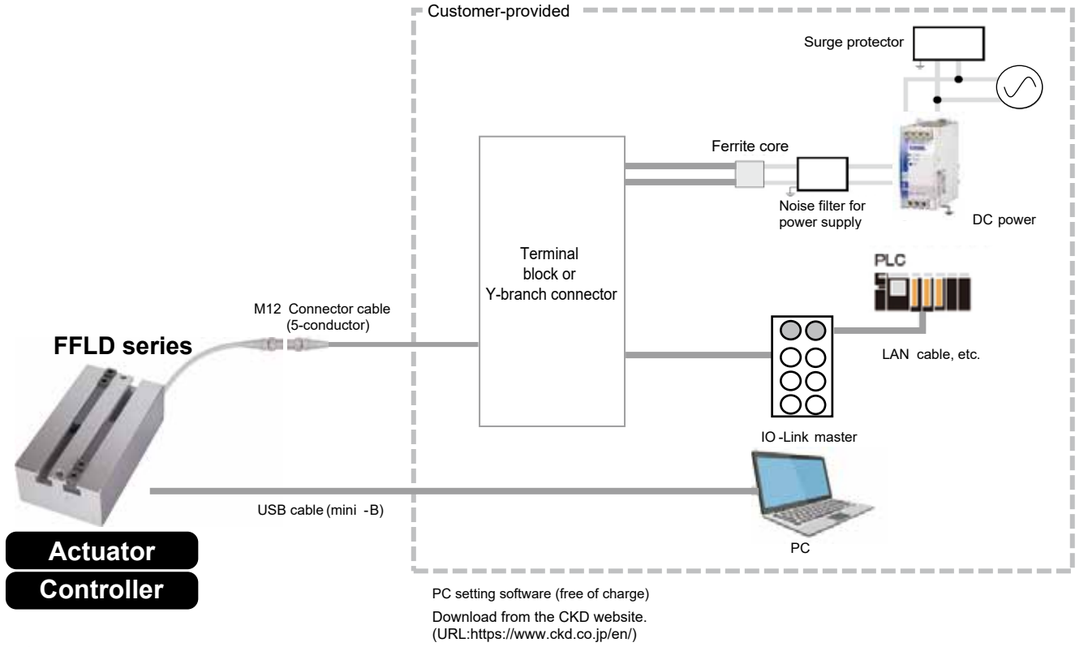


B View



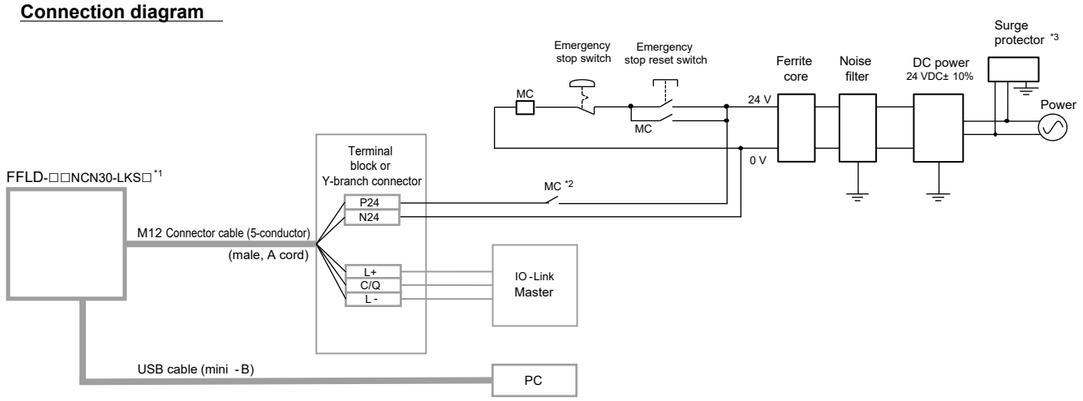
C View

System Configuration



PC setting software (free of charge)
Download from the CKD website.
(URL:https://www.ckd.co.jp/en/)

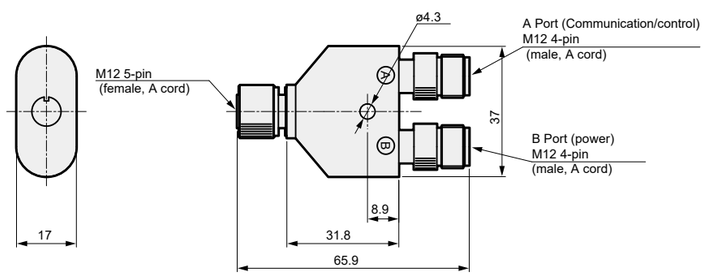
Connection diagram



*1 Product not compatible with IO-Link Class B. Can be connected to IO-Link ClassB compatible master. The communication/Control power supply and power supply are not isolated, If an error occurs, other components may be affected. Also, please wire it after reading the instruction manual. Incorrect wiring may lead to component damage.
*2 For safety category support, connect the contact of an electromagnetic switch or other device when motor drive power must be shut OFF.
*3 A surge protector is required to comply with the CE marking.

● Y branch connector

EA-YJOINT-1



For the wiring diagram, please refer to the instruction manual.

Field Network Description

Overview	
FDP	64-point operation is possible. Full direct value operation, in which operating conditions can be arbitrarily set from the PLC by switching the direct value travel selection signal, is also possible. You can also check the monitor. For detailed items, please refer to the table below.

	Direct value travel selection	Positioning numbers	Direct Value Travel Item									Monitor Item		
			Target position	Speed	Pressing rate	Pressing speed	Position designation method	Operation	Stop method	Point zone +	Point zone-	Position	Current	Speed
FDP	0	64 points	-	-	-	-	-	-	-	-	—	○	▲	▲
	1	Unlimited	○	○	○	○	○	○	○	○	○	○	▲	▲

* In the case of ▲, select from ▲ and monitor only one item

[Communication Specifications]

Item	Specifications
Communication Protocol Version	V1.1
Transmission Speed	COM2 (38.4kbps)
Port	Class A
Process data length (Input) PD (in) data length	5 byte
Process data length (Output) PD (out) data length	15 byte
Minimum cycle Time	10 ms
Monitor function	Position, current, speed

Cyclic data from master

PD (out)	Bit	Item
0	7	-
	6	Stop
	5	Alarm Reset
	4	Servo ON
	3	Homing Start
	2	Start moving
	1	Direct Value Travel Selection
	0	-
1	7	-
	6	-
	5	Point number confirmation bit 5
	4	Point number confirmation bit 4
	3	Point number confirmation bit 3
	2	Point number confirmation bit 2
	1	Point number confirmation bit 1
	0	Point number confirmation bit 0
2 to 3	7 to 0	Position (direct value travel)
4	7 to 0	Speed (direct value travel)
5	7 to 0	Pushing rate (direct value travel)
6 to 7	7 to 0	Pushing distance (direct value travel)
8	7 to 0	Pushing speed (direct value travel)
9	7	Positioning method (direct value travel)
	6 to 5	Operation method (direct value travel)
	4 to 3	-
	2 to 0	Stopping method (direct value travel)
10 to 11	7 to 0	Point zone (+) (direct value travel)
12 to 13	7 to 0	Point zone (-) (direct value travel)
14	7	INCH Selection
	6	JOG/INCH (+) move start
	5	JOG/INCH (-) move start
	4 to 3	-
	2 to 0	Monitor Selection

Cyclic data from controller

PD (in)	Bit	Item
0	7	Ready to operate
	6	Warning
	5	Alarm
	4	Servo ON state
	3	Homing complete
	2	Move complete
	1	Moving
	0	Point zone
1	7	Direct value travel state
	6	-
	5	Point number confirmation bit 5
	4	Point number confirmation bit 4
	3	Point number confirmation bit 3
	2	Point number confirmation bit 2
	1	Point number confirmation bit 1
	0	Point number confirmation bit 0
2 to 3	7 to 0	Current position
4	7 to 0	Select Monitor

Model Selection

STEP1 Calculation of Required Gripping Force

Calculate the gripping force required to transport the workpiece (weight WL) based on the following.

$$Fw > \frac{W_L x g x K}{n}$$

Fw : Required gripping force (N)
n : Number of Small Fingers = 2
W_L: Workpiece weight [kg]
g : Gravitational acceleration = 9.8 (m/s²)
K : Conveyance Factor
5 [holding only]
10 [normal transport]
20 [suddenly accelerated transport]

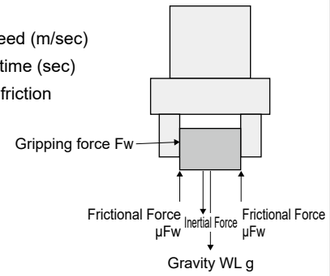
About Conveyance Factor K

Calculation example: When decelerating and stopping in 0.1 second from transport speed of V = 0.75 m/s with friction coefficient μ of workpiece and attachment as 0.1, See below.

Determine the transport coefficient K from the force applied to the workpiece

V: Transport speed (m/sec)
t: Deceleration time (sec)
μ:Coefficient of friction

- Inertial force = $W_L x (V/t)$
- Gravity = $W_L g$
- Required gripping force Fw $> \frac{W_L x (V/t) + W_L g}{n\mu} = \frac{W_L x (V/t+g)}{n\mu} = \frac{17.3\ W_L}{2 \times 0.1} = 86.5\ W_L$



∴ The transport coefficient K at this time is, from the above formula

$$\frac{W_L x g x K}{n} = 86.5\ W_L$$

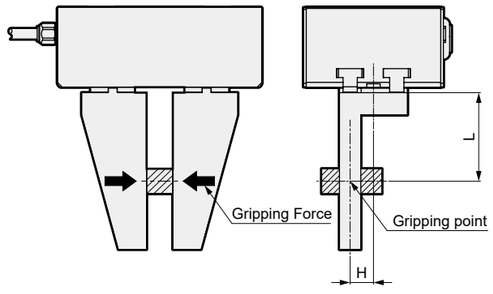
$$K = \frac{n \times 86.5}{g} = \frac{2 \times 86.5}{9.8} \approx 20$$

Note) The transport coefficient K needs to allow a margin for impacts during transport, etc. Even if the friction coefficient μ is higher than μ=0.1, set the conveyance factor K to 10 to 20 or more for safety.

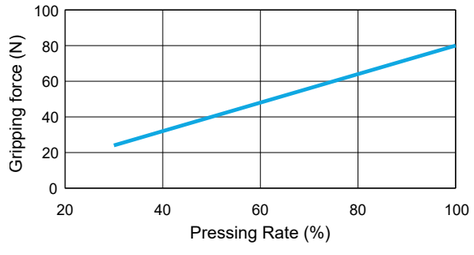
STEP2 Provisional selection of model from gripping force graph

Confirm the conditions on the right and provisionally select a model from the gripping force graph. The gripping force changes depending on the gripping point distance ℓ and the pushing rate. Please confirm that sufficient gripping force can be obtained under your conditions of use from the graph.

Calculated as $\ell = \sqrt{L^2 + H^2}$.

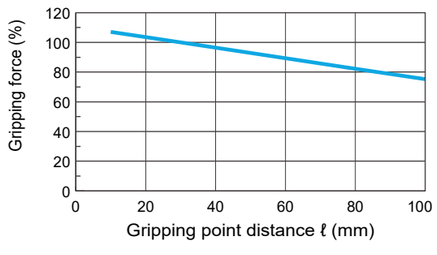


Gripping Force and Pushing Rate
[Ex.: FFLD-08]



*Refer to the specifications page for each model.

Gripping force and gripping point distance
[Ex.: FFLD-08]

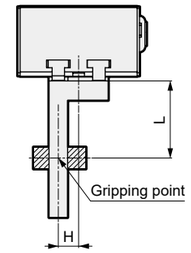


*Refer to P. 318.

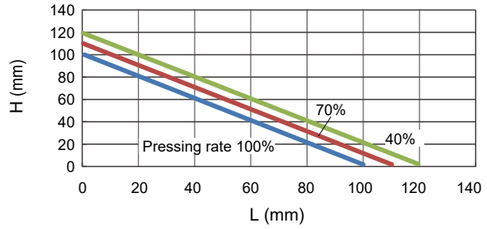
STEP3 Confirmation of Attachment Shape

Please use the gripping point distance within the range of the graph on the right.

Ex) L: 30mm H: 20 mm



Gripping Point Distance and Pushing Rate
[Ex.: FFLD-08]



When FFLD-08 is selected, L: 30 mm, H: The intersection of 20 mm is inside the line with a pressing rate of 100%, so it can be used.

*Refer to page 319.

● Please use fingers that are as light and short as possible.
If they are long and heavy, the inertial force during opening and closing becomes large, which may cause backlash in the fingers or accelerate wear of the finger sliding parts, adversely affecting the service life.
●Minimizing the attachment shape as much as possible within the performance data enables the product to be used for a longer time.
●The weight of the attachment affects durability, so check that the weight is less than the following value.
W < 1/4h (1 pc.) W : Weight of attachment
h: Product Weight-Finger Gripper

STEP4 Confirmation of External Force on Fingers

If external force is applied to the fingers, please use within the limits of [Table 1].

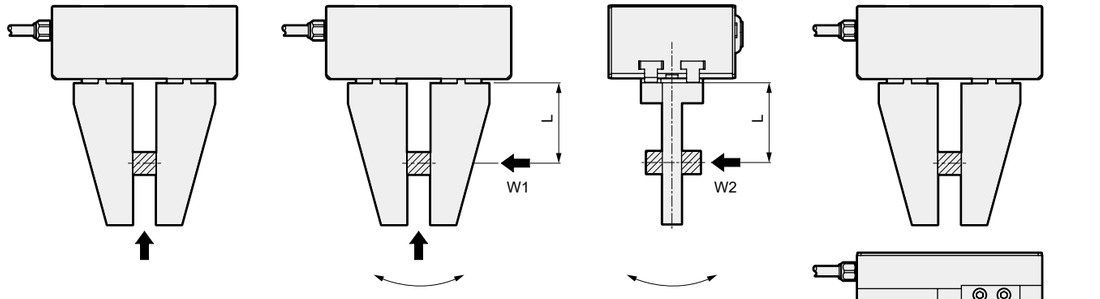


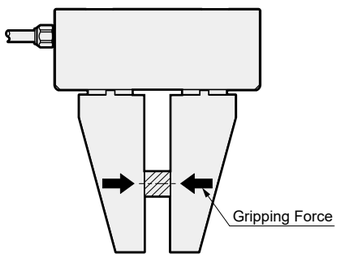
Table 1 Static allowable moment

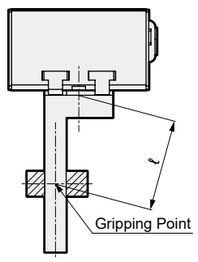
Size	Vertical load Wmax (N)	Bending moment MPmax (N·m)	Lateral bending moment MRmax (N·m)	Swinging moment MYmax (N·m)
FFLD-08	120	15	15	15
FFLD-30	390	45	45	45
FFLD-50	485	64	64	55
FFLD-04H	120	15	15	15
FFLD-12H	390	45	45	45
FFLD-30H	390	45	45	45
FFLD-50H	485	64	64	55

Calculation example)
Model No.: FFLD-08, L: 40 mm when a load W1: 30N is applied
MP = 30 x 40 x 10^{-3} = 1.2 N·m < MPmax = 15 N·m

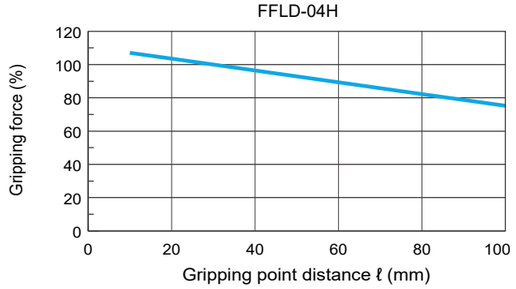
Gripping force and gripping point distance

Indicates the gripping force at the gripping point distance ℓ.

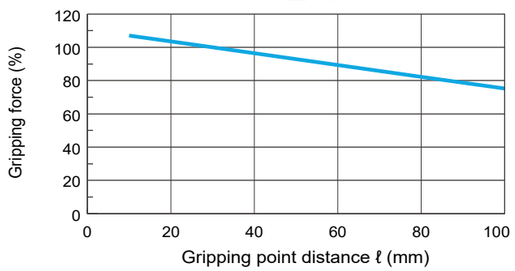




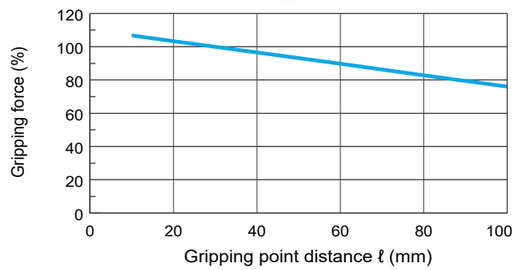
FFLD-04H



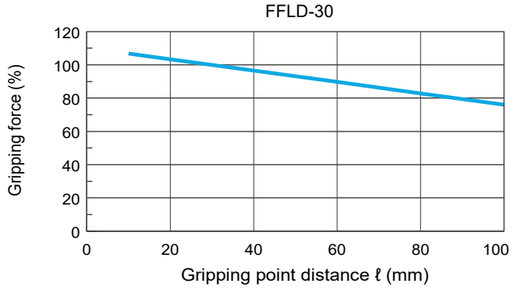
FFLD-08



FFLD-12H



FFLD-30



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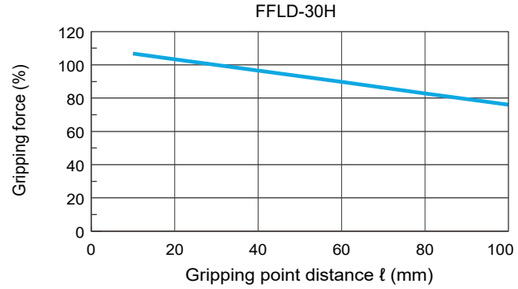

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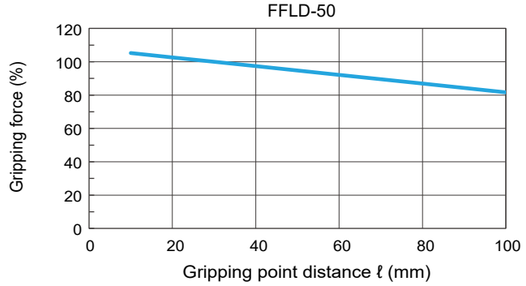

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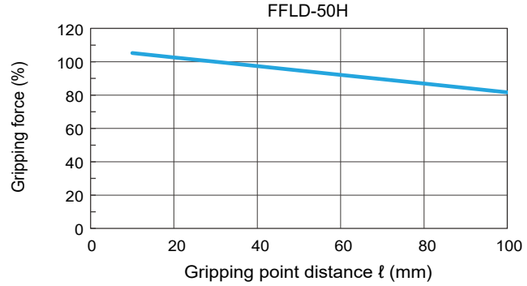
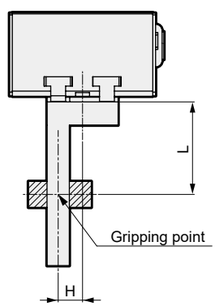


Gripping Point Distance and Pushing Rate



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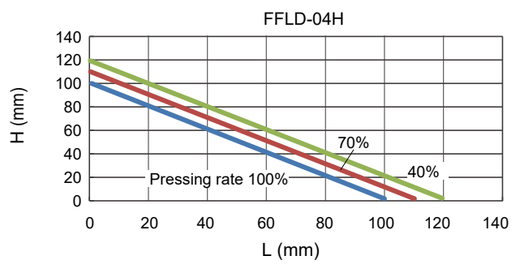

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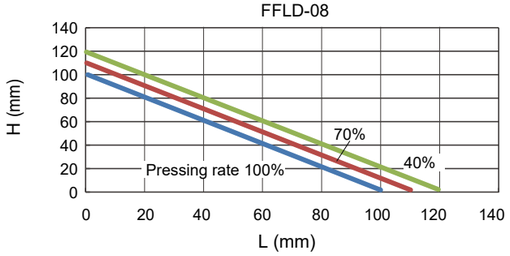
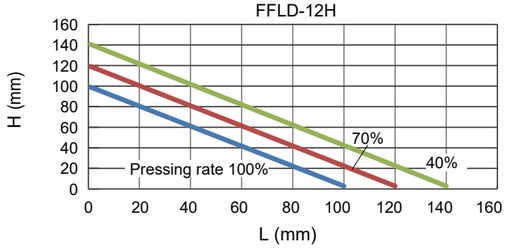


FFLD-12H



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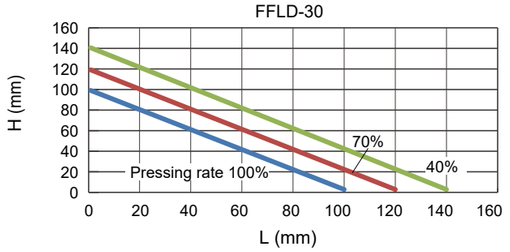
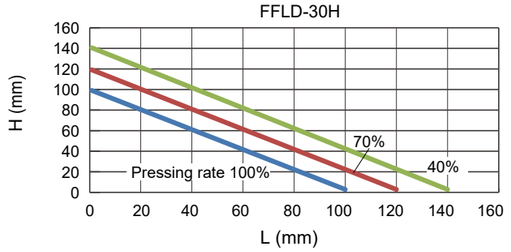
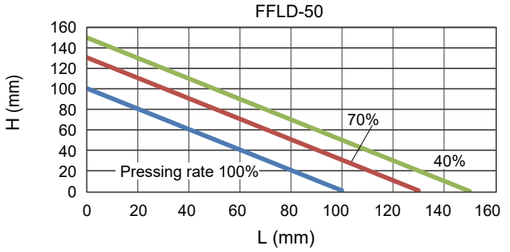


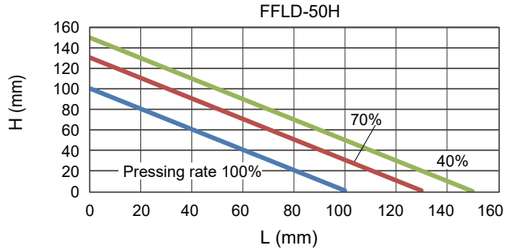
FFLD-30H



FFLD-50



FFLD-50H



Special Specification Product*

● Compatible with protection degree IP54
Any size can be changed to IP54.

● Change in length of lead-out cable
The length of the lead-out cable can be changed.

● Body color change
The body color can be changed to black.

* Contact CKD for Special Specification Product details.

MEMO

F Series
FLCR
FGRC
FLSH
FFLD
Ending

To Use This Product Safely

Be sure to read this before use.
Refer to Intro 17 for general information on electric actuators.

Individual Precautions: Electric actuator FFLD Series

During Design / Selection

⚠DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a risk of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
This can cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix (including the workpiece) it.
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

■ Use a DC stabilized power supply (24VDC ±10%) for the power supply, communication/Control power supply, and the power supply for the I/O circuit. Direct connection to an AC power supply can cause fire, bursting, damage, etc.

■ Through FFLD for common Control power supply (L-) and power supply (N24) Do not connect externally, as the unit is connected with an internal circuit board.
The reverse connection protection function installed in this machine will not operate normally, and there is a risk of fire, bursting, damage, etc.

⚠Warning

■ Use within the product's specified operating range.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ If the machine stops in the event of a system failure such as power outage, equipment damage or injury do not occur.Design a safety circuit or device.

■ Install indoors with low humidity.
In places where it is exposed to rainwater or in humid places (humidity of 80% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such an environment will cause damage and malfunction.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
This can cause malfunction or failure.

■ Take possibility of power source breakdown into consideration.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ If the moving workpiece poses a possible risk to personnel or if human fingers could be caught in the finger section, etc., install a protective cover, etc.

■ The gripping power may decrease during a power outage or similar. Use a safe design that takes this into consideration. The gripping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device that will not cause injury to people or damage to machinery.

⚠Caution

■ Product is per minuteDo not attempt to disassemble or modify the product.

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

■ Set up the wiring so as not to apply inductive noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

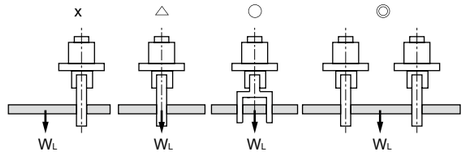
■ Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply which provides ample capacity based on the number of installed products. If there is not enough capacity, it may malfunction.

■ Fix the cable so that it does not move easily.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ When gripping long or large workpieces, stable gripping requires a grip on the center of gravity. Stability is a must when using larger or multiple workpieces as well.

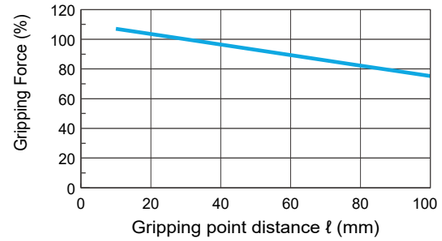


◎: Excellent, ○:Good, △: Conditional, X: Not Applicable

■ Select a model that has sufficient power to grip the workpiece weight.

■ Select a model that has sufficient opening/closing width for the workpiece size. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. Also, when opening from gripping operation, increase the stroke by the amount of backlash.

■ Jigs that are to be mounted to the finger should be as short and lightweight as possible. If it is long and heavy, the inertial force during opening and closing will be large, which may cause backlash in the fingers or accelerate wear of the sliding parts, adversely affecting the service life.



■ Do not hold the product's movable parts or cables during transportation and installation.
This can cause injury or disconnection.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

FFLD Series Model Selection Checklist → CKD (Contact)

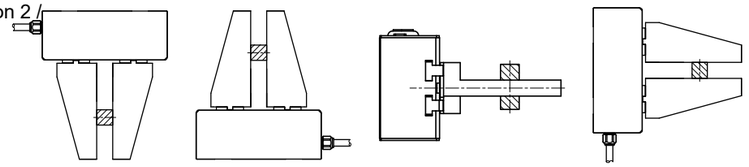
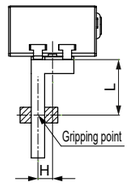
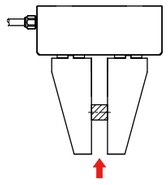
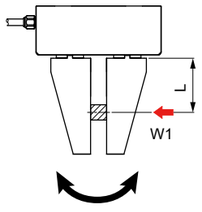
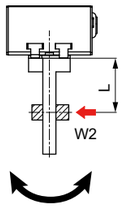
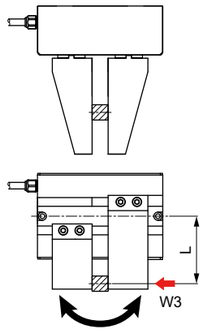
Fill in the form and send to the nearest CKD Sales Office. We will reply with the model selection results.

MEMO

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	FFLD-
Basic Specifications	Max. stroke length (one side): mm
Operating Conditions	Travel stroke (one side): mm, travel time: s
	Gripping force (one side): N
	Open/close speed (one side): mm/s, gripping speed: mm/s
	Repeatability: ± mm, positioning repeatability: ± mm
Load Conditions	Mounting orientation: Orientation 1 Orientation 2 Orientation 3 Position 1 / Position 2 / Position 3 / Other 
	Weight of workpiece: kg Workpiece material: Finger quantity: Attachment material: Finger length: H: mm L: mm 
	External force on fingers: No / Yes  (Load: N)  Bending moment (Load: N, distance: mm)  Lateral bending moment (Load: N, distance: mm)  Swinging moment (Load: N, distance: mm)
Usage Environment	Ambient Temperature: °C, ambient humidity: %
	Atmosphere:
Interface Specifications	IO-Link
Special Notes	

F Series
FLCR
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Electric Actuator G Series

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■ Guided Type	GSTG	353
■ Guided Type	GSTS	367
■ Guided Type	GSTL	381
■ 3-Finger Gripper Type	GCKW	395
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64-point positioning electric actuator maintains the user-friendliness of the Air Components and Electric Motion Components

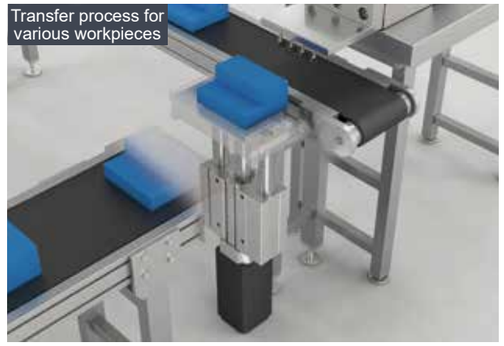
A wide variety of carbon-neutral equipment at your disposal

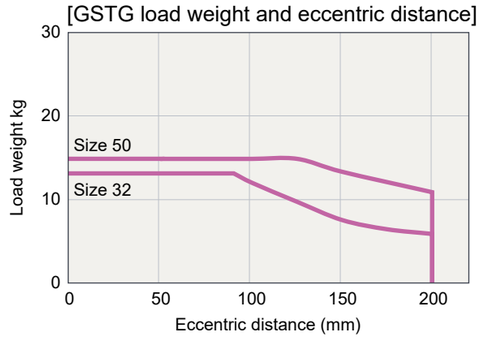
		Size 16	20	25	32	50	Catalog Page
Actuator	Rod-type GSSD2		●		●	●	331
	Stopper-type GSTK		●		●	●	341
	Guided GSTG		●		●	●	353
	Guided GSTS		●		●	●	367
	Guided GSTL		●		●	●	381
	3-finger gripper GCKW	●	●	●			395
Application Controller	ECMG	●	●	●	●	●	535
	ECG-A		●		●	●	565
	ECG-B	●	●	●			581

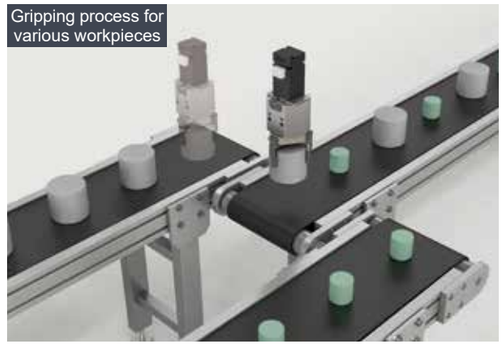
Inherits the high rigidity of pneumatic components

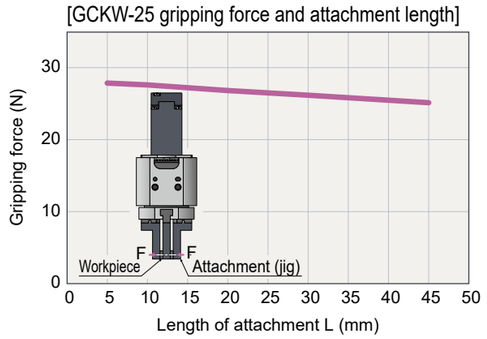
High rigidity | Space saving | Reduced design hours | Reduced number of parts | Long service life

By using the same body as air equipment, we have achieved a high rigidity not found in conventional electric actuators.





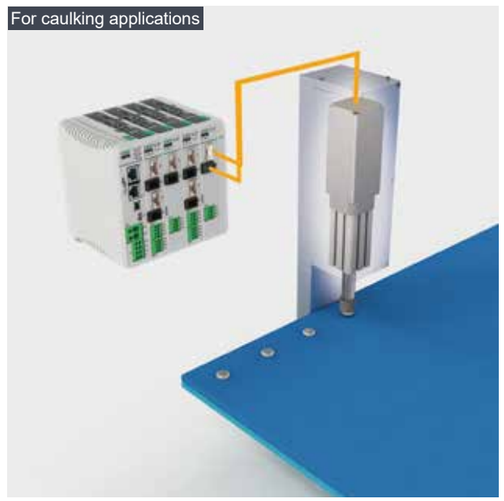


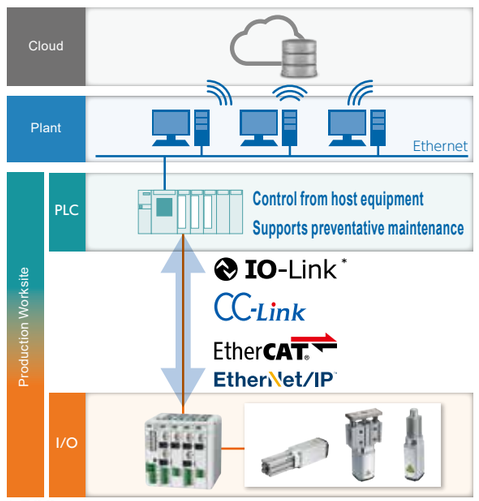


Connectable to high-function controllers

High versatility | Productivity improved | Supports IoT

In addition to 64-point multi-point positioning and pushing operations, it can also connect to various interfaces.





* ECG only

GSSD2

Rod Type

Electric Actuator with Motor Specification

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●Specifications, Model No. Notation, External Dimension Drawings	
· GSSD2-20	332
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GSSD2 System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)					Max. Pushing Force (N)
			Horizontal	Vertical	20	25	50	75	100	
GSSD2-20	□35	6	4.4	6.4	250		250			100
		9	3.2	4	400		400	300		70
GSSD2-32	□42	6	9	11.6		250				220
		12	4.8	4.8		500				90
GSSD2-50	□56	6	14.8	19.6		250		200		590
		12	14.8	13.2		400		350		425

Electric Actuator Rod Type

GSSD2-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSSD2 - 20 ❶ G ❷ E ❸ - 06 ❹ 020 ❺ B ❻ B ❼ N ❽ - R01 ❽ - ○ ❾ - ❿ - ○ ⓫

❶Size

20	20

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
09	9 mm

❺Stroke

020	20 mm
050	50 mm
075	75 mm
100	100 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❾Option

Blank	Rod end female thread
N	Rod end male thread

❿Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓫Accessories *4
(When rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 Single-knuckle: SSD2-I-20, Double-knuckle: SSD2-Y-20. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□35 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø6	
Stroke	mm	20 to 100	
Screw lead	mm	6	9
Max. Payload kg *1 *2	Horizontal	4.4	3.2
	Vertical	6.4	4
Operating Speed Range *3	mm/s	10 to 250	12 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	100	70
Pushing Operation Speed Range	mm/s	10 to 20	12 to 20
Repeatability *4	mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	93
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

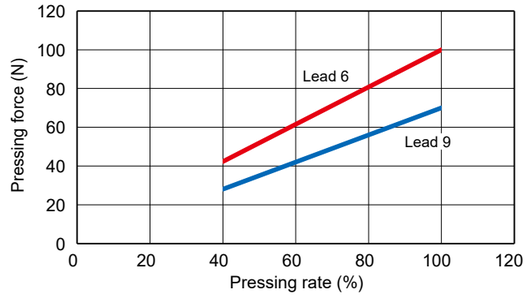
[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/Deceleration 0.3/0.7 G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	0.8	0.3		
12	0.8	0.3	1.5	1.1
50	4.4	3.9	3.2	2
70	4.4	3.9	3.2	2.7
100	4.4	3.9	3.2	2.7
150	4.4	3.9	3.2	2.7
200	2	1.5	3.2	2.7
250	2	1.5	2.4	1.9
300			0.4	1.9
350			0.4	
400			0.4	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	6.4	5.9		
12	6.4	5.9	4	3.5
50	6.4	5.9	4	3.5
70	4	3.5	4	3.5
100	4	3.5	4	3.5
150	1.6	1.1	3.2	2.7
200	0.8	0.3	3	2.7
250			0.8	0.3
300			0.8	0.3
350			0.4	
400				

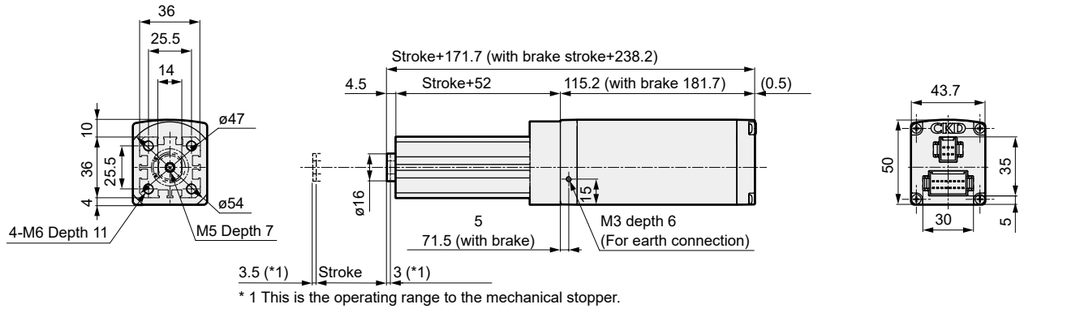
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

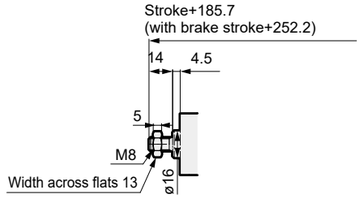
External Dimension Drawing

● GSSD2-20

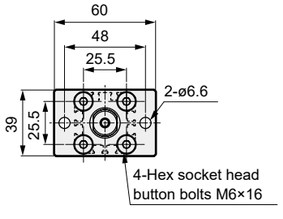


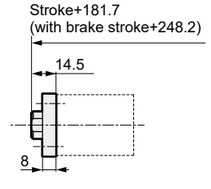
* 1 This is the operating range to the mechanical stopper.

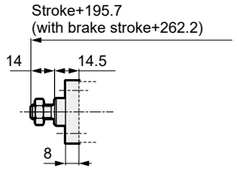
● Rod end male thread part



● Rod Side Flange (FA)







[Dimension Table by Stroke]

Stroke Code		020	050	075	100
Stroke (mm)		20	50	75	100
Weight (kg)	Without Brake	0.8	0.9	1	1
	With Brake	1.2	1.3	1.4	1.5

Electric Actuator Rod Type

GSSD2-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSSD2 - 32 G E - 06 025 B B N - R01 - ○ - ○ - ○

❶Size

32	32

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable*3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❾Option

Blank	Rod end female thread
N	Rod end male thread

❿Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓫Accessories *4 (When rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 Single-knuckle: SSD2-I-32, Double-knuckle: SSD2-Y-32. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□42 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø8	
Stroke	mm	25 to 100	
Screw lead	mm	6	12
Max. Payload kg *1 *2	Horizontal	9	4.8
	Vertical	11.6	4.8
Operating Speed Range *3	mm/s	10 to 250	15 to 500
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	220	90
Pushing Operation Speed Range	mm/s	10 to 20	15 to 20
Repeatability	*4 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	70
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

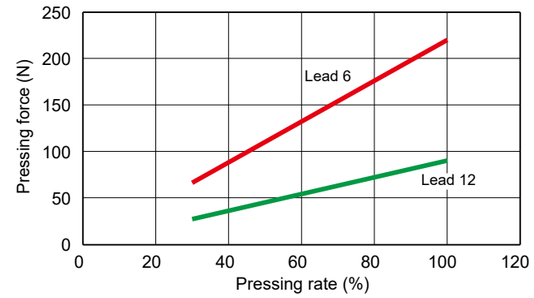
[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	1.6	1.1		
15	1.6	1.1	1.2	0.7
50	6.8	6.3	4.8	4.3
70	6.8	6.3	4.8	4.3
100	9	8.7	4.8	4.3
150	6.8	6.3	3.6	3.1
200	2.8	2.3	3.6	3.1
250	0.8	0.3	3.6	3.1
300			3.6	3.1
350			1.6	1.1
400			1.6	1.1
500			0.8	0.3

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	8.8	8.3		
15	8.8	8.3	4.4	3.9
50	11.6	11.1	4.8	4.3
70	5.2	4.7	4.8	4.3
100	5.2	4.7	4.8	4.3
150	2	1.5	4.8	4.3
200	0.8	0.3	4.5	4.3
250			1.2	0.7
300			1.2	0.7
350				
400				
500				

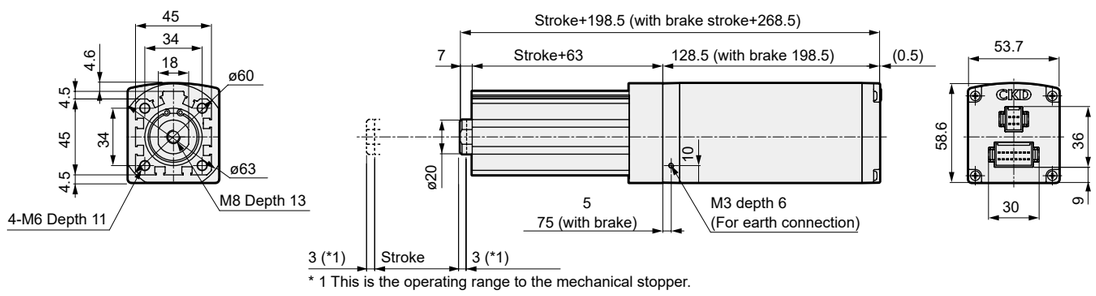
Pushing Force



*The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

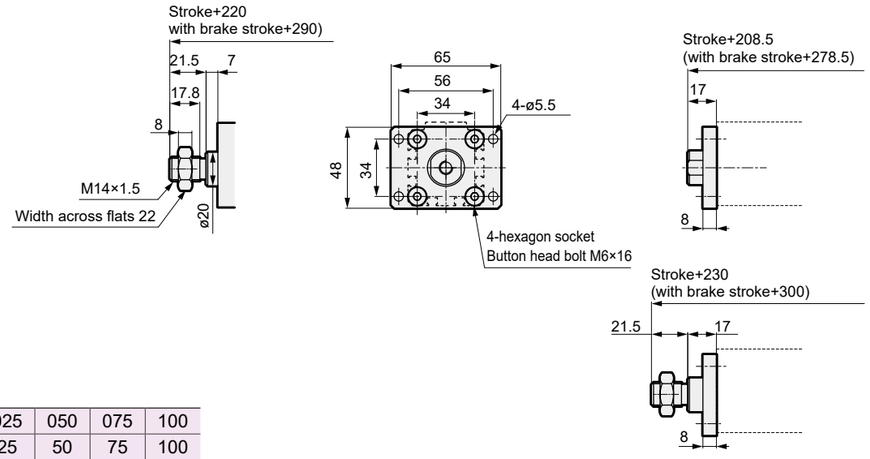
External Dimension Drawing

● GSSD2-32



* 1 This is the operating range to the mechanical stopper.

● Rod end male thread part ● Rod Side Flange (FA)



[Dimension Table by Stroke]

Stroke Code		025	050	075	100
Stroke (mm)		25	50	75	100
Weight (kg)	Without Brake	1.3	1.5	1.6	1.7
	With Brake	1.9	2.1	2.2	2.3

Electric Actuator Rod Type

GSSD2-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSSD2 - 50 ❶ G ❷ E ❸ - 06 ❹ 025 ❺ B ❻ B ❼ N ❽ - R01 ❽ - ❾ - ❿ - ⓫

❶Size

50	50

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable*3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❾Option

Blank	Rod end female thread
N	Rod end male thread

❿Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓫Accessories *4
(When rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.
*4 Single-knuckle: SSD2-I-50, Double-knuckle: SSD2-Y-50. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□56 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø12	
Stroke mm		25 to 100	
Screw lead mm		6	12
Max. Payload kg *1	Horizontal	14.8	14.8
	Vertical	19.6	13.2
Operating Speed Range *2 mm/s		20 to 250	20 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force N		590	425
Pushing Operation Speed Range mm/s		20	20
Repeatability *4 mm		±0.01	
Lost Motion mm		0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	640	320
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

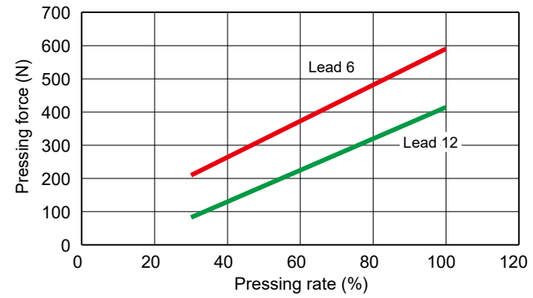
[Horizontal Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
20	14.8	12.8	4.4	2.4
50	9.6	7.6	9.6	7.6
70	9.6	7.6	9.6	7.6
100	9.6	7.6	14.8	12.8
150	6	4	10.8	8.8
200	4	2	10.8	8.8
250	0.4		6	4
300			6	4
350			2.8	0.8
400			0.7	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
20	19.6	18.6	3.6	2.6
50	14	13	13.2	12.2
70	4.8	3.8	12	11
100	4.8	3.8	10.5	11
150	0.8		4	3
200			4	3
250			2	1.5
300			0.7	
400				

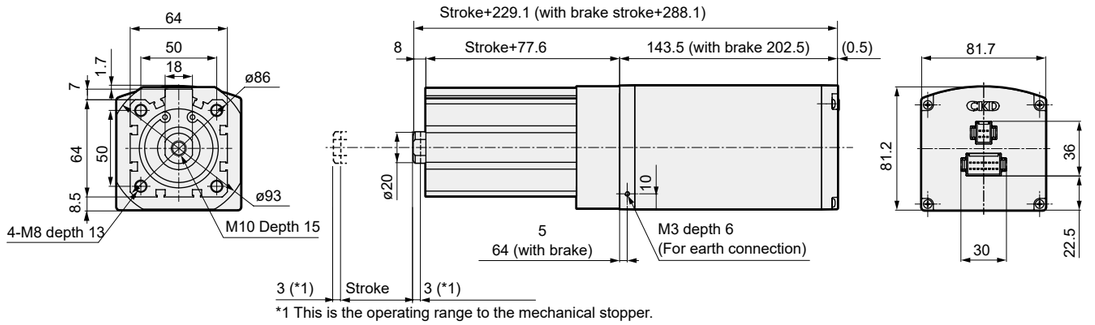
Pushing Force



*The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

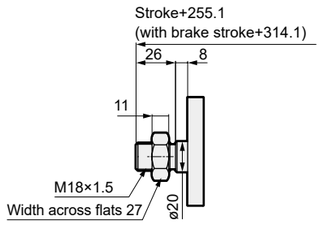
External Dimension Drawing

● GSSD2-50

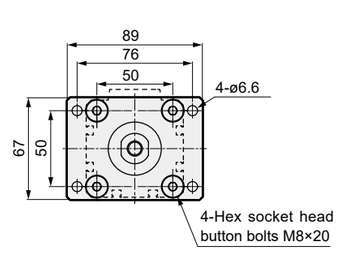


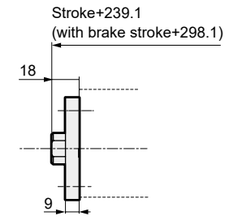
*1 This is the operating range to the mechanical stopper.

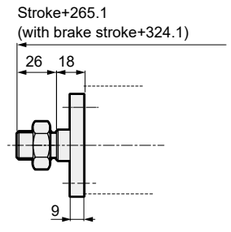
● Rod end male thread part



● Rod Side Flange (FA)







[Dimension Table by Stroke]

Stroke Code		025	050	075	100
Stroke (mm)		25	50	75	100
Weight (kg)	Without Brake	2.6	2.7	2.9	3.1
	With Brake	3.9	4	4.2	4.4

Model Selection

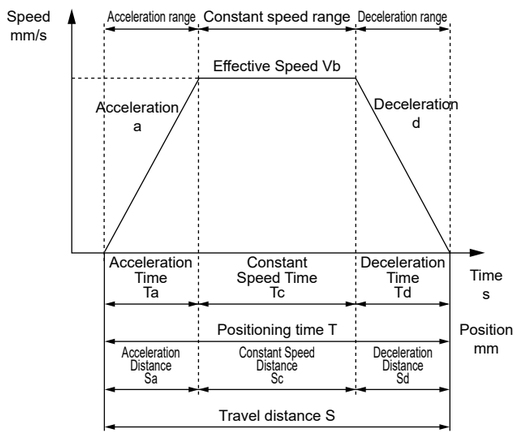
STEP1 Confirmation of Payload

The payload varies depending on the mounting orientation, screw lead, transport speed, and acceleration/deceleration. Select the size and screw lead by referring to the system table (P. 331), the specification table for each model, and the payload table by speed and acceleration/deceleration.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

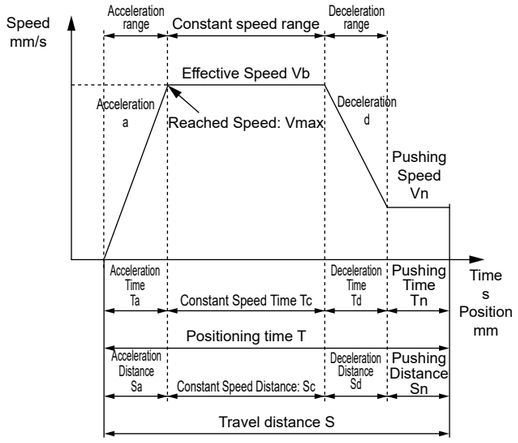
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times S / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d\times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 332, 334 and 336 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times (S - Sn+Vn^2 / 2 / d) / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 332, 334 and 336 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

MEMO

Electric Actuator with Motor Specification

GSTK

Stopper Type

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· GSTK-32	344
· GSTK-50	346
●Model Selection	348
⚠ Precautions for Use	404
Model Selection Check Sheet	409

GSTK System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Thrust (N) Horizontal/ Vertical	Stroke (mm) and Max. Speed (mm/s) 10	20	30	Max. Pushing Force (N)
GSTK-20	□35	6	62	200			100
		9	39	350			70
GSTK-32	□42	6	113	200			220
		12	47	300			90
GSTK-50	□56	6	192		150		590
		12	129		300		425

Electric Actuator Stopper Type

GSTK-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTK - M - 20 G E - 06 020 B B N - R01

❶Size

20	20

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
09	9 mm

❺Stroke

010	10 mm
020	20 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□35 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø6	
Stroke	mm	10, 20	
Screw lead	mm	6	9
Max. Thrust	N	62	39
Operating Speed Range *2	mm/s	10 to 200	12 to 350
Max. Acceleration/Deceleration Vertical		0.3	0.3
Max. Pushing Force	N	100	70
Pushing Operation Speed Range	mm/s	10 to 20	12 to 20
Repeatability *3	mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	93
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

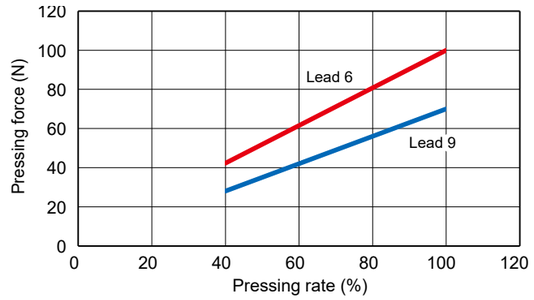
* 1 Thrust varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Thrust

[Horizontal/Vertical Installation] (N)

Speed (mm/s)	Acceleration/deceleration 0.3G	
	Screw Lead (mm)	
	6	9
10	62	
12	62	39
50	62	39
70	39	39
100	39	39
150	15	31
200	7	29
250		7
300		7
350		3

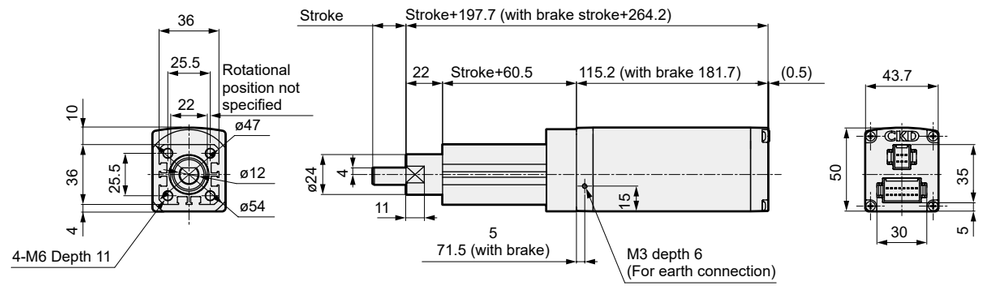
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTK-20



[Dimension Table by Stroke]

Stroke Code		010	020
Stroke (mm)		10	20
Weight (kg)	Without Brake	0.8	0.8
	With Brake	1.3	1.3

Electric Actuator Stopper Type

GSTK-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTK - M - 32 G E - 06 020 B B N - R01

❶Size

32	32

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Straight Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

010	10 mm
020	20 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable*3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□42 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø8	
Stroke	mm	10, 20	
Screw lead	mm	6	12
Max. Thrust	N	113	47
Operating Speed Range *2	mm/s	10 to 200	15 to 300
Max. Acceleration/Deceleration	Vertical	0.3	0.3
Max. Pushing Force	N	220	90
Pushing Operation Speed Range	mm/s	10 to 20	15 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	70
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

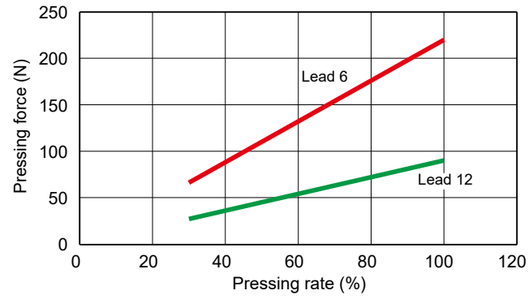
*1 Thrust varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Thrust

[Horizontal/Vertical Installation] (N)

Speed (mm/s)	Acceleration/deceleration 0.3G	
	Screw Lead (mm)	
	6	12
10	86	
15	86	43
50	113	47
70	50	47
100	50	47
150	19	47
200	7	44
250		11
300		11

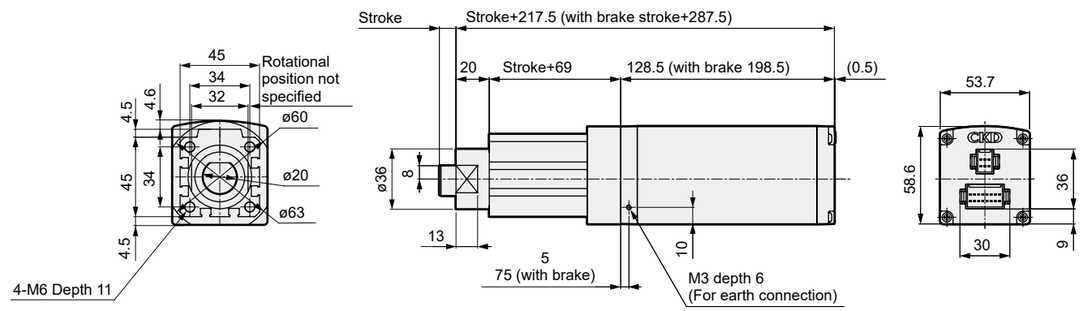
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTK-32



[Dimension Table by Stroke]

Stroke Code		010	020
Stroke (mm)		10	20
Weight (kg)	Without Brake	1.4	1.4
	With Brake	2	2

Electric Actuator Stopper Type

GSTK-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTK - M - 50 G E - 06 020 B B N - R01

❶Size

50	50

❷Connected Controller *1

G	ECMG/ECG-A

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

020	20 mm
030	30 mm

❻Brake *2

N	None
B	Yes

❼Encoder

B	Absolute Encoder
C	Incremental Encoder

❽Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□56 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø12	
Stroke mm		20, 30	
Screw lead mm		6	12
Max. Thrust N		192	129
Operating Speed Range *2 mm/s		20 to 150	20 to 300
Max. Acceleration/Deceleration Vertical		0.3	0.3
Max. Pushing Force N		590	425
Pushing Operation Speed Range mm/s		20	20
Repeatability *3 mm		±0.01	
Lost Motion mm		0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	640	320
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

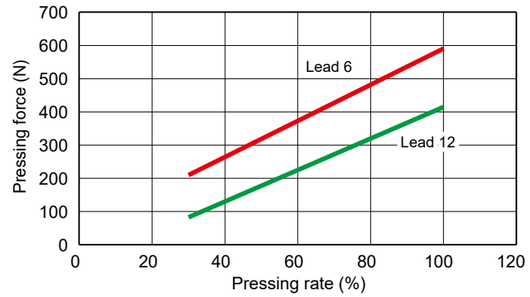
*1 Thrust varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Thrust

[Horizontal/Vertical Installation] (N)

Speed (mm/s)	Acceleration/deceleration 0.3G	
	Screw Lead (mm)	
	6	12
20	192	35
50	137	129
70	47	117
100	47	102
150	7	39
200		39
250		19
300		6

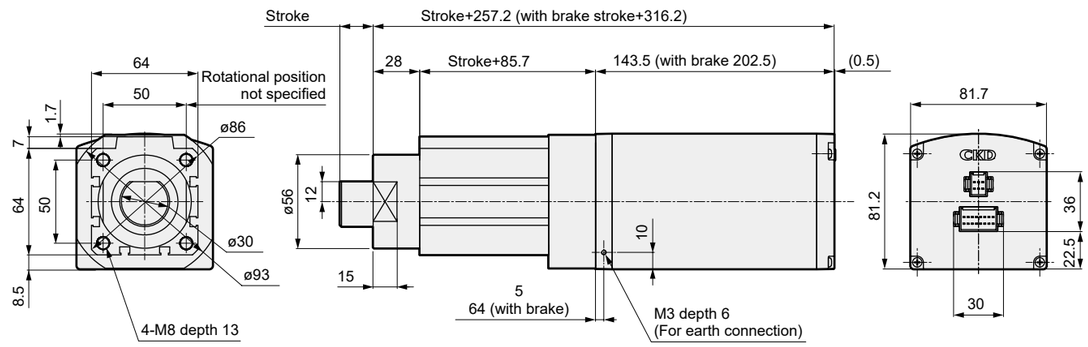
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTK-50



[Dimension Table by Stroke]

Stroke Code		020	030
Stroke (mm)		20	30
Weight (kg)	Without Brake	3	3.1
	With Brake	4.3	4.4

Model Selection

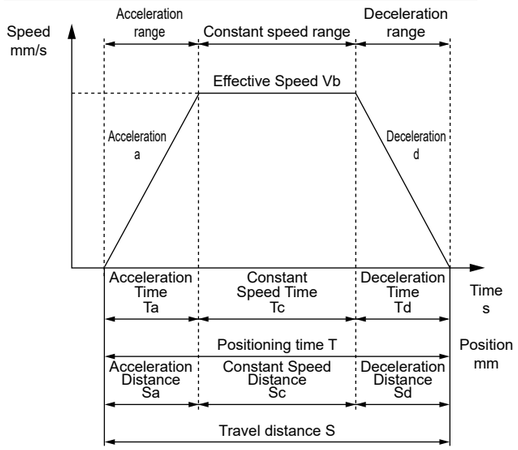
STEP1 Confirmation of thrust

Thrust varies with size, screw lead, operation speed and acceleration/deceleration. Refer to System Table (page 341), the specification table for each model and the thrust table by speed and acceleration/deceleration to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

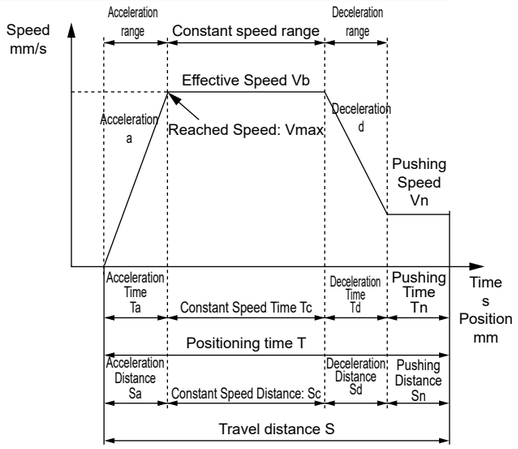
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times S / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d\times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 342, 334 and 336 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times (S - Sn+Vn^2 / 2 / d) / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= ((Vb+Vn)\times Td) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 342, 334 and 336 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

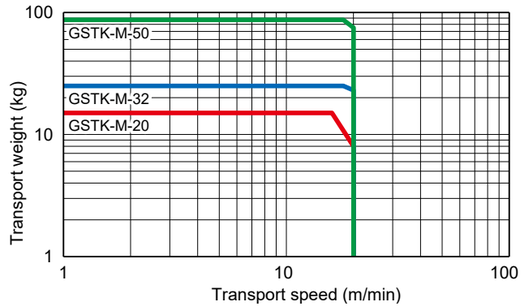
STEP3 Operating range

Select a model from the conveying weight (m) and conveying speed (V) so that the allowable absorption energy in the graph on the right is not exceeded.

(Example) Transport speed 15 m/min, Transport weight 20 kg

[How to Read the Graph]
For the selection method of the specifications above, obtain the intersection point of 15 m/min on the horizontal axis and 20 kg on the vertical axis and then select GSTK-32 within the allowable absorbed energy range.

Figure 1 Allowable absorbed energy



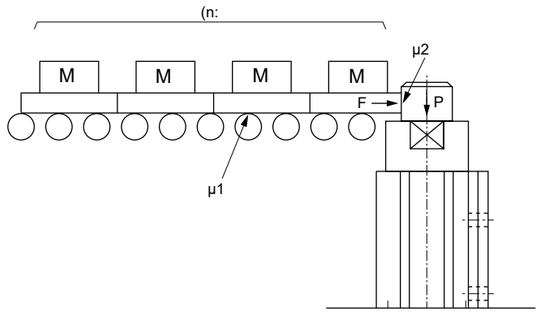
STEP4 Lateral Load and Thrust

The thrust during rod retraction varies depending on the magnitude of the lateral load applied to the rod tip, so check the required operating thrust.

1. Determine the lateral load (F) applied to the rod tip.
$F = 10 \cdot m \cdot n \cdot \mu_1$
F: Lateral load (N)
M: Transport weight: kg
n: Quantity of transported items
μ1: Coefficient of friction between transport pallet and conveyor

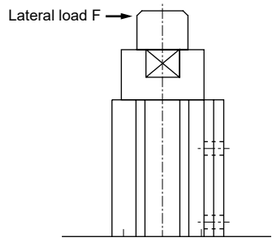
2. Determine the required thrust (P) during rod retraction.
$P = F \cdot \mu_2$
P: Required thrust (N)
μ2: Coefficient of friction between transported item and rod
(Note) The coefficient of friction differs depending on the material of the transported item, so please refer to the coefficients in the table below.

Material of transported item	Steel	Aluminum	Urethane
μ2	0.5	0.8	2.0



Allowable Lateral Load

Size	Stroke (mm)		
	10	20	30
GSTK-20	106.5	93.2	-
GSTK-32	272.8	238.7	-
GSTK-50	-	582.8	525.8



MEMO

G Series
GSSD2
GSTK
GSTG
GSTS
GSTL
GCKW
Ending

GSTG

Guided Type

Electric Actuator with Motor Specification

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GSTG System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)					Max. Pushing Force (N)
			Horizontal	Vertical	20	25	50	75	100	
GSTG-20	□35	6	4.4	6.4	250		250			100
		9	3.2	4	400		400	300		70
GSTG-32	□42	6	9	11.6		250				220
		12	4.8	4.8		500				90
GSTG-50	□56	6	14.8	19.6		250		200		590
		12	14.8	13.2		400		350		425

Electric Actuator Guided Type

GSTG-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTG - ❶M - ❷20 ❸G ❹E - ❺06 ❻020 ❼B ❽B N - ❾R01

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Screw Lead

06	6 mm
09	9 mm

❻Stroke

020	20 mm
050	50 mm
075	75 mm
100	100 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□35 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø6	
Stroke	mm	20 to 100	
Screw lead	mm	6	9
Max. Payload kg *1	Horizontal	4.4	3.2
	Vertical	6.4	4
Operating Speed Range *2	mm/s	10 to 250	12 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	100	70
Pushing Operation Speed Range	mm/s	10 to 20	12 to 20
Repeatability *3	mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	93
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

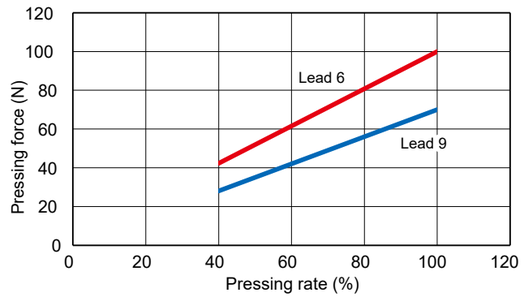
Speed (mm/s)	Acceleration/Deceleration 0.3/0.7 G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	0.8	0.3		
12	0.8	0.3	1.5	1.1
50	4.4	3.9	3.2	2
70	4.4	3.9	3.2	2.7
100	4.4	3.9	3.2	2.7
150	4.4	3.9	3.2	2.7
200	2	1.5	3.2	2.7
250	2	1.5	2.4	1.9
300			0.4	1.9
350			0.4	
400			0.4	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	6.4	5.9		
12	6.4	5.9	4	3.5
50	6.4	5.9	4	3.5
70	4	3.5	4	3.5
100	4	3.5	4	3.5
150	1.6	1.1	3.2	2.7
200	0.8	0.3	3	2.7
250			0.8	0.3
300			0.8	0.3
350			0.4	
400				

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

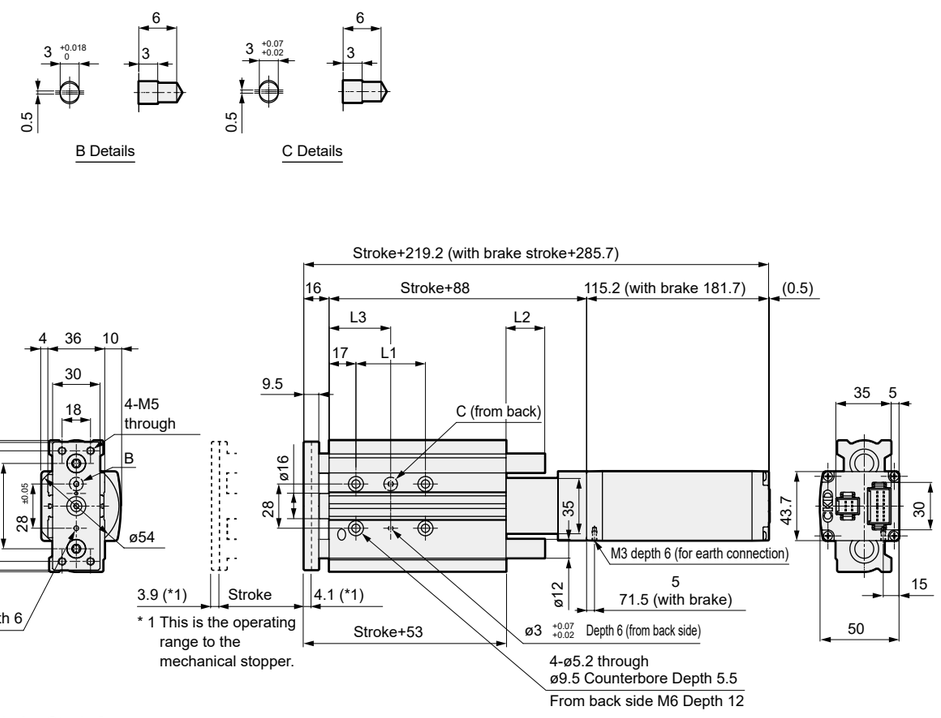
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTG-20



[Dimension Table by Stroke]

Stroke Code		020	050	075	100
Stroke (mm)		20	50	75	100
L1		24	44	44	44
L2		0	0	24.5	24.5
L3		29	39	39	39
Weight (kg)	Without Brake	1.3	1.5	1.8	2
	With Brake	1.7	2	2.2	2.4

Electric Actuator Guided Type

GSTG-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTG - M - 32 G E - 06 025 B B N - R01

❶Bearing type

M	Plain bearing

❷Size

32	32

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□42 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø8	
Stroke	mm	25 to 100	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	9	4.8
	Vertical	11.6	4.8
Operating Speed Range *2	mm/s	10 to 250	15 to 500
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	220	90
Pushing Operation Speed Range	mm/s	10 to 20	15 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	70
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

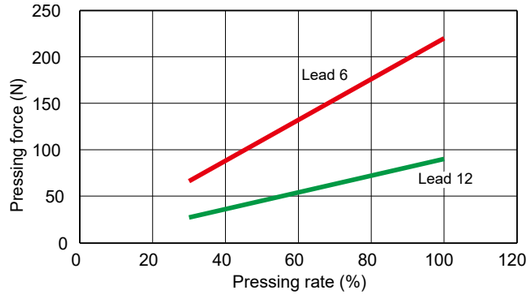
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	1.6	1.1		
15	1.6	1.1	1.2	0.7
50	6.8	6.3	4.8	4.3
70	6.8	6.3	4.8	4.3
100	9	8.7	4.8	4.3
150	6.8	6.3	3.6	3.1
200	2.8	2.3	3.6	3.1
250	0.8	0.3	3.6	3.1
300			3.6	3.1
350			1.6	1.1
400			1.6	1.1
500			0.8	0.3

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
10	8.8	8.3		
15	8.8	8.3	4.4	3.9
50	11.6	11.1	4.8	4.3
70	5.2	4.7	4.8	4.3
100	5.2	4.7	4.8	4.3
150	2	1.5	4.8	4.3
200	0.8	0.3	4.5	4.3
250			1.2	0.7
300			1.2	0.7
350				
400				
500				

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

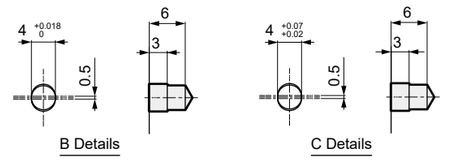
Pushing Force

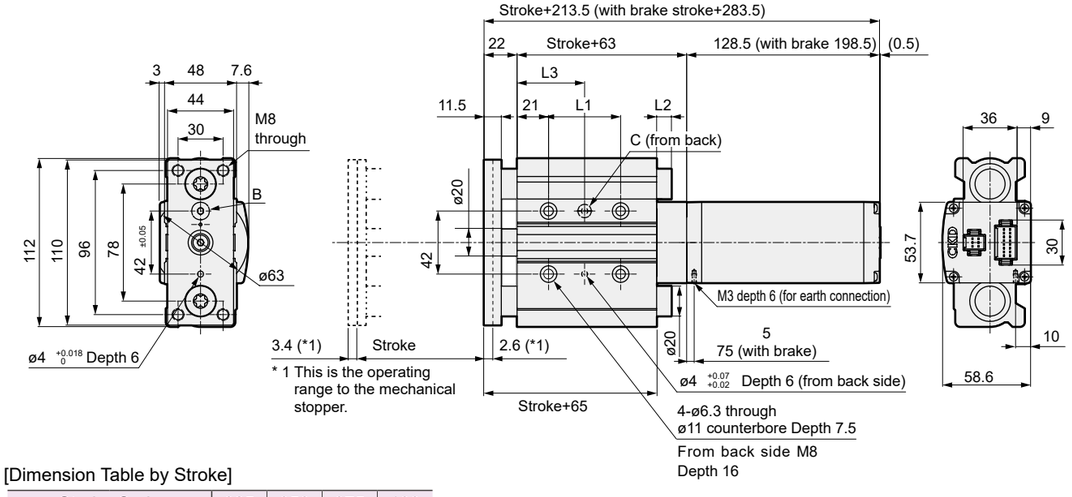


* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTG-32





[Dimension Table by Stroke]

Stroke Code		025	050	075	100
Stroke (mm)		25	50	75	100
L1		24	48	48	48
L2		13.5	13.5	34.5	34.5
L3		33	45	45	45
Weight (kg)	Without Brake	2.6	3	3.5	3.8
	With Brake	3.2	3.6	4.1	4.4

Electric Actuator Guided Type

GSTG-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTG - M - 50 G E - 06 025 B B N - R01

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□56 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø12	
Stroke	mm	25 to 100	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	14.8	14.8
	Vertical	19.6	13.2
Operating Speed Range *2	mm/s	20 to 250	20 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	590	425
Pushing Operation Speed Range	mm/s	20	20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	640	320
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

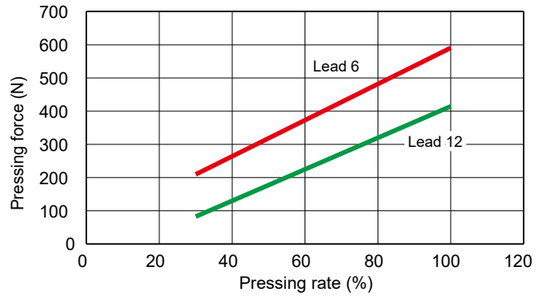
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
20	14.8	12.8	4.4	2.4
50	9.6	7.6	9.6	7.6
70	9.6	7.6	9.6	7.6
100	9.6	7.6	14.8	12.8
150	6	4	10.8	8.8
200	4	2	10.8	8.8
250	0.4		6	4
300			6	4
350			2.8	0.8
400			0.7	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		12 mm	
	Stroke (mm)			
	50 or less	100 or less	50 or less	100 or less
20	19.6	18.6	3.6	2.6
50	14	13	13.2	12.2
70	4.8	3.8	12	11
100	4.8	3.8	10.5	11
150	0.8		4	3
200			4	3
250			2	1.5
300			0.7	
400				

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

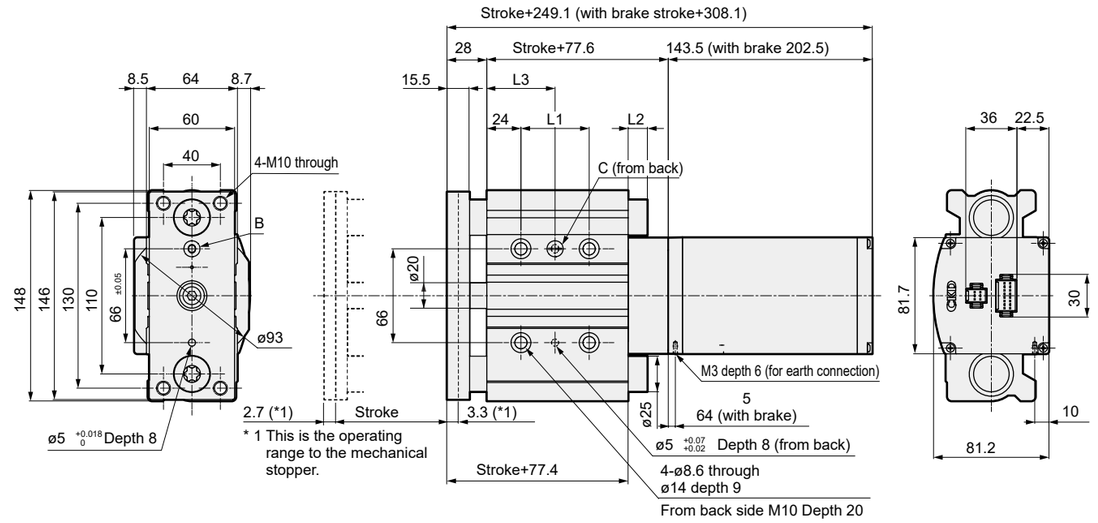
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTG-50



[Dimension Table by Stroke]

Stroke Code		025	050	075	100
Stroke (mm)		25	50	75	100
L1		24	48	48	48
L2		13.1	13.1	38.1	38.1
L3		36	48	48	48
Weight (kg)	Without Brake	4.9	5.5	6.3	6.9
	With Brake	6.2	6.8	7.6	8.2

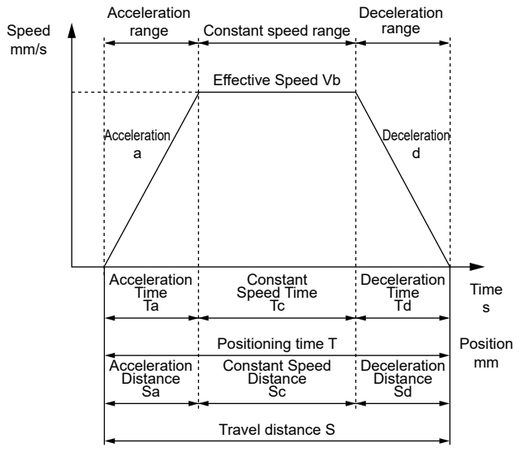
STEP1 Confirmation of Payload

The payload varies depending on the mounting orientation, screw lead, transport speed, and acceleration/deceleration. Select the size and screw lead by referring to the system table (P. 353), the specification table for each model, and the payload table by speed and acceleration/deceleration.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

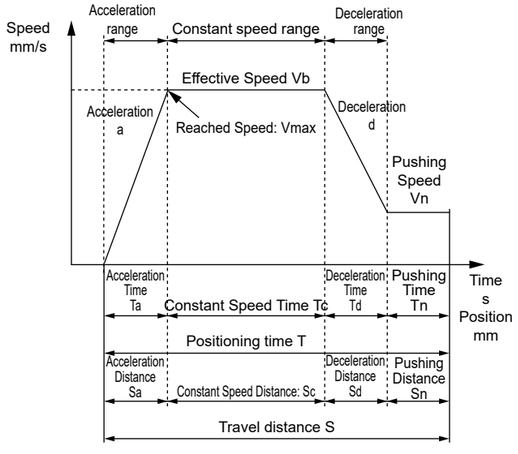
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	= $[2\times a\times d\times S / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	= $(a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	= $(d\times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). n that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 354, 356 and 358 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	= $[2\times a\times d\times(S - Sn+Vn^2 / 2 / d) / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	= $(a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	= $((Vb+Vn)\times Td) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 354, 356 and 358 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

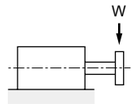
Resultant moment

$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

Static Allowable Load and Static Allowable Moment

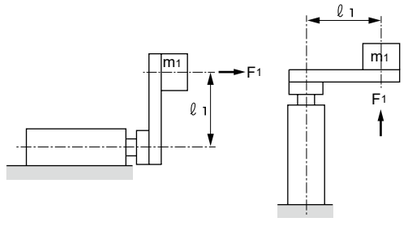
Model No.	Stroke (mm)	Lateral Load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
GSTG-20	20	67	35.3	0.9	35.3
	50	46		0.62	
	75	60		0.8	
	100	51		0.69	
GSTG-32	25	223	171.5	4.35	171.5
	50	180		3.5	
	75	179		3.48	
	100	156		3.04	
GSTG-50	25	348	294	9.56	294
	50	296		7.86	
	75	292		8.02	
	100	257		7.07	

● Lateral load W (N)



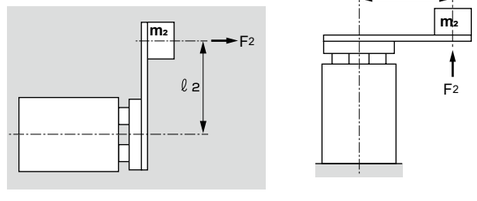
● Bending moment MP (N·m)

MP=F1×ℓ1=10×m1×G×ℓ1



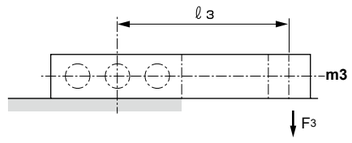
● Lateral bending moment MR (N·m)

MR=F2×ℓ2=10×m2×G×ℓ2



● Torsional moment MY (N·m)

MY = F3×ℓ3 = 10×m3×ℓ3

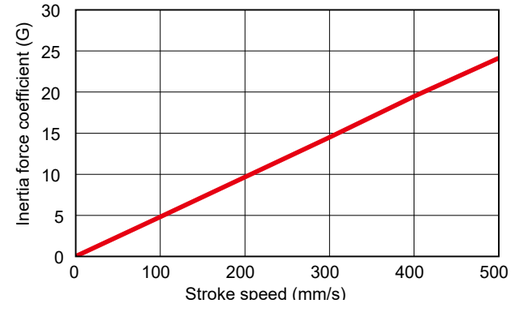


m1:
m2:
m3:
} Load weight (kg)

ℓ1:
ℓ2:
ℓ3:
} Eccentricity (m)

G: Inertial force coefficient

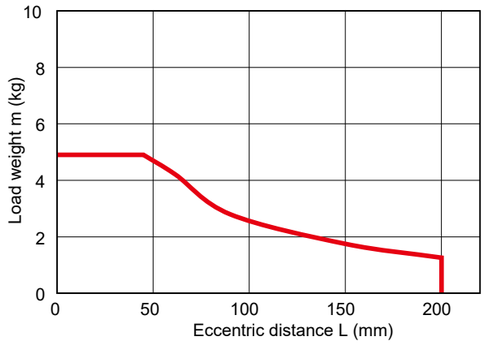
Figure 1 Trend of inertial force coefficient for guided type



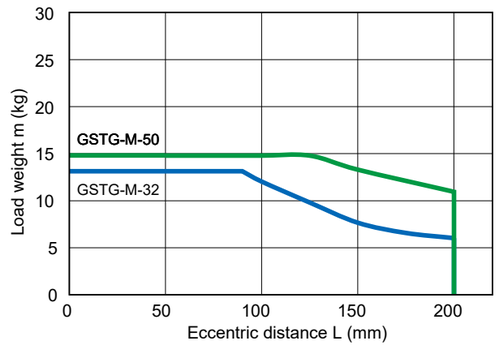
STEP4 Confirmation of Allowable Overhang Length

Confirm that the overhang length during operation is within the allowable overhang length range.

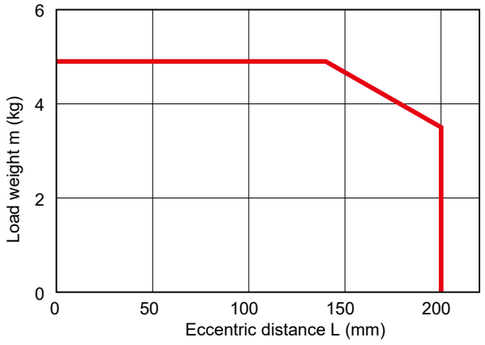
● GSTG-M-20
· Stroke 50 mm or less



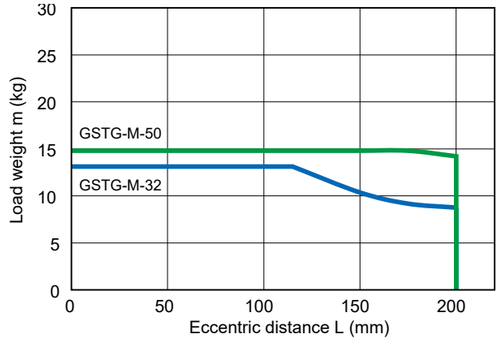
● GSTG-M-32, 50
· Stroke 50 mm or less



● GSTG-M-20
· Stroke exceeds 50 mm

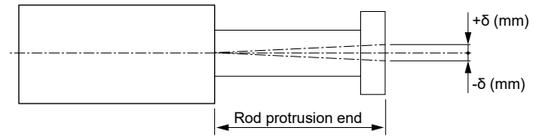


● GSTG-M-32, 50
· Stroke exceeds 50 mm

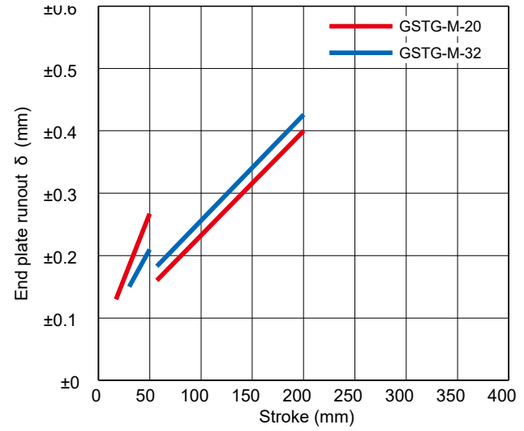


Runout accuracy

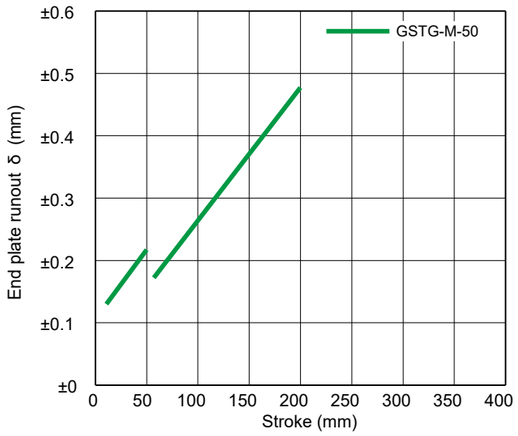
The amount of runout δ that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)



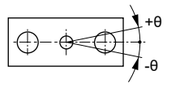
● GSTG-M-20, 32



● GSTG-M-50

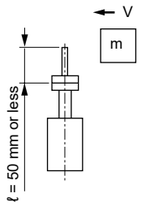


Non-rotation accuracy (Reference value)



Size	Non-rotation accuracy θ (degrees)
GSTG-20	±0.07
GSTG-32	±0.06
GSTG-50	±0.05

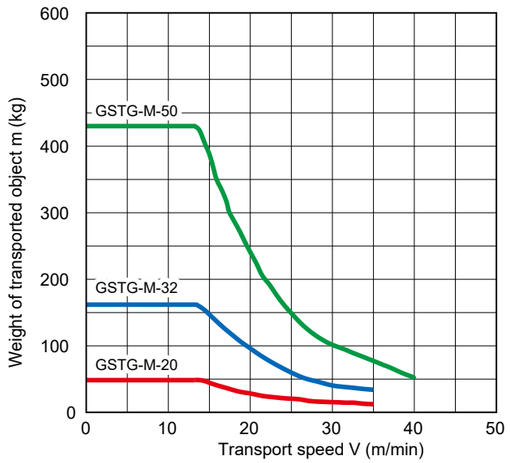
Operating range when used as a stopper



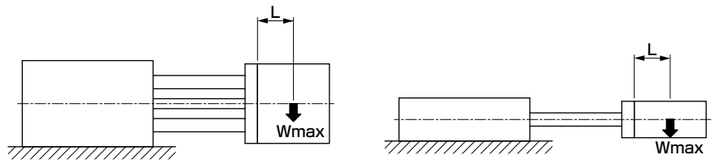
*1 When using as a stopper, please select a model with a stroke of 50 or less.
*2 The total length of the stopper part should be ℓ = 50 mm or less.
*3 When fixing the actuator body, ensure the bolt screwing depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*4 For calculation of required operating thrust, please refer to P. 436.
*5 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

Impact load

GSTG-M (Plain bearing)

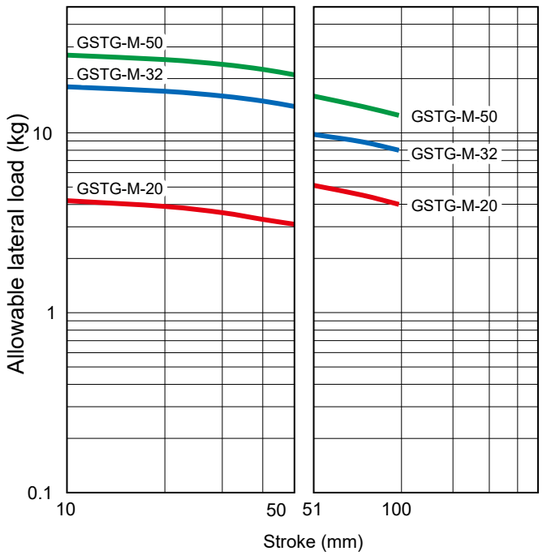


Allowable Lateral Load Plain bearing

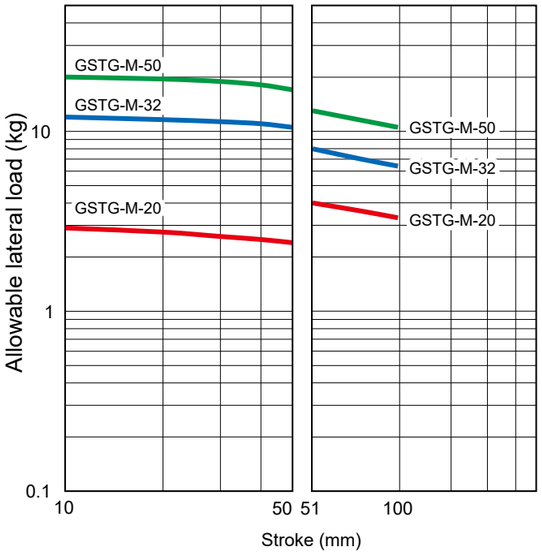


Wmax: Lateral load (kg)
L: Load's center of gravity position (mm)

● When L=50 mm



● When L=100 mm



GSTS

Guided Type

Electric Actuator with Motor Specification

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●Specifications, Model No. Notation, External Dimension Drawings
· GSTG-20 368
· GSTG-32 370
· GSTS-50 372
●Model Selection 374
⚠Precautions for Use 404
Model Selection Check Sheet 410

GSTS System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)		Max. Pushing Force (N)
			Horizontal	Vertical	25	50	
GSTS-20	□35	6	4.4	6.4	250		100
		9	3.2	4	400		70
GSTS-32	□42	6	9	11.6	250		220
		12	4.8	4.8	500		90
GSTS-50	□56	6	14.8	19.6	250		590
		12	14.8	13.2	400		425

Electric Actuator Guided Type

GSTS-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTS - ❶M - ❷20 ❸G ❹E - ❺06 ❻025 ❼B ❽B N - ❾R01 - ❿F

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
09	9 mm

❻Stroke

025	25 mm
050	50 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□35 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø6	
Stroke	mm	25, 50	
Screw lead	mm	6	9
Max. Payload kg *1	Horizontal	4.4	3.2
	Vertical	6.4	4
Operating Speed Range *2	mm/s	10 to 250	12 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	100	70
Pushing Operation Speed Range	mm/s	10 to 20	12 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	93
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

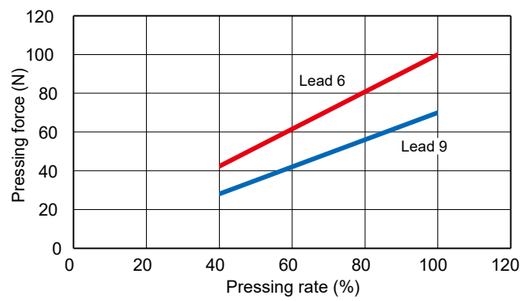
Speed (mm/s)	Acceleration/Deceleration 0.3/0.7 G	
	Screw Lead	
	6 mm	9 mm
	Stroke (mm)	
	50 or less	50 or less
10	0.8	
12	0.8	1.5
50	4.4	3.2
70	4.4	3.2
100	4.4	3.2
150	4.4	3.2
200	2	3.2
250	2	2.4
300		0.4
350		0.4
400		0.4

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G	
	Screw Lead	
	6 mm	9 mm
	Stroke (mm)	
	50 or less	50 or less
10	6.4	
12	6.4	4
50	6.4	4
70	4	4
100	4	4
150	1.6	3.2
200	0.8	3
250		0.8
300		0.8
350		0.4
400		

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

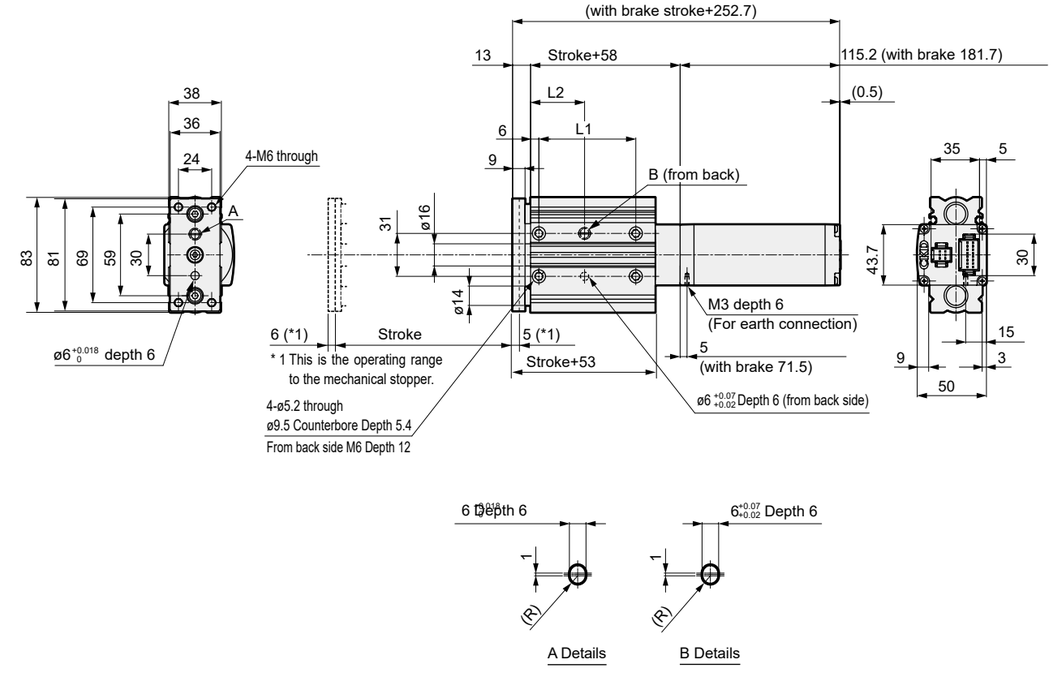
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTS-20



[Dimension Table by Stroke]

Stroke Code		025	050
Stroke (mm)		25	50
L1		45	70
L2		26.5	39
Weight (kg)	Without Brake	1.2	1.5
	With Brake	1.7	1.9

Electric Actuator Guided Type

GSTS-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTS - M - 32 G E - 06 025 B B N - R01 - F

❶Bearing type

M	Plain bearing

❷Size

32	32

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□42 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø8	
Stroke	mm	25, 50	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	9	4.8
	Vertical	11.6	4.8
Operating Speed Range *2	mm/s	10 to 250	15 to 500
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	220	90
Pushing Operation Speed Range	mm/s	10 to 20	15 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	70
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

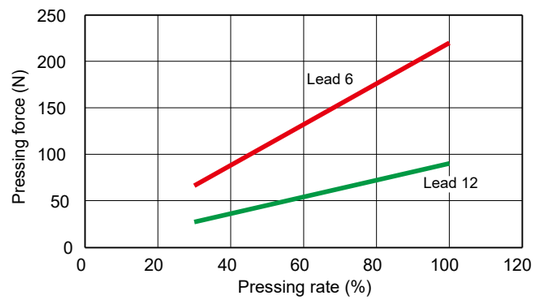
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G Screw Lead 6 mm Stroke (mm) 50 or less	Acceleration/deceleration 0.3G/0.7G Screw Lead 12 mm Stroke (mm) 50 or less
10	1.6	
15	1.6	1.2
50	6.8	4.8
70	6.8	4.8
100	9	4.8
150	6.8	3.6
200	2.8	3.6
250	0.8	3.6
300		3.6
350		1.6
400		1.6
500		0.8

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G Screw Lead 6 mm Stroke (mm) 50 or less	Acceleration/deceleration 0.3G Screw Lead 12 mm Stroke (mm) 50 or less
10	8.8	
15	8.8	4.4
50	11.6	4.8
70	5.2	4.8
100	5.2	4.8
150	2	4.8
200	0.8	4.5
250		1.2
300		1.2
350		
400		
500		

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

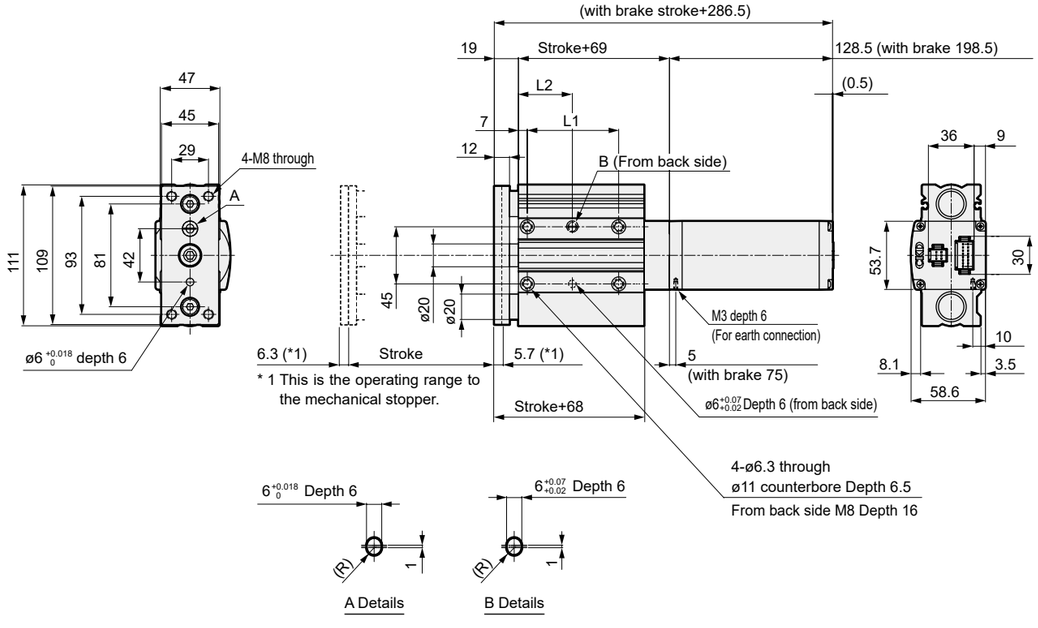
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTS-32



[Dimension Table by Stroke]

Stroke Code		025	050
Stroke (mm)		25	50
L1		47	72
L2		30	42.5
Weight (kg)	Without Brake	2.4	2.8
	With Brake	3	3.4

Electric Actuator Guided Type

GSTS-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTS - ❶M - ❷50 ❸G ❹E - ❺06 ❻025 ❼B ❽B N - ❾R01 - ❿F

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□56 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø12	
Stroke	mm	25, 50	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	14.8	14.8
	Vertical	19.6	13.2
Operating Speed Range *2	mm/s	20 to 250	20 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	590	425
Pushing Operation Speed Range	mm/s	20	20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	640	320
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

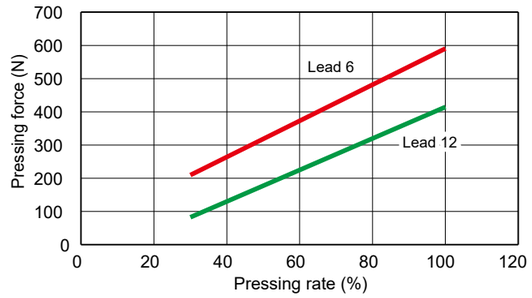
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G	
	Screw Lead	
	6 mm	12 mm
	Stroke (mm)	
	50 or less	50 or less
20	14.8	4.4
50	9.6	9.6
70	9.6	9.6
100	9.6	14.8
150	6	10.8
200	4	10.8
250	0.4	6
300		6
350		2.8
400		0.7

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G	
	Screw Lead	
	6 mm	12 mm
	Stroke (mm)	
	50 or less	50 or less
20	19.6	3.6
50	14	13.2
70	4.8	12
100	4.8	10.5
150	0.8	4
200		4
250		2
300		0.7
400		

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

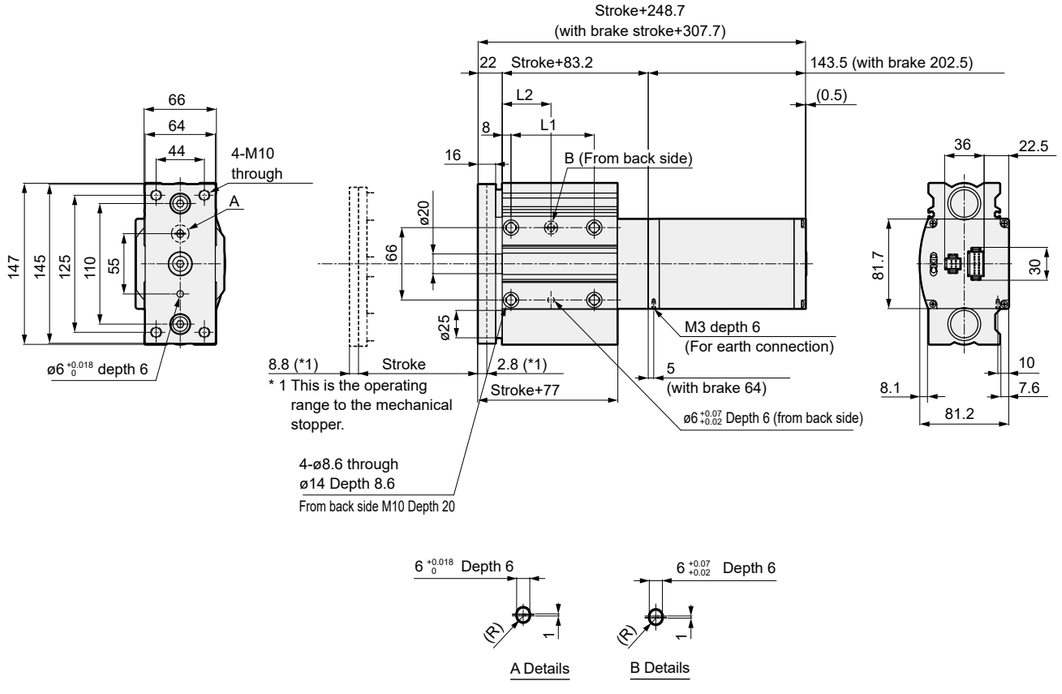
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTS-50



[Dimension Table by Stroke]

Stroke Code		025	050
Stroke (mm)		25	50
L1		51	76
L2		32	44.5
Weight (kg)	Without Brake	4.4	5
	With Brake	5.7	6.3

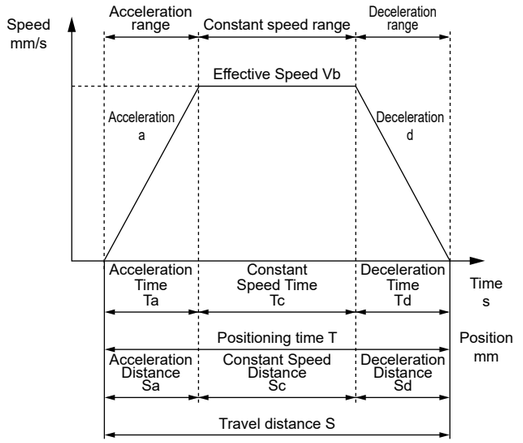
STEP1 Confirmation of Payload

The payload varies depending on the mounting orientation, screw lead, transport speed, and acceleration/deceleration. Select the size and screw lead by referring to the system table (P. 367), the specification table for each model, and the payload table by speed and acceleration/deceleration.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

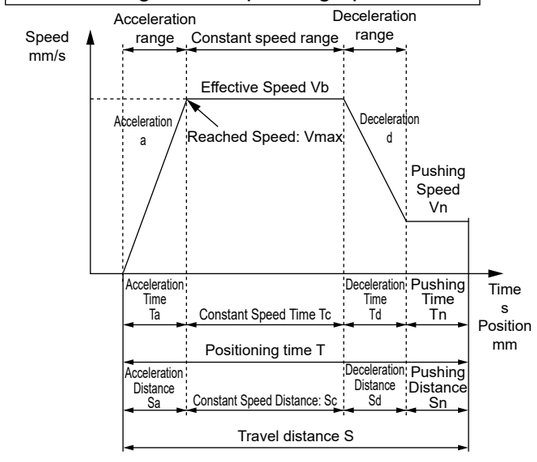
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times S / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d\times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 368, 370 and 372 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times (S - Sn+Vn^2 / 2 / d) / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	= ((Vb+Vn)×Td) / 2
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 368, 370 and 372 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

Resultant moment

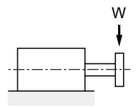
$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

Static Allowable Load and Static Allowable Moment

Model No.	Stroke (mm)	Lateral load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
GSTS-M-20	25	48	32.6	0.71	32.6
	50	35		0.52	
GSTS-M-32	25	141	107.4	2.86	107.4
	50	109		2.21	
GSTS-M-50	25	213	201.7	5.86	201.7
	50	170		4.68	

Calculate the allowable load when operating under load using the formula below.
Catalog allowable lateral load×0.9

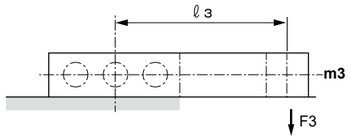
● Lateral load W (N) [Vertical Installation]



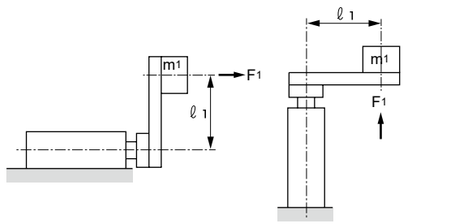
$$\frac{m1\times\ell1\times10}{L} \leq W$$

Size	L
20	0.016+st
32	0.022+st
50	0.025+st

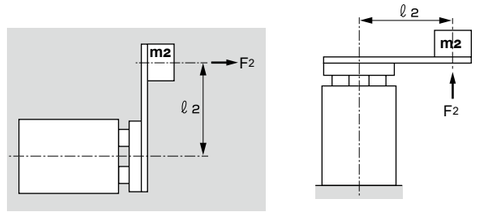
● Torsional moment MY (N·m)
MY= F3×ℓ3 =10×m3×ℓ3



● Bending moment MP (N·m)
MP=F1×ℓ1=10×m1×G×ℓ1



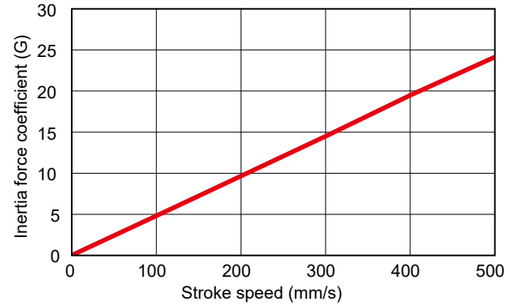
● Lateral bending moment MR (N·m)
MR=F2×ℓ2=10×m2×G×ℓ2



m_1: m_2: m_3: } Load weight (kg)
ℓ_1: ℓ_2: ℓ_3: } Eccentricity (m)

G: Inertial force coefficient

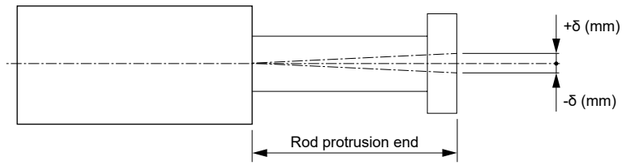
Figure 1 Trend of inertial force coefficient for guided type

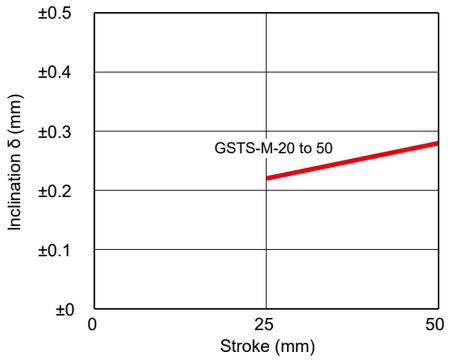


Model Selection

Runout accuracy

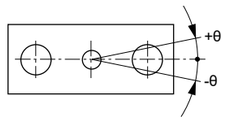
The amount of tilt that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)





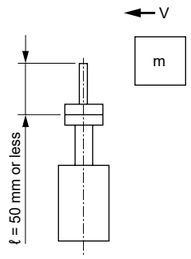
Non-rotation accuracy

(Reference value)



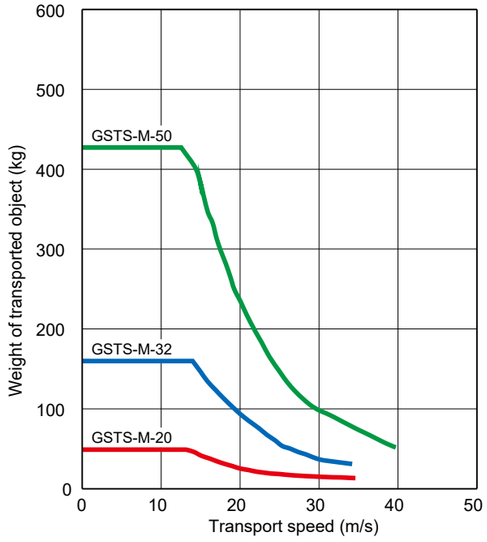
Size	Non-rotation accuracy θ (degrees)
GSTS-M-20	±0.10
GSTS-M-32	±0.08
GSTS-M-50	±0.07

Operating range when used as a stopper

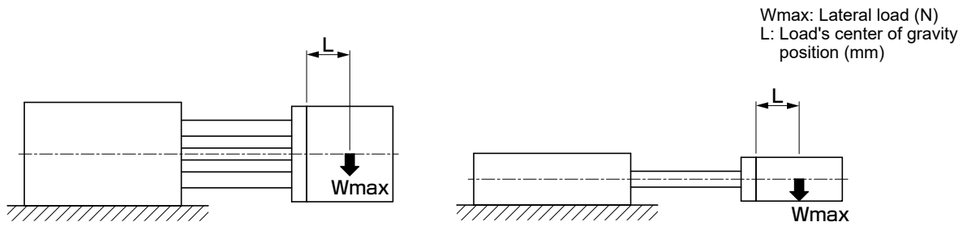


*1 The total length of the stopper part should be ℓ = 50 mm or less.
*2 When fixing the actuator body, ensure the bolt screwing depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*3 For calculation of required operating thrust, please refer to P. 436.
*4 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

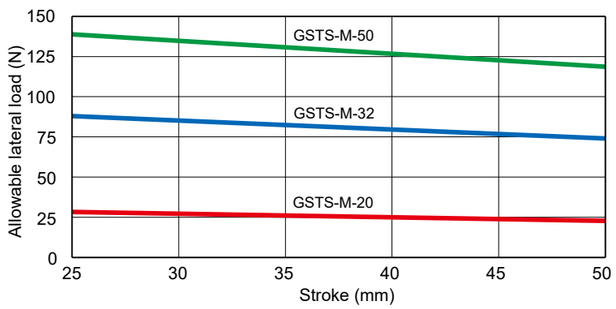
Impact load



Allowable Lateral Load　Plain bearing



Wmax: Lateral load (N)
L: Load's center of gravity position (mm)



*1: Calculate the allowable lateral load when operating under load using the formula below.
Catalog allowable lateral load value×0.9

*2: When designing, please consider the safety factor according to the operating conditions.

MEMO

G Series
GSSD2
GSTK
GSTG
GSTS
GSTL
GCKW
Ending

GSTL

Guided Type

Electric Actuator with Motor Specification

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GSTL System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)				Max. Pushing Force (N)
			Horizontal	Vertical	50	100	150	200	
GSTL-20	□35	6	4.4	6.4	250				100
		9	3.2	4	400	300			70
GSTL-32	□42	6	9	11.6	250		200		220
		12	4.8	4.8	500		400		90
GSTL-50	□56	6	14.8	19.6	250	200			590
		12	14.8	13.2	400	350	300		425

Electric Actuator Guided Type

GSTL-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTL - ❶M - ❷20 ❸G ❹E - ❺06 ❻050 ❼B ❽B N - ❾R01 - ❿F

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
09	9 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□35 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø6	
Stroke	mm	50 to 200	
Screw lead	mm	6	9
Max. Payload kg *1	Horizontal	4.4	3.2
	Vertical	6.4	4
Operating Speed Range *2	mm/s	10 to 250	12 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	100	70
Pushing Operation Speed Range	mm/s	10 to 20	12 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	93
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

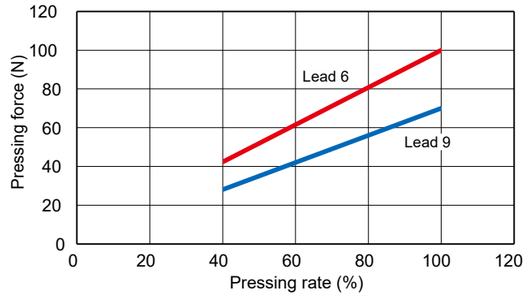
Speed (mm/s)	Acceleration/Deceleration 0.3/0.7 G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	200 or less	50 or less	200 or less
10	0.8	0.3		
12	0.8	0.3	1.5	1.1
50	4.4	3.9	3.2	2
70	4.4	3.9	3.2	2.7
100	4.4	3.9	3.2	2.7
150	4.4	3.9	3.2	2.7
200	2	1.5	3.2	2.7
250	2	1.5	2.4	1.9
300			0.4	1.9
350			0.4	
400			0.4	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G			
	Screw Lead			
	6 mm		9 mm	
	Stroke (mm)			
	50 or less	200 or less	50 or less	200 or less
10	6.4	5.9		
12	6.4	5.9	4	3.5
50	6.4	5.9	4	3.5
70	4	3.5	4	3.5
100	4	3.5	4	3.5
150	1.6	1.1	3.2	2.7
200	0.8	0.3	3	2.7
250			0.8	0.3
300			0.8	0.3
350			0.4	
400				

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

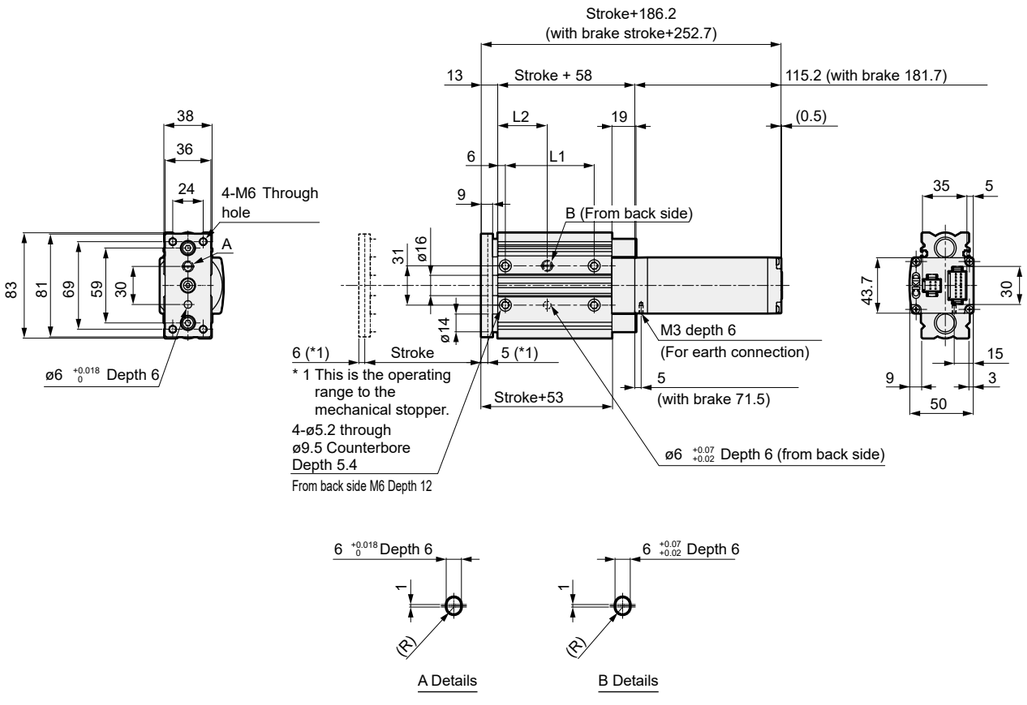
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTL-20



[Dimension Table by Stroke]

Stroke Code		050	100	150	200
Stroke (mm)		50	100	150	200
L1		70	120	170	220
L2		39	64	89	114
Weight (kg)	Without Brake	1.5	2	2.5	3
	With Brake	2	2.5	2.9	3.4

Electric Actuator Guided Type

GSTL-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTL - M - 32 G E - 06 050 B B N - R01 - F

❶Bearing type

M	Plain bearing

❷Size

32	32

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□42 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø8	
Stroke	mm	50 to 200	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	9	4.8
	Vertical	11.6	4.8
Operating Speed Range *2	mm/s	10 to 250	15 to 500
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	220	90
Pushing Operation Speed Range	mm/s	10 to 20	15 to 20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	140	70
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

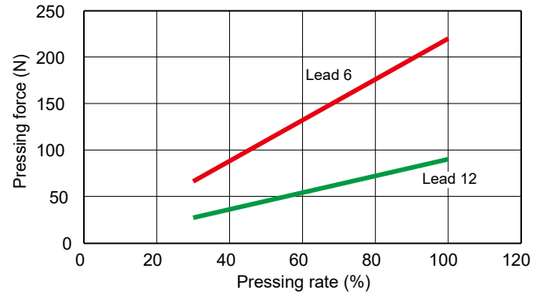
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G					
	Screw Lead					
	6 mm			12 mm		
	Stroke (mm)					
	50 or less	100 or less	200 or less	50 or less	100 or less	200 or less
10	1.6	1.1	0.6			
15	1.6	1.1	0.6	1.2	0.7	0.2
50	6.8	6.3	5.8	4.8	4.3	3.8
70	6.8	6.3	5.8	4.8	4.3	3.8
100	9	8.7	8.2	4.8	4.3	3.8
150	6.8	6.3	5.8	3.6	3.1	2.6
200	2.8	2.3	1.8	3.6	3.1	2.6
250	0.8	0.3		3.6	3.1	2.6
300				3.6	3.1	2.6
350				1.6	1.1	0.6
400				1.6	1.1	0.6
500				0.8	0.3	

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G					
	Screw Lead					
	6 mm			12 mm		
	Stroke (mm)					
	50 or less	100 or less	200 or less	50 or less	100 or less	200 or less
10	8.8	8.3	7.8			
15	8.8	8.3	7.8	4.4	3.9	3.4
50	11.6	11.1	10.6	4.8	4.3	3.8
70	5.2	4.7	4.2	4.8	4.3	3.8
100	5.2	4.7	4.2	4.8	4.3	3.8
150	2	1.5	1	4.8	4.3	3.8
200	0.8	0.3		4.5	4.3	3.8
250				1.2	0.7	0.2
300				1.2	0.7	0.2
350						
400						
500						

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

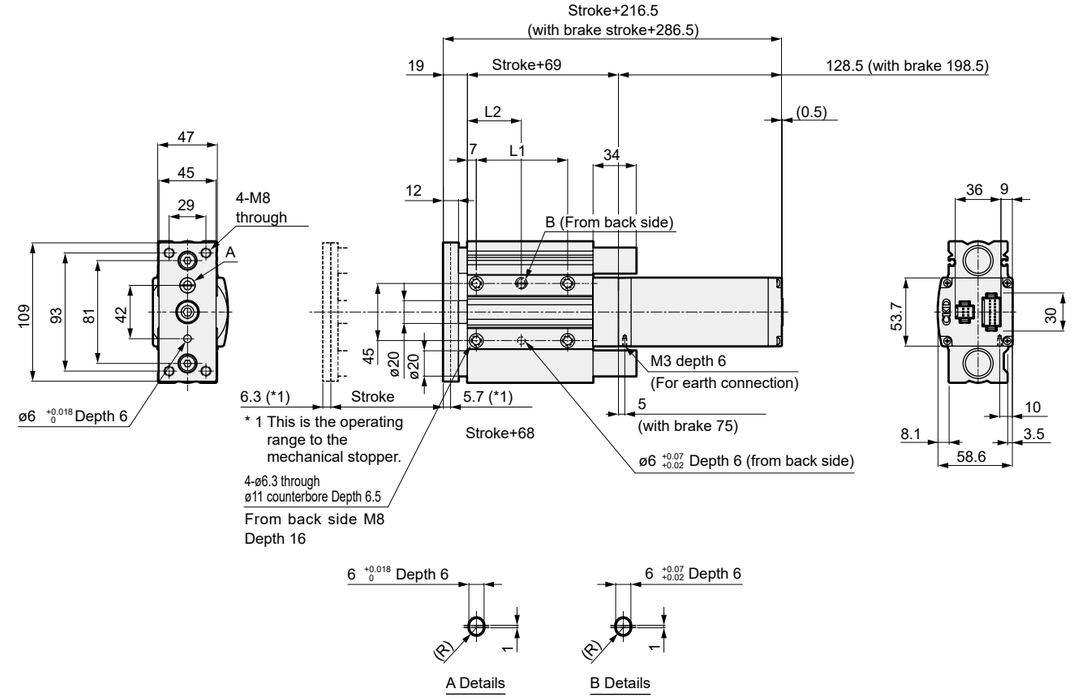
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTL-32



[Dimension Table by Stroke]

Stroke Code		050	100	150	200
Stroke (mm)		50	100	150	200
L1		72	122	172	222
L2		42.5	67.5	92.5	117.5
Weight (kg)	Without Brake	3	3.8	4.4	5.5
	With Brake	3.6	4.4	5	6.1

Electric Actuator Guided Type

GSTL-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GSTL - M - 50 G E - 06 050 B B N - R01 - F

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller*1

G	ECMG/ECG-A

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Brake *2

N	None
B	Yes

❽Encoder

B	Absolute Encoder
C	Incremental Encoder

❾Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

❿Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 529.
*2 Select "Yes" for vertical use.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

Specifications

Connected Controller		ECMG, ECG-A	
Motor		□56 Stepping Motor	
Encoder Type		Battery-less Absolute Encoder Incremental Encoder	
Drive Method		Sliding screw ø12	
Stroke	mm	50 to 200	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	14.8	14.8
	Vertical	19.6	13.2
Operating Speed Range *2	mm/s	20 to 250	20 to 400
Max. Acceleration/ Deceleration	Horizontal	0.7	0.7
	Vertical	0.3	0.3
Max. Pushing Force	N	590	425
Pushing Operation Speed Range	mm/s	20	20
Repeatability	*3 mm	±0.01	
Lost Motion	mm	0.3 or less	
Brake	Type	Non-excitation operating type	
	Holding Force N	640	320
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on acceleration/deceleration and speed.
*2 Maximum speed may decrease depending on conditions.
*3 Since there is backlash, if stopping accuracy is required, please use an external stopper, etc., and complete positioning with a pushing motion.

Speed and Payload

[Horizontal Installation] (kg)

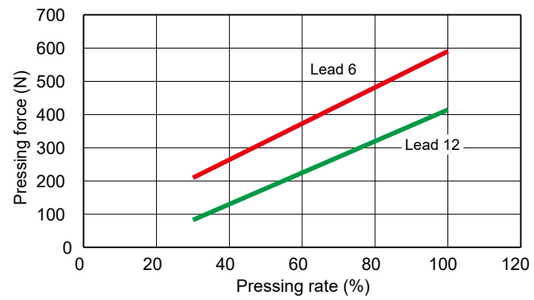
Speed (mm/s)	Acceleration/deceleration 0.3G/0.7G					
	Screw Lead					
	6 mm			12 mm		
	Stroke (mm)					
	50 or less	100 or less	200 or less	50 or less	100 or less	200 or less
20	14.8	12.8	11.8	4.4	2.4	1.4
50	9.6	7.6	6.6	9.6	7.6	6.6
70	9.6	7.6	6.6	9.6	7.6	6.6
100	9.6	7.6	6.6	14.8	12.8	11.8
150	6	4	3	10.8	8.8	7.8
200	4	2	1	10.8	8.8	7.5
250	0.4			6	4	3
300				6	4	3
350				2.8	0.8	
400				0.7		

[Vertical Installation] (kg)

Speed (mm/s)	Acceleration/deceleration 0.3G					
	Screw Lead					
	6 mm			12 mm		
	Stroke (mm)					
	50 or less	100 or less	200 or less	50 or less	100 or less	200 or less
20	19.6	18.6	15	3.6	2.6	1.6
50	14	13	12	13.2	12.2	11.2
70	4.8	3.8	2.8	12	11	10
100	4.8	3.8	2.8	10.5	11	8.5
150	0.8			4	3	2
200				4	3	2
250				2	1.5	1
300				0.7		
400						

* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

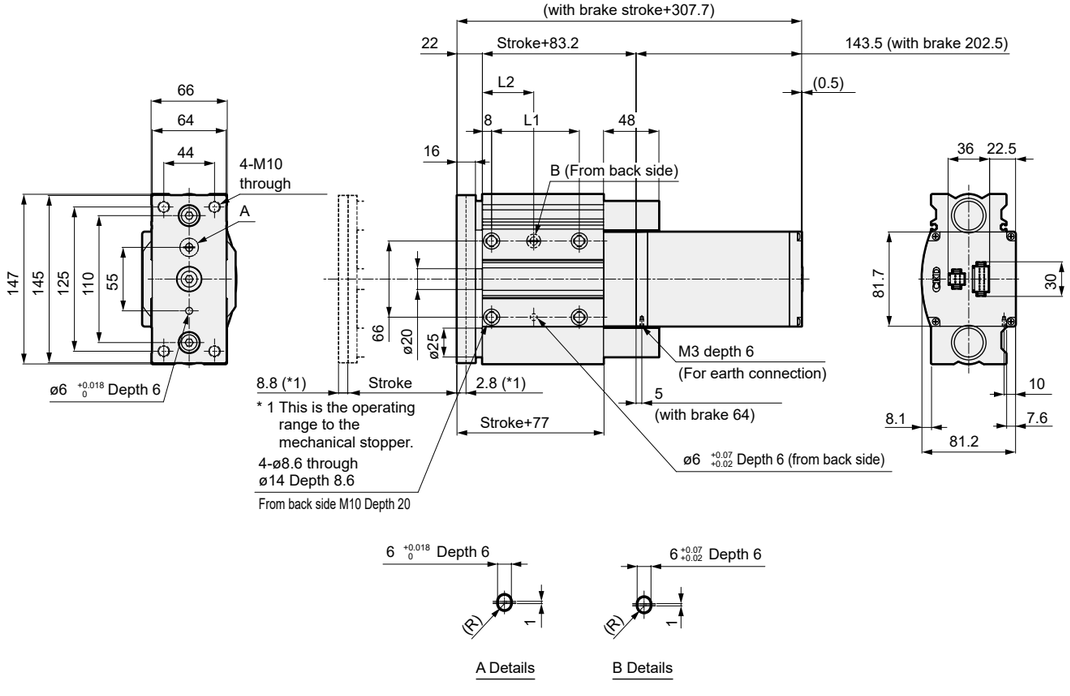
Pushing Force



* The upper pushing force is a reference value. It may vary depending on conditions such as pushing speed.

External Dimension Drawing

● GSTL-50



[Dimension Table by Stroke]

Stroke Code		050	100	150	200
Stroke (mm)		50	100	150	200
L1		76	126	176	226
L2		44.5	69.5	94.5	119.5
Weight (kg)	Without Brake	5.4	6.8	7.9	9.3
	With Brake	6.7	8.1	9.2	10.6

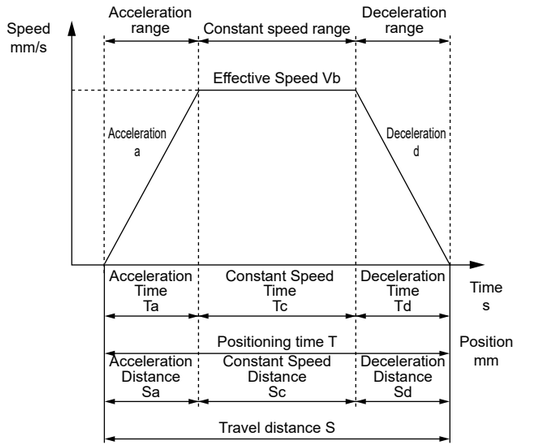
STEP1 Confirmation of Payload

The payload varies depending on the mounting orientation, screw lead, transport speed, and acceleration/deceleration. Select the size and screw lead by referring to the system table (P. 381), the specification table for each model, and the payload table by speed and acceleration/deceleration.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

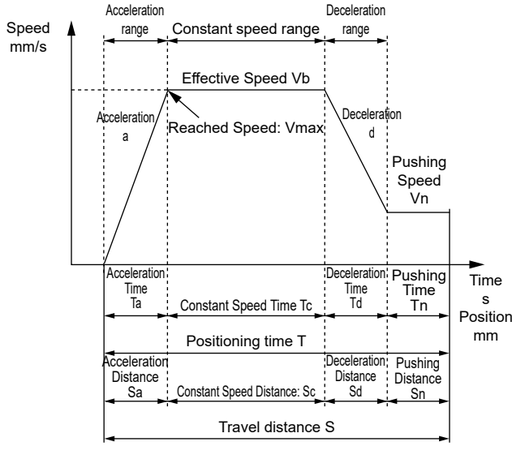
Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times S / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= Vb / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d\times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd)
	Positioning Time	T	s	= Ta+Tc+Td

* Do not use at speeds exceeding the specifications.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 382, 384 and 386 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

Positioning time for pushing operations



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s²	
	Set Deceleration	d	mm/s²	
	Travel Distance	S	mm	
	Pushing Speed	Vn	mm/s	
	Pushing Distance	Sn	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= [2\times a\times d\times (S - Sn+Vn^2 / 2 / d) / (a+d)]^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb / a
	Deceleration Time	Td	s	= (Vb - Vn) / d
	Constant Speed Time	Tc	s	= Sc / Vb
	Pushing Time	Tn	s	= Sn / Vn
	Acceleration Distance	Sa	mm	$= (a\times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= ((Vb+Vn)\times Td) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa+Sd+Sn)
	Positioning Time	T	s	= Ta+Tc+Td+Tn

* Do not use at speeds exceeding the specifications.
* Pushing speed varies depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration and deceleration vary depending on the product and usage conditions. Refer to P. 382, 384 and 386 for details.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.
* 1G ≈ 9.8 m/s².

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

Resultant moment

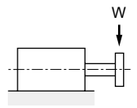
$$M_T = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

Static Allowable Load and Static Allowable Moment

Model No.	Stroke (mm)	Lateral load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
GSTL-M-20	50	54	32.6	0.80	32.6
	100	38		0.56	
	150	30		0.44	
	200	24		0.35	
GSTL-M-32	50	161	107.4	3.26	107.4
	100	121		2.45	
	150	97		1.96	
	200	81		1.64	
GSTL-M-50	50	243	201.7	6.68	201.7
	100	189		5.20	
	150	155		4.26	
	200	131		3.60	

Calculate the allowable load when operating under load using the formula below.
Catalog allowable lateral load×0.9

● Lateral load W (N) *Vertical Installation

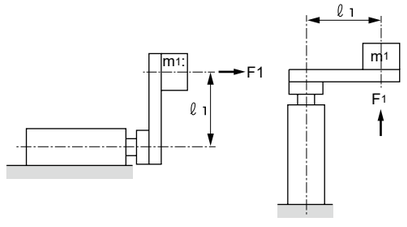


$$\frac{m_1\times \ell_1\times 10}{L} \leq W$$

Size	L
20	0.016+st
32	0.022+st
50	0.025+st

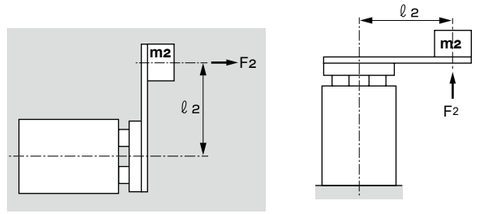
● Bending moment MP (N·m)

$MP=F_1\times \ell_1=10\times m_1\times G\times \ell_1$



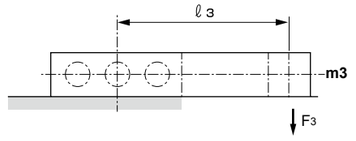
● Lateral bending moment MR (N·m)

$MR=F_2\times \ell_2=10\times m_2\times G\times \ell_2$



● Torsional moment MY (N·m)

$MY= F_3\times \ell_3 =10\times m_3\times \ell_3$

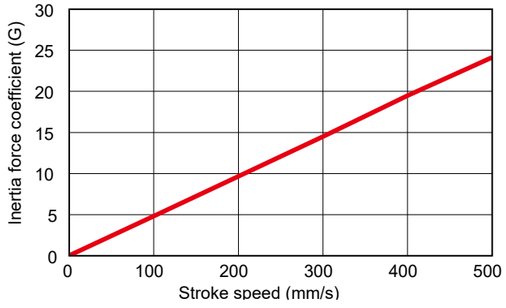


m_1: m_2: m_3: } Load weight (kg)

ℓ_1: ℓ_2: ℓ_3: } Eccentricity (m)

G: Inertial force coefficient

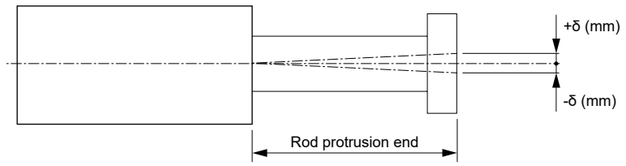
Figure 1 Trend of inertial force coefficient for guided type

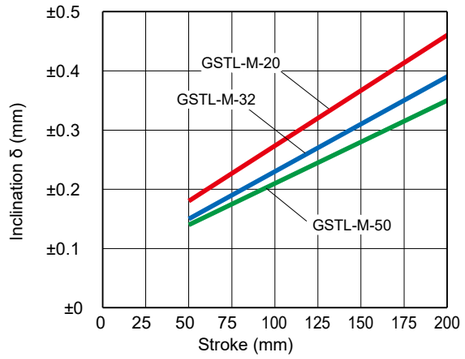


Model Selection

Runout accuracy

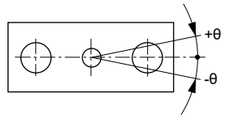
The amount of tilt that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)





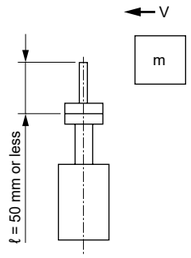
Non-rotation accuracy

(Reference value)



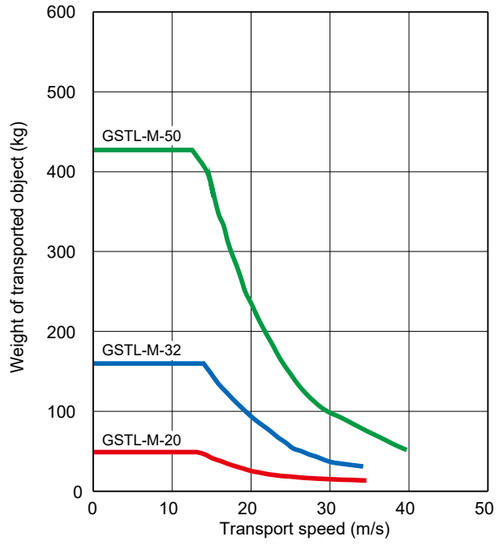
Size	Non-rotation Accuracy θ (degrees)
GSTL-M-20	±0.10
GSTL-M-32	±0.08
GSTL-M-50	±0.07

Operating range when used as a stopper



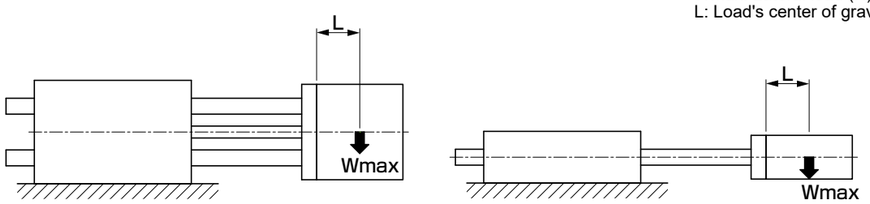
*1 When using as a stopper, please select a model with a stroke of 50 or less.
*2 The total length of the stopper part should be ℓ = 50 mm or less.
*3 When fixing the actuator body, ensure the bolt screwing depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*4 For calculation of required operating thrust, please refer to P. 436.
*5 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

Impact load

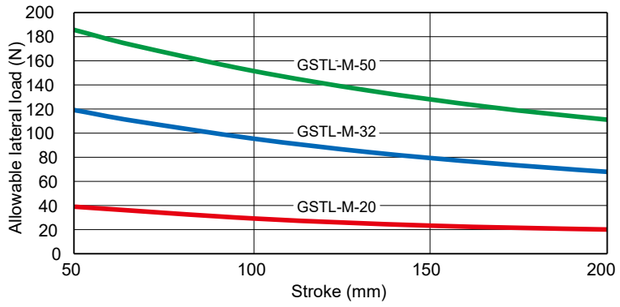


Allowable Lateral Load　Plain bearing

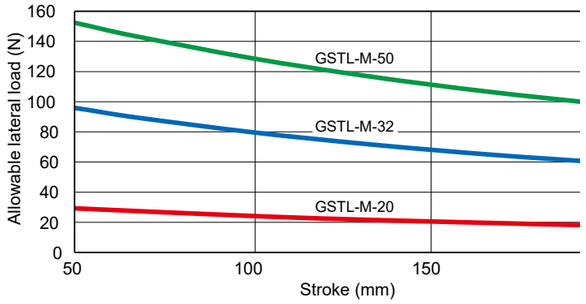
Wmax: Lateral load (N)
L: Load's center of gravity position (mm)



● When L=50 mm



● When L=100 mm



*1: Calculate the allowable lateral load when operating under load using the formula below.
Catalog allowable lateral load value×0.9
*2: When designing, please consider the safety factor according to the operating conditions.

MEMO

G Series
GSSD2
GSTK
GSTG
GSTS
GSTL
GCKW
Ending

GCKW

3-Finger Gripper Type

Electric Actuator with Motor Specification

CONTENTS

Product Introduction	328
●Specifications, Model No. Notation, External Dimension Drawings	
· GCKW-16	396
· GCKW-20	398
· GCKW-25	400
●Model Selection	402
⚠ Precautions for Use	404
Model Selection Check Sheet	411

GCKW System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Stroke and Max. Speed (mm/s)		Max. Gripping Force (N)
			4	6	
GCKW-16	□20	1.5	50		7
GCKW-20	□25	1.5	50		16
GCKW-25	□25L	1.5		50	29

Electric Actuator 3-Finger Gripper Type

GCKW-16

□20 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GCKW - 16 G H1 04 N C N - F R01

❶Size

16	16

❷Connected Controller*1

G	ECMG/ECG-B

❸Screw Lead

H1	1.5 mm

❹Stroke

04	4 mm (2 mm one side)

❺Rubber Cover

N	None

❻Encoder

C	Incremental Encoder

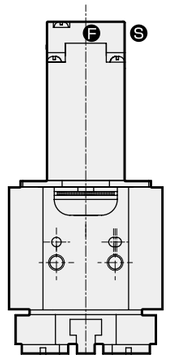
❼Connector Outlet Direction *2

F	Front
S	Side

❽Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

[Figure 1]



Connector Outlet Direction Diagram

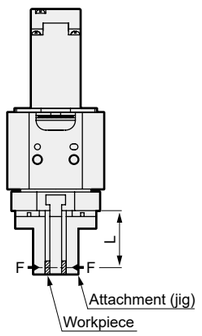
*1 For controllers, please refer to P. 529.
*2 Please refer to Figure 1.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

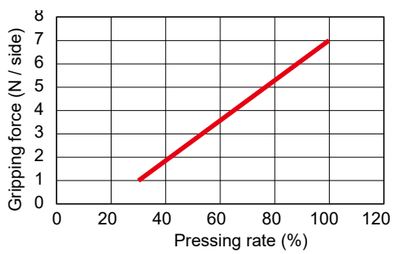
Specifications

Connected Controller		ECMG, ECG-B
Motor		□20 Stepping Motor
Drive Method		Sliding screw
Stroke	mm	4 (one side 2)
Screw lead	mm	1.5
Max. Gripping Force	*1 N	7 (one side)
Opening/Closing Speed Range	mm/s	5 to 50 (one side)
Gripping Speed Range *1	mm/s	5 to 15 (one side)
Repeatability	*2 mm	±0.02
Repeat Positioning Accuracy *3	mm	±0.05 (one side)
Lost Motion	mm	0.3 or less (one side)
Insulation Resistance		10 MΩ, 500 VDC
Withstanding Voltage		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight g		250

*1 Gripping is performed by pushing motion. Performing a pushing operation in positioning mode may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.
*3 This is the variation in the stop position when repeatedly positioning to the same point.

Gripping Force and Pushing Rate

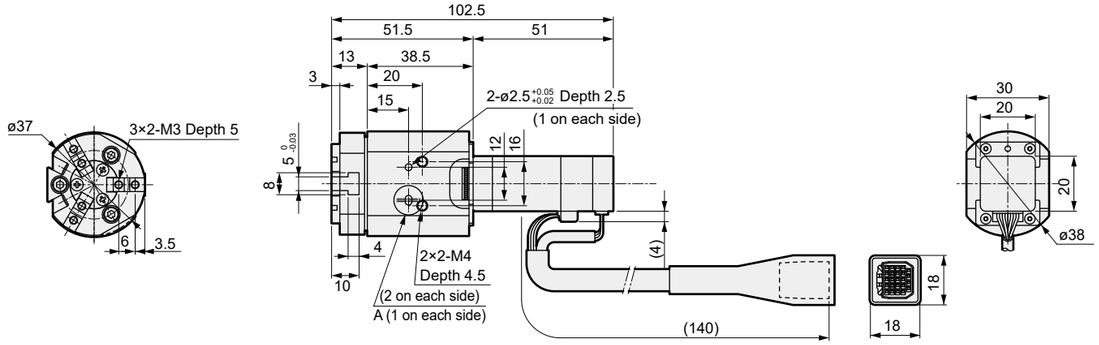


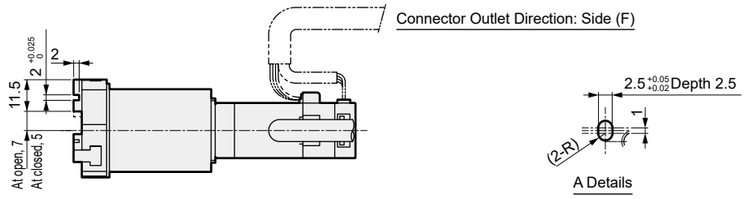


*1 The gripping force and pushing rate are for reference only. Even with the same pushing rate, errors will occur with the actual numbers due to differences in power supply voltage, individual differences in motors, and variations in mechanical efficiency.
*2 The speed during gripping operation is 15 mm/s. (L=20)

External Dimension Drawing

● GCKW-16





Electric Actuator 3-Finger Gripper Type

GCKW-20

□25 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GCKW - 20 G H1 04 N C N - F R01
(1) (2) (3) (4) (5) (6) (7) (8)

❶Size

20	20

❷Connected Controller *1

G	ECMG/ECG-B

❸Screw Lead

H1	1.5 mm

❹Stroke

04	4 mm (2 mm one side)

❺Rubber Cover

N	None

❻Encoder

C	Incremental Encoder

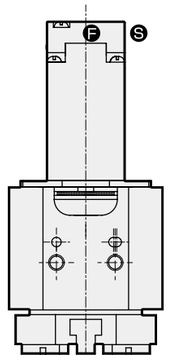
❼Connector Outlet Direction *2

F	Front
S	Side

❽Relay Cable *3

N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

[Figure 1]



Connector Outlet Direction Diagram

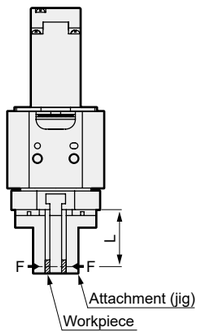
*1 For controllers, please refer to P. 529.
*2 Please refer to Figure 1.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

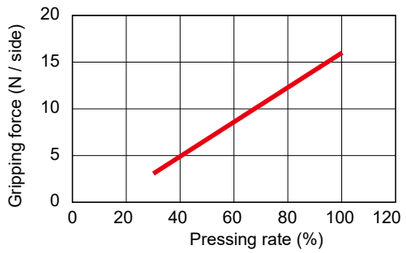
Specifications

Connected Controller		ECMG, ECG-B
Motor		□25 Stepping Motor
Drive Method		Sliding screw
Stroke	mm	4 (one side 2)
Screw lead	mm	1.5
Max. Gripping Force	*1 N	16 (one side)
Opening/Closing Speed Range	mm/s	5 to 50 (one side)
Gripping Speed Range	*1 mm/s	5 to 15 (one side)
Repeatability	*2 mm	±0.02
Repeat Positioning Accuracy	*3 mm	±0.05 (one side)
Lost Motion	mm	0.3 or less (one side)
Insulation Resistance		10 MΩ, 500 VDC
Withstanding Voltage		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight g		390

*1 Gripping is performed by pushing motion. Performing a pushing operation in positioning mode may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.
*3 This is the variation in the stop position when repeatedly positioning to the same point.

Gripping Force and Pushing Rate

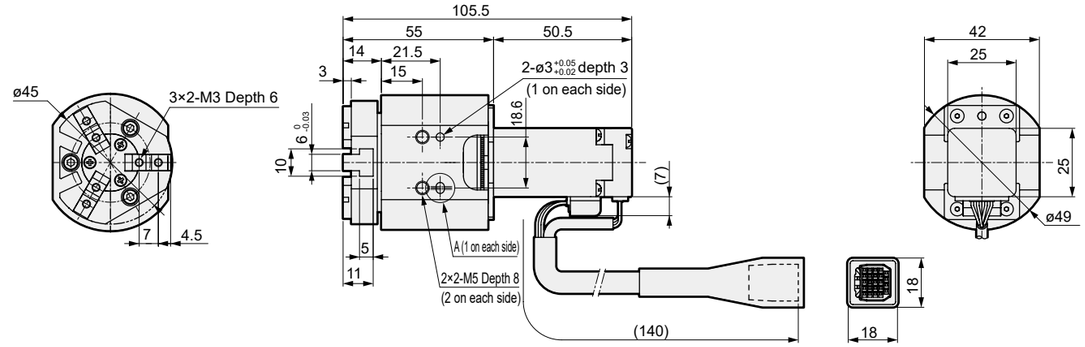




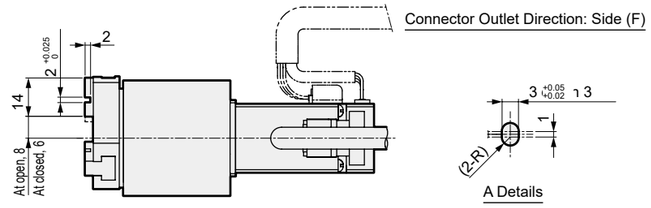
*1 The gripping force and pushing rate are for reference only. Even with the same pushing rate, errors will occur with the actual numbers due to differences in power supply voltage, individual differences in motors, and variations in mechanical efficiency.
*2 The speed during gripping operation is 15 mm/s. (L=20)

External Dimension Drawing

● GCKW-20



*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm
Connector Outlet Direction: Side (S)



Electric Actuator 3-Finger Gripper Type

GCKW-25

□25L Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

GCKW - 25 G H1 06 N C N - F R01

❶Size
25	25

❷Connected Controller *1
G	ECMG/ECG-B

❸Screw Lead
H1	1.5 mm

❹Stroke
06	6 mm (3 mm one side)

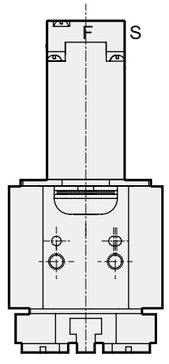
❺Rubber Cover
N	None

❻Encoder
C	Incremental Encoder

❼Connector Outlet Direction *2
F	Front
S	Side

❽Relay Cable *3
N00	None
R01	Flexible 1 m
R03	Flexible 3 m
R05	Flexible 5 m
R10	Flexible 10 m
S01	Fixed 1 m
S03	Fixed 3 m
S05	Fixed 5 m
S10	Fixed 10 m

[Figure 1]



Connector Outlet Direction Diagram

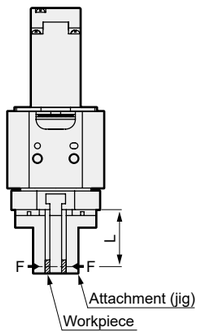
*1 For controllers, please refer to P. 529.
*2 Please refer to Figure 1.
*3 For the external dimension drawing of the relay cable, please refer to P. 576.

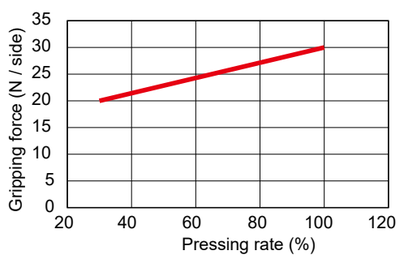
Specifications

Connected Controller		ECMG, ECG-B
Motor		□25L Stepping Motor
Drive Method		Sliding screw
Stroke	mm	6 (one side 3)
Screw lead	mm	1.5
Max. Gripping Force	*1 N	29 (one side)
Opening/Closing Speed Range	mm/s	5 to 50 (one side)
Gripping Speed Range	*1 mm/s	5 to 15 (one side)
Repeatability	*2 mm	±0.02
Repeat Positioning Accuracy	*3 mm	±0.05 (one side)
Lost Motion	mm	0.3 or less (one side)
Insulation Resistance		10 MΩ, 500 VDC
Withstanding Voltage		500 VAC for 1 minute
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Protection Structure		IP40
Weight g		580

*1 Gripping is performed by pushing motion. Performing a pushing operation in positioning mode may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.
*3 This is the variation in the stop position when repeatedly positioning to the same point.

Gripping Force and Pushing Rate

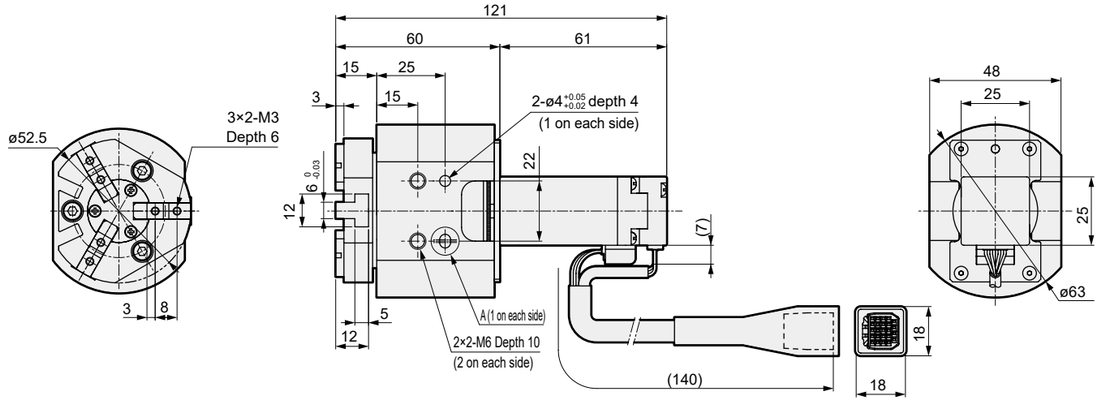




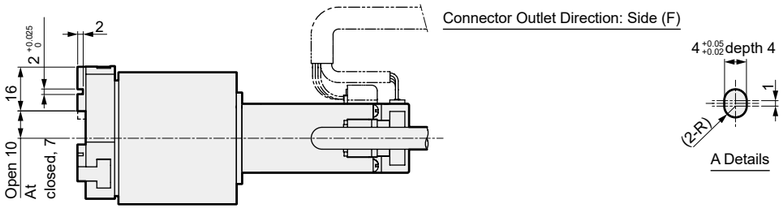
*1 The gripping force and pushing rate are for reference only. Even with the same pushing rate, errors will occur with the actual numbers due to differences in power supply voltage, individual differences in motors, and variations in mechanical efficiency.
*2 The speed during gripping operation is 15 mm/s. (L=20)

External Dimension Drawing

● GCKW-25



*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm
Connector Outlet Direction: Side (S)



STEP1 Calculation of Required Gripping Force

To transport a workpiece (weight WL), a gripping force FW that satisfies the following formula is required.

$$F_W > \frac{W_L \times g \times K}{n}$$

FW: Required gripping force [N]
n: Number of attachments = 3
W_L: Workpiece weight [kg]
g: Gravitational acceleration = 9.8 [m/s²]
K: Transport coefficient
5 [Holding only]
10 [Normal transport]
20 [Rapid acceleration transport]

About Conveyance Factor K

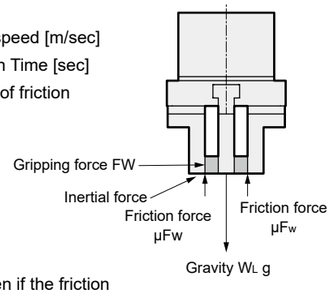
Calculation Example) When decelerating from a conveyance speed V = 0.75 m/s to stop in 0.1 seconds, with a friction coefficient μ of 0.1 between the workpiece and finger, it is as follows.

Determine the transport coefficient K from the force applied to the workpiece

V: Transport speed [m/sec]
t: Deceleration Time [sec]
μ: Coefficient of friction

- Inertial force = W_L (V/t)
- Gravity = $W_L g$
- Required gripping force $F_W > \frac{W_L(V/t)+W_L g}{n\mu} = \frac{W_L(V/t+g)}{n\mu} = \frac{17.3\ WL}{3\times0.1} = 57.7\ WL$

∴ The transport coefficient K at this time is, from the above formula $\frac{V/t+g}{\mu g} = \frac{0.75/0.1+9.8}{0.1\times9.8} \approx 20$

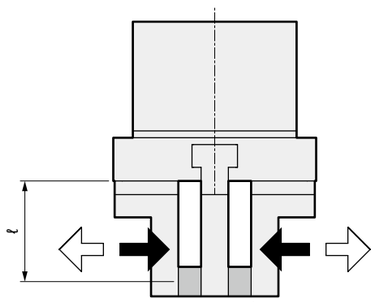


Note) The transport coefficient K needs to allow a margin for impacts during transport, etc. Even if the friction coefficient μ is higher than μ=0.1, for safety, please set the transport coefficient K to 10 to 20 or more.

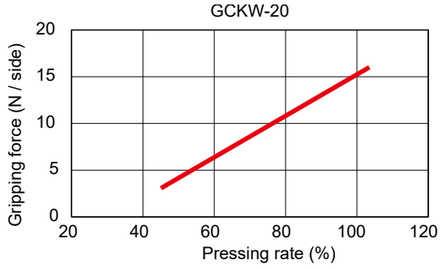
STEP2 Provisional selection of model from gripping force graph

Confirm the conditions on the right and provisionally select a model from the gripping force graph. The gripping force changes depending on the gripping point distance ℓ and the current limit value. Please confirm that sufficient gripping force can be obtained under your conditions of use from the graph.

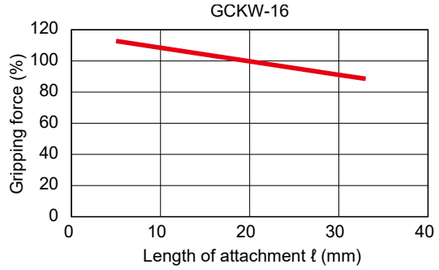
Gripping Direction



GCKW-20

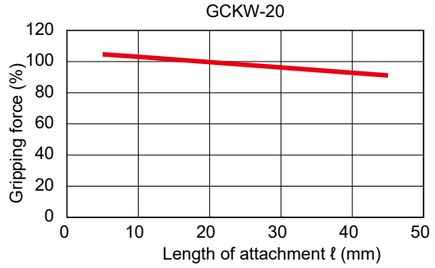


GCKW-16



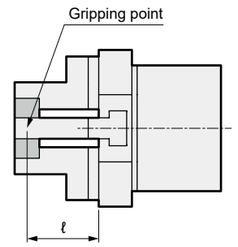
Gripping force and gripping point distance

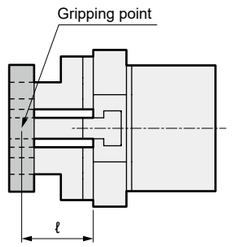
GCKW-20



GCKW-25

STEP3 Confirmation of Attachment Shape





● Please use attachments that are as light and short as possible.
If they are long and heavy, the inertial force during opening and closing will be large, which may cause play in the fingers or accelerate wear on the finger sliding parts, adversely affecting the service life.

● Even if the attachment shape is within the performance data, making it as small as possible will allow the product to be used for a long time. Also, if ℓ is long, there is a risk of gripping errors, dropping during transport, etc., due to unexpected vibrations.

● The weight of the attachments affects the service life, so please keep it below the following.
W < 1/4H (1 piece) W: W < 1/4H (1 piece) W: Weight of attachment
H: Product Weight-Finger Gripper

To Use This Product Safely

Be sure to read this before use.

For general information on electric actuators, please see Intro 17.

Individual Precautions: Electric Actuator G Series

During Design and Selection

1. Common

Danger

■ Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■ Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■ When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■ Use within the product's specific specification range.

■ Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■ In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■ Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■ The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ If using the actuator in an installation other than horizontal, select the one with a brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■ The brake cannot completely hold the actuator in all cases. When performing maintenance on applications that move the slider with an unbalanced load, or when stopping the machine for a long time, if safety needs to be ensured, be sure to bring it to a balanced state or provide a mechanical locking mechanism.

■ When using the actuator in a vertical installation, position the motor as high as possible.
If the motor is on the lower side, there is no problem in normal operation, but if it is stopped for a long period of time, the grease may separate and flow into the motor, which may cause a malfunction in rare cases.

■ Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C (10°C to 40°C for EBS-G and EBR-G), Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■ Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Do not use in places with impact or vibration.

■ Do not apply a load to the product that exceeds the allowable value in the selection data.

■ If there is a risk of danger to the human body, please install a protective cover.
If the drive part of the actuator may pose a danger to the human body, please install a protective cover. Please make the structure such that it is not possible to enter the drive range of the actuator or for the human body to directly touch that area.

■ Take necessary measures in advance so that this product does not adversely affect people or things if it malfunctions.

Caution

■ Please use within a range where the moving table and rod, fingers do not collide at the stroke end.

■ The product is manufactured in accordance with various standards. Never disassemble or modify.

■ Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■ Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■ Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
[In case of ECG series]
(□35...2.4 A/unit, □42...2.7 A/unit, □56...4.0 A/unit)

■ Fixed cables cannot be used for applications involving repeated bending, so please fix them so that they do not move easily. For use in locations involving repeated bending, please use a flexible cable.

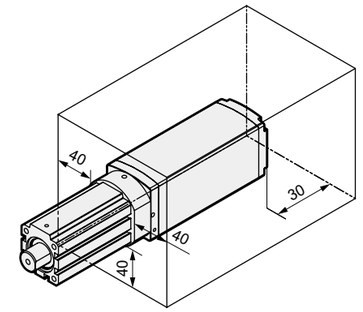
■ Please use the fixed/flexible cable with a bending radius of 51 mm or more. (For GCKW Series, bending radius 63mm or more)
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ Please use a cable of 10 m or less to connect to the IF connector.

■ When the power is turned on, to recognize the home position, if there is an external stopper or holding mechanism (brake, etc.), there is a possibility that an unintended position will be recognized as the home position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ When using GSSD2, GSTK, GSTG Series, do not apply a magnetic field with a magnetic flux density of 0.7 mT or more to the product surface of the motor section.
This can cause damage to the product or malfunction.

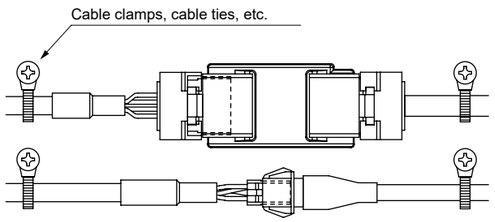
■ When using multiple GSSD2, GSTK, GSTG series units, please install them with the motor parts separated by the distance shown in the figure below or more.
Installation at close intervals can cause malfunction.



■ When transporting or installing, do not hold the movable parts or cable parts of the product.
This can cause injury or disconnection.

■ Do not fix the cable coming out of the actuator in a taut state.
This may lead to damage to the internal parts of the actuator.

■ Do not move the cable coming out of the actuator. Please fix the cable part. In addition, please use the cable with a bending radius of 40 mm or more.

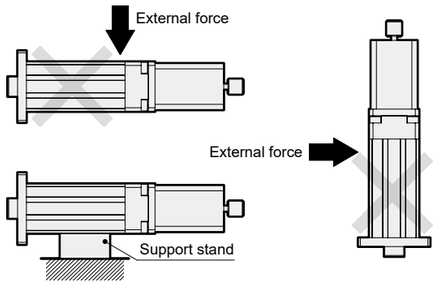


2. GSSD2 Series

Caution

■ In the case of flange (option) mounting, do not apply external force to the main body. External force may cause malfunction or component damage.
When mounting on the front in a horizontal installation, provide a support base. Depending on the operating conditions and the surrounding installation environment, vibrations may occur and cause damage to the actuator body. If external force is applied to the main body, use the mounting holes on the main body base to fix the main body. Avoid fixing only with the mounting holes on the flange part.

[In case of flange mounting]



■ 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 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)

3. GSTK Series

Caution

■ When a load directly connected to an actuator, etc., is stopped midway by a stopper actuator.
● The operating range is only for stopping pallets on a conveyor. When stopping a load directly connected to a cylinder, etc., with a stopper cylinder, the cylinder thrust becomes a lateral load, so please select an actuator so that it is within the range of allowable absorption energy and allowable lateral load.

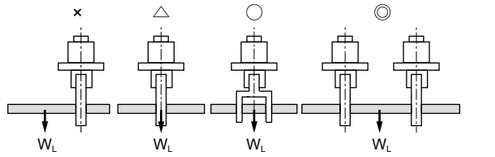
4. GCKW Series

Warning

■ The gripping force may decrease due to power outages, etc., so please perform a safety design that takes this into consideration. The gripping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device that will not cause injury to people or damage to machinery.

Caution

■ When gripping long or large workpieces, gripping the center of gravity is a prerequisite for stable gripping, but it is also necessary to stabilize it by increasing the size or using multiple units.

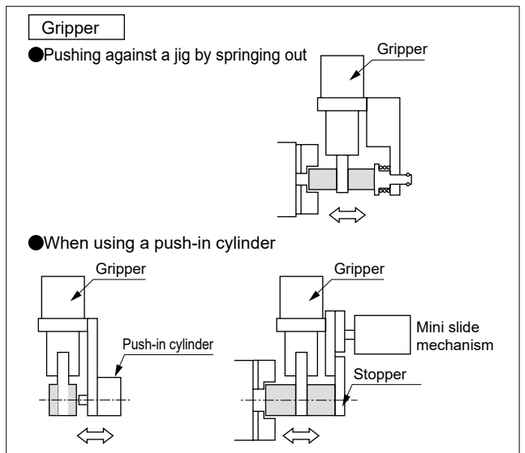


◎: Excellent, ○: Good, △: Conditional, X : Not Applicable

■ Select a model with sufficient gripping force for the workpiece mass.

■ Select a model with a sufficient opening/closing width for the size of the workpiece. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. Also, when opening from gripping operation, increase the stroke by the amount of backlash.

■ When inserting a workpiece directly into a jig with a gripper, please design with clearance in mind. The gripper may also be damaged.



Note) The workpiece is slid along the top of the attachment, so chuck life could drop markedly. Sufficient consideration must be given to the shape of the attachments.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

MEMO

GSSD2 Model Selection Checklist ->for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	GSSD2
Basic Specifications	Max. Stroke: mm, Screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Set Speed: mm/s
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Payload: kg
	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to rod center ( )
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Controller	ECMG / ECG
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

GSTK Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

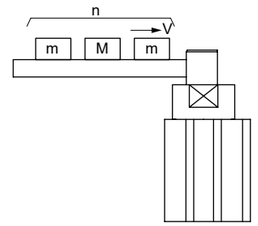
Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	GSTK
Basic Specifications	Max. Stroke: mm, Screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Set Speed: mm/s
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Transport weight: kg Transport speed: m/s Transfer Quantity: pcs. Material of transported item:
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Controller	ECMG / ECG
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP
Special Notes	

STK-Figure 1



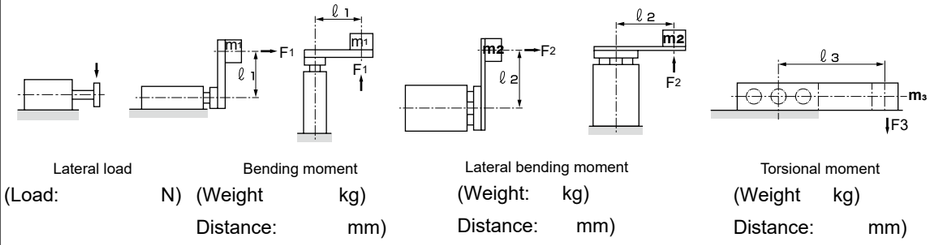
GSTG/GSTS/GSTL Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	GSTG/GSTS/GSTL	
Basic Specifications	Max. Stroke: mm, Screw lead: mm	
Operating Conditions	Moving stroke: mm, travel time: s	
	Set Speed: mm/s	
	Set acceleration/deceleration: mm/s^2 (set acceleration/deceleration time: s)	
	Repeatability: ± mm	
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other	
	Payload: kg External force on end plate:	
	 Lateral load (Load: N) Bending moment (Weight kg) Distance: mm) Lateral bending moment (Weight: kg) Distance: mm) Torsional moment (Weight kg) Distance: mm)	
	Stopper Use: None / Yes Transport weight: kg Transport speed: m/s Transfer Quantity: pcs.	Pushing load: None / Yes (N) During operation / When stopped Direction of force on plate center ( )
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %	
	Atmosphere:	
Controller	ECMG / ECG	
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP	
Special Notes		

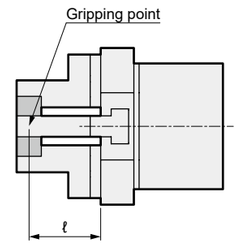
GCKW Series Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	GCKW	
Basic Specifications	Max. stroke (per side): mm	
Operating Conditions	Stroke (per side): mm, travel time s	
	Gripping force (one side) N	
	Opening/closing speed (per side) mm/s	
	Gripping speed (per side) mm/s	
	Repeatability: ± mm	
	Positioning Repeatability: ± mm	
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Other	
	Workpiece Weight: kg, workpiece material:	
	Attachment quantity: Attachment material: Attachment weight: kg	
	Attachment length: ℓ: mm	
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %	
	Atmosphere:	
Controller	ECMG / ECG	
Interface Specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP	
Special Notes		

Electric Actuator D Series

Screw drive type

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■ Guided Type	DSTG	439
■ Guided Type	DSTS	453
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Model Selection Checklist		522

Electric actuators specialized for positioning between two points

Easy

Making carbon-neutral components more accessible

Lineup		Size 20	Size 32	Size 50	Listed Page
Actuator	Rod DSSD2	●	●	●	417
	Stopper-type DSTK	●	●	●	427
	Guided DSTG	●	●	●	439
	Guided DSTS	●	●	●	453
	Guided DSTL	●	●	●	467
Application Controller	ESC4	●	●	●	611

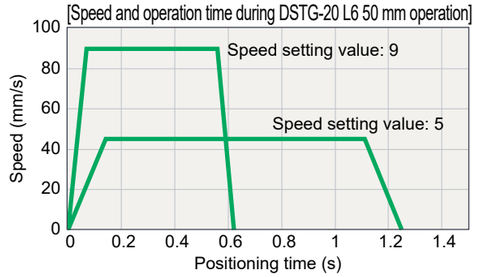
No special tools required. Easy on-site setting

Easy adjustment

The stop position is adjusted by turning the manual operation knob to the position where the cylinder switch reacts. The speed can be set with the controller's rotary switch.

Cylinder Switch

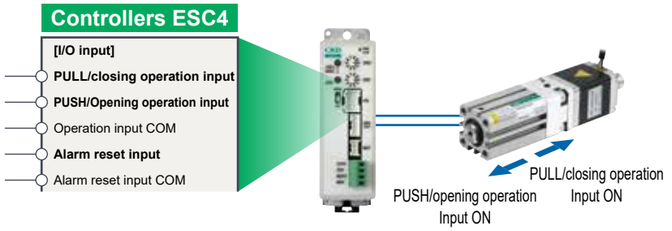
Rotary switch



Can operate with signals from 3 input points

Easy controls

No program is required.
Operates with simple wiring.

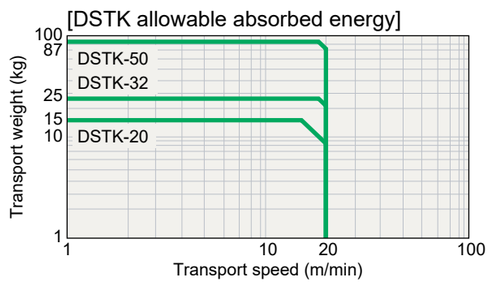


Inherits the high rigidity of pneumatic components

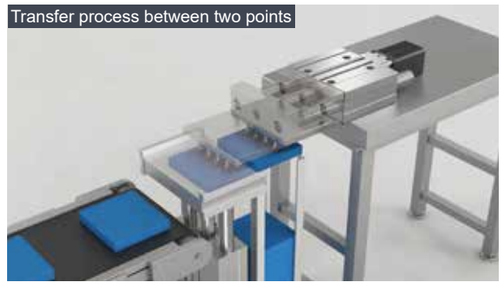
High rigidity | Space saving | Reduced design hours | Reduced number of parts | Long service life

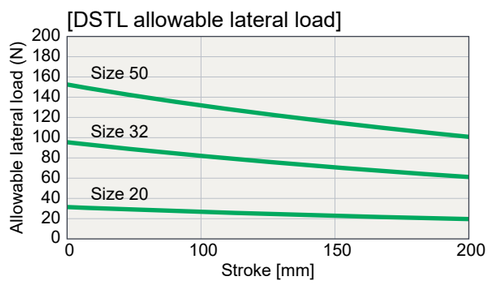
By using the same body as air equipment, we have achieved a high rigidity not found in conventional electric actuators.

For stopper applications



Transfer process between two points





Electric Actuator with Motor Specification

DSSD2

Rod Type

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Product Introduction 414
●Specifications, Model No. Notation, External Dimension Drawings
• DSSD2-20 418
• DSSD2-32 420
• DSSD2-50 422
●Model Selection 424
Precautions for Use 518
Model Selection Check Sheet 522

DSSD2 System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)				
			Horizontal	Vertical	20	25	50	75	100
DSSD2-20	□35	6	4.4	6.4	90		90		
		9	4.4	4.8	135		135		
DSSD2-32	□42	6	10	14		90			
		12	4	4.8		180			
DSSD2-50	□56	6	14.8	13.2		72			
		12	9.2	7.2		144			

Electric Actuator Rod Type

DSSD2-20

□35 Stepping Motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

DSSD2 - 20 S E - 06 020 T3PH R1 A 1 - ( ) - ( ) - ( )

❶Size

20	20

❷Connected Controller *1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
09	9 mm

❺Stroke

020	20 mm
050	50 mm
075	75 mm
100	100 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Included

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

❿Option

Blank	Rod end female thread
N	Rod end male thread

⓫Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓬Accessory *3 (when rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-20, Double-knuckle: SSD2-Y-20. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ESC4	
Motor		□35 Stepping Motor	
Drive Method		Sliding screw ø6	
Stroke	mm	20 to 100	
Screw lead	mm	6	9
Max. Payload kg *1 *2	Horizontal	4.4	4.4
	Vertical	6.4	4.8
Operating Speed Range *3	mm/s	15 to 90	22 to 135
Max. Acceleration/Deceleration *4	mm/s²	1312 (Setting: 9)	2938 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)	Screw Lead 9 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)
0	15	0	4.4	22	0	4.4
1	23	53	4.4	35	119	4.4
2	31	129	4.4	47	290	4.0
3	40	229	4.4	60	513	3.6
4	48	351	3.6	72	787	4.0
5	56	497	3.6	85	1114	3.2
6	65	666	2.8	97	1492	2.8
7	73	858	2.8	110	1922	2.4
8	81	1074	2	122	2404	2.8
9	90	1312	2	135	2938	3.2

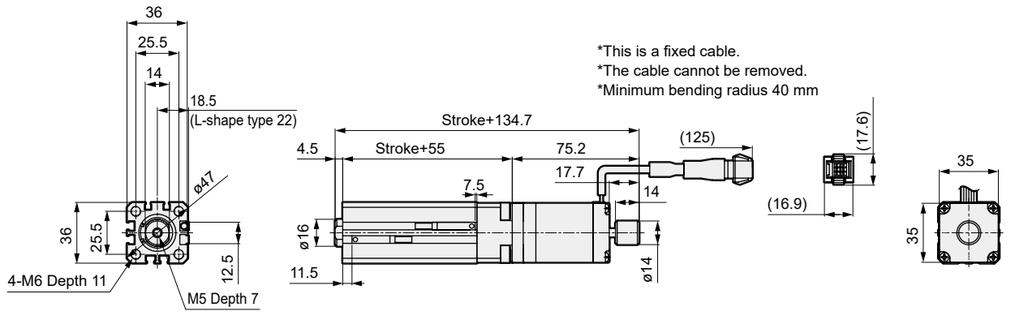
[Vertical Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)	Screw Lead 9 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)
0	15	0	6.4	22	0	4.8
1	23	53	6.4	35	119	4.8
2	31	129	6.4	47	290	4.8
3	40	229	6.4	60	513	4.8
4	48	351	6.4	72	787	4.4
5	56	497	6.4	85	1114	4.4
6	65	666	6.4	97	1492	4.0
7	73	858	4.8	110	1922	3.6
8	81	1074	4.8	122	2404	3.6
9	90	1312	4.8	135	2938	3.6

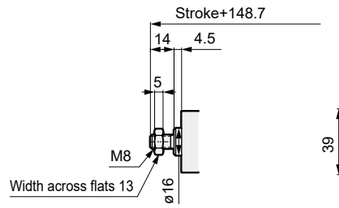
*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

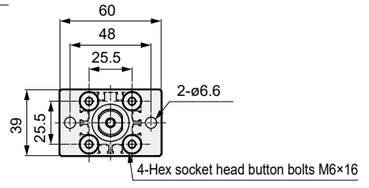
● DSSD2-20

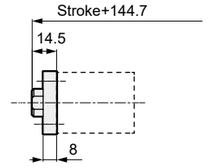


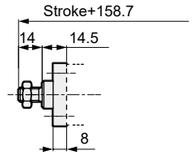
● Rod end male thread part



● Rod Side Flange (FA)







[Dimension Table by Stroke]

Stroke Code	020	050	075	100
Stroke (mm)	20	50	75	100
Weight (kg)	0.6	0.7	0.8	0.9

Electric Actuator Rod Type

DSSD2-32

□42 Stepping Motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

DSSD2 - 32 S E - 06 025 T3PH R1 A 1 - ( ) - ( ) - ( )

❶Size

32	32

❷Connected Controller *1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Included

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

❿Option

Blank	Rod end female thread
N	Rod end male thread

⓫Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓬Accessory *3 (when rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-32, Double-knuckle: SSD2-Y-32. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ESC4	
Motor		□42 Stepping Motor	
Drive Method		Sliding screw ø8	
Stroke	mm	25 to 100	
Screw lead	mm	6	12
Max. Payload kg *1 *2	Horizontal	10	4
	Vertical	14	4.8
Operating Speed Range *3	mm/s	15 to 90	30 to 180
Max. Acceleration/Deceleration *4	mm/s²	1312 (Setting: 9)	5250 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)	Screw Lead 12 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)
0	15	0	10	30	0	4.0
1	23	53	9.2	46	212	3.2
2	31	129	6	63	518	2.8
3	40	229	6.8	80	916	2.4
4	48	351	6.8	96	1407	2.4
5	56	497	6.8	113	1990	2.4
6	65	666	6.8	130	2666	2.4
7	73	858	6	146	3435	2.0
8	81	1074	4.4	163	4296	1.6
9	90	1312	5.2	180	5250	1.2

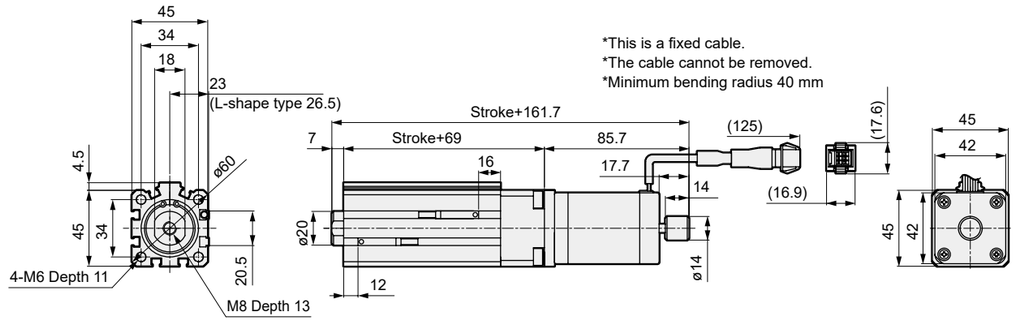
[Vertical Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)	Screw Lead 12 mm Speed (mm/s)	Acceleration/Deceleration mm/s²	Payload (kg)
0	15	0	14	30	0	4.8
1	23	53	13.2	46	212	4
2	31	129	12.4	63	518	4
3	40	229	11.6	80	916	4
4	48	351	11.6	96	1407	3.6
5	56	497	11.6	113	1990	3.2
6	65	666	10.8	130	2666	2.8
7	73	858	10.8	146	3435	2.4
8	81	1074	10	163	4296	2
9	90	1312	9.2	180	5250	1.6

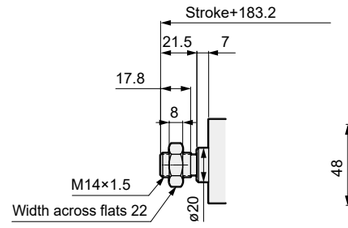
*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

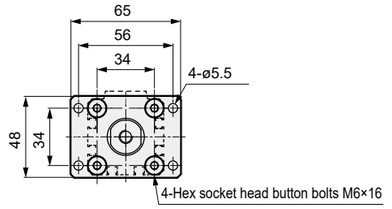
● DSSD2-32

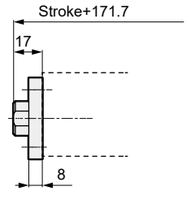


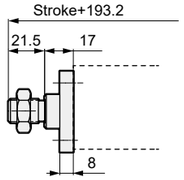
● Rod end male thread part



● Rod Side Flange (FA)







[Dimension Table by Stroke]

Stroke Code	025	050	075	100
Stroke (mm)	25	50	75	100
Weight (kg)	1.1	1.2	1.3	1.4

Electric Actuator Rod Type

DSSD2-50

□56 Stepping Motor

For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

DSSD2 - 50 ❶ | S ❷ | E ❸ - 06 ❹ | 025 ❺ | T3PH ❻ | R1 ❼ | A ❽ | 1 ❾ - ❿ - ⓫ - ⓬

❶Size

50	50

❷Connected Controller *1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Included

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

❿Option

Blank	Rod end female thread
N	Rod end male thread

⓫Mounting bracket

Blank	Without mounting bracket
FA	Rod Side Flange

⓬Accessory *3 (when rod end male thread N is selected)

Blank	No accessories
I	Single Knuckle
Y	Double-knuckle

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-50, Double-knuckle: SSD2-Y-50. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ESC4	
Motor		□56 Stepping Motor	
Drive Method		Sliding screw ø12	
Stroke	mm	25 to 100	
Screw lead	mm	6	12
Max. Payload kg *1 *2	Horizontal	14.8	9.2
	Vertical	13.2	7.2
Operating Speed Range *3 mm/s		15 to 72	30 to 144
Max. Acceleration/Deceleration *4 mm/s²		826 (Setting: 9)	3306 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/ Deceleration mm/s²	Payload (kg)	Screw Lead 12 mm Speed (mm/s)	Acceleration/ Deceleration mm/s²	Payload (kg)
0	15	0	14.8	30	0	4.4
1	21	38	11.6	42	153	6
2	27	90	10	55	360	9.2
3	34	155	10	68	620	9.2
4	40	233	8.4	80	934	8.8
5	46	325	8.4	93	1301	8.8
6	53	430	8.4	106	1722	8.4
7	59	549	6.8	118	2196	7.6
8	65	681	6.8	131	2724	6
9	72	826	6.8	144	3306	4.4

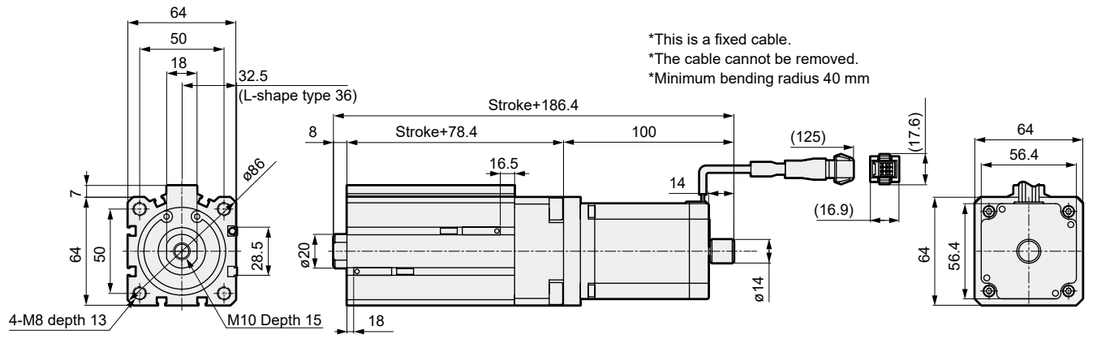
[Vertical Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Acceleration/ Deceleration mm/s²	Payload (kg)	Screw Lead 12 mm Speed (mm/s)	Acceleration/ Deceleration mm/s²	Payload (kg)
0	15	0	13.2	30	0	6.4
1	21	38	13.2	42	153	6.4
2	27	90	13.2	55	360	6.8
3	34	155	13.2	68	620	6.8
4	40	233	12.8	80	934	7.2
5	46	325	12.4	93	1301	6.8
6	53	430	12	106	1722	6.4
7	59	549	9.6	118	2196	6
8	65	681	7.6	131	2724	4.4
9	72	826	0	144	3306	2.4

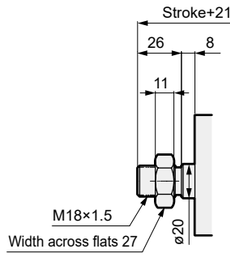
*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

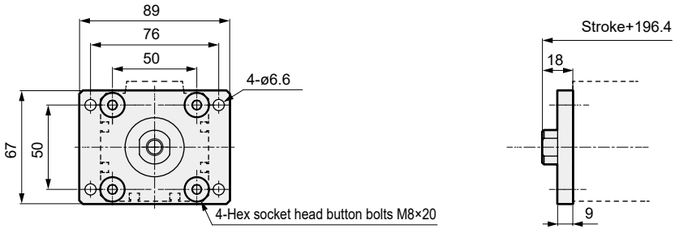
● DSSD2-50

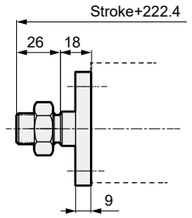


● Rod end male thread part



● Rod Side Flange (FA)





[Dimension Table by Stroke]

Stroke Code	025	050	075	100
Stroke (mm)	25	50	75	100
Weight (kg)	2.3	2.5	2.7	2.9

Model Selection

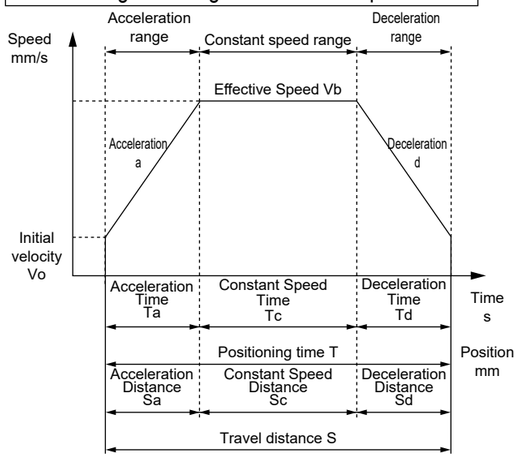
STEP1 Confirmation of Payload

Payload changes depending on mounting orientation, screw lead, and transport speed. Select the size and screw lead by referring to the system table (P. 417), the specification table for each model, and the payload table by speed setting.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Formula
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s^2	According to the table below (fixed value)
	Deceleration			
	Travel Distance	S	mm	*
Calculated Value	Reached Speed	Vmax	mm/s	$= (S \times a + V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	$= (Vb - V0)/a$
	Deceleration Time			
	Constant Speed Time	Tc	s	$= Sc / Vb$
	Acceleration Distance	Sa	mm	$= V0 \times Ta + (a \times Ta^2) / 2$
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	$= S - 2 \times Sa$
	Positioning Time	T	s	$= 2 \times Ta + Tc$

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

[Speed Setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

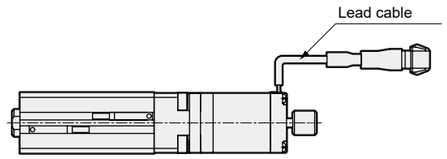
[Acceleration, Deceleration] (mm/s^2)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306

Special Order Product*

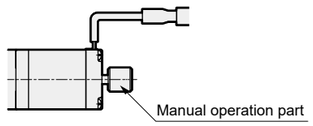
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

Electric Actuator with Motor Specification

DSTK

Stopper Type

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●Specifications, Model No. Notation, External Dimension Drawings
· DSTK-20 428
· DSTK-32 430
· DSTK-50 432
●Model Selection 434
⚠Precautions for Use 518
Model Selection Check Sheet 523

DSTK System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Thrust (N) Horizontal/ Vertical	Stroke (mm) and Max. Speed (mm/s) 10	20	30
DSTK-20	□35	6	62	90		
		9	47	135		
DSTK-32	□42	6	137	90		
		12	47	180		
DSTK-50	□56	6	129		72	
		12	70		144	

Electric Actuator Stopper Type

DSTK-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTK - M - 20 S E - 06 020 T3PH R1 A 1

❶Size

20	20

❷Connected Controller *1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
09	9 mm

❺Stroke

010	10 mm
020	20 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable*2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Included

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller	ESC4	
Motor	□35 Stepping Motor	
Drive Method	Sliding screw ø6	
Stroke mm	10, 20	
Screw lead mm	6	9
Max. Thrust *1 N	62	47
Operating Speed Range *2 mm/s	15 to 90	22 to 135
Max. Acceleration/ Deceleration *3 mm/s²	1312 (Setting: 9)	2938 (Setting: 9)
Insulation Resistance	10 MΩ, 500 VDC	
Withstanding Voltage	500 VAC for 1 minute	
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere	No corrosive gas, explosive gas, or dust	
Protection Structure	IP40	

*1 Thrust varies depending on speed. For details, please refer to the speed and thrust table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and thrust table.
*4 Pushing operation is not supported.

Speed and Thrust

[Horizontal/Vertical Installation]

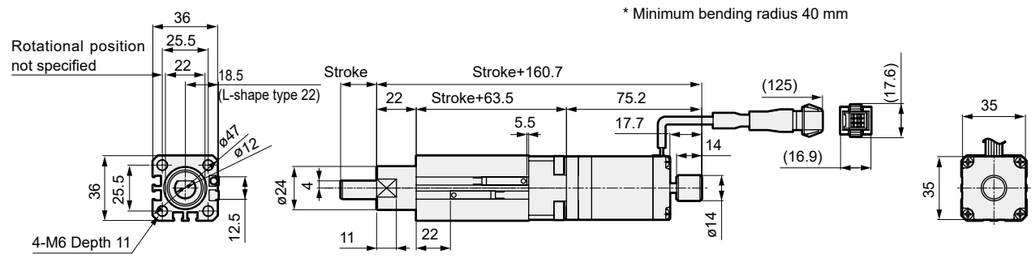
Switch Setting	Screw Lead					
	6 mm			9 mm		
	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)
0	15	0	62	22	0	47
1	23	53	62	35	119	47
2	31	129	62	47	290	47
3	40	229	62	60	513	47
4	48	351	62	72	787	43
5	56	497	62	85	1114	43
6	65	666	62	97	1492	39
7	73	858	47	110	1922	35
8	81	1074	47	122	2404	35
9	90	1312	47	135	2938	35

*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

● DSTK-20

*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm



[Dimension Table by Stroke]

Stroke Code	010	020
Stroke (mm)	10	20
Weight (kg)	0.6	0.6

Electric Actuator Stopper Type

DSTK-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTK - M - 32 S E - 06 020 T3PH R1 A 1

❶Size

32	32

❷Connected Controller*1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

010	10 mm
020	20 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable*2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller	ESC4	
Motor	□42 Stepping Motor	
Drive Method	Sliding screw ø8	
Stroke mm	10, 20	
Screw lead mm	6	12
Max. Thrust *1 N	129	47
Operating Speed Range *2 mm/s	15 to 90	30 to 180
Max. Acceleration/ Deceleration *3 mm/s²	1312 (Setting: 9)	5250 (Setting: 9)
Insulation Resistance	10 MΩ, 500 VDC	
Withstanding Voltage	500 VAC for 1 minute	
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere	No corrosive gas, explosive gas, or dust	
Protection Structure	IP40	

*1 Thrust varies depending on speed. For details, please refer to the speed and thrust table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and thrust table.
*4 Pushing operation is not supported.

Speed and Thrust

[Horizontal/Vertical Installation]

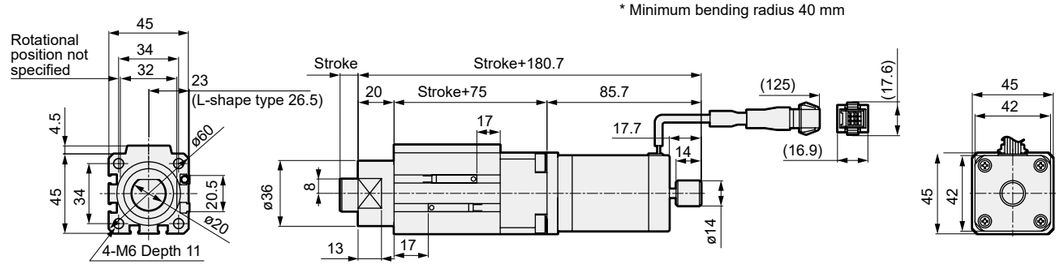
Switch Setting	Screw Lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)
0	15	0	129	30	0	47
1	23	53	129	46	212	39
2	31	129	121	63	518	39
3	40	229	113	80	916	39
4	48	351	113	96	1407	35
5	56	497	113	113	1990	31
6	65	666	105	130	2666	27
7	73	858	105	146	3435	23
8	81	1074	98	163	4296	19
9	90	1312	90	180	5250	15

*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

● DSTK-32

*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm



[Dimension Table by Stroke]

Stroke Code	010	020
Stroke (mm)	10	20
Weight (kg)	1.1	1.2

Electric Actuator Stopper Type

DSTK-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTK - M - 50 S E - 06 020 T3PH R1 A 1

❶Size

50	50

❷Connected Controller *1

S	ESC4

❸Motor Mounting Direction

E	Inline Mount

❹Screw Lead

06	6 mm
12	12 mm

❺Stroke

020	20 mm
030	30 mm

❻Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❼Relay Cable*2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller	ESC4	
Motor	□56 Stepping Motor	
Drive Method	Sliding screw ø12	
Stroke mm	20, 30	
Screw lead mm	6	12
Max. Thrust *1 N	129	70
Operating Speed Range *2 mm/s	15 to 72	30 to 144
Max. Acceleration/ Deceleration *3 mm/s²	826 (Setting: 9)	3306 (Setting: 9)
Insulation Resistance	10 MΩ, 500 VDC	
Withstanding Voltage	500 VAC for 1 minute	
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere	No corrosive gas, explosive gas, or dust	
Protection Structure	IP40	

*1 Thrust varies depending on speed. For details, please refer to the speed and thrust table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and thrust table.
*4 Pushing operation is not supported.

Speed and Thrust

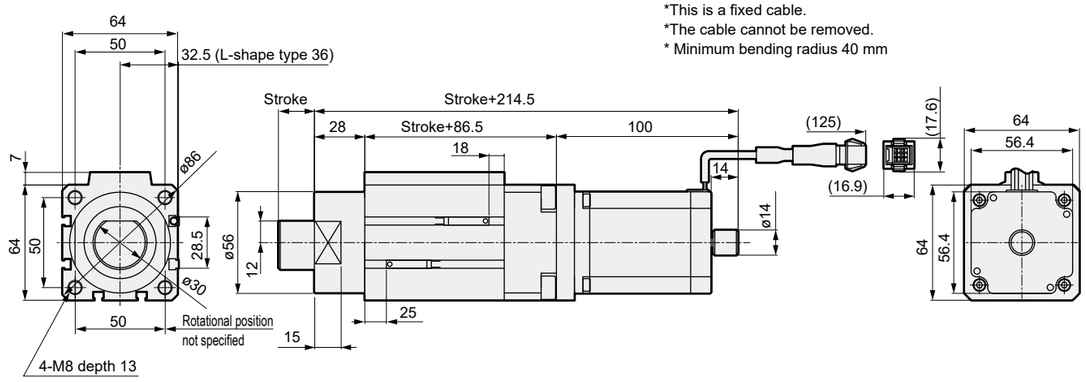
[Horizontal/Vertical Installation]

Switch Setting	Screw Lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)	Speed (mm/s)	Acceleration/ Deceleration (mm/s²)	Thrust (N)
0	15	0	129	30	0	62
1	21	38	129	42	153	62
2	27	90	129	55	360	66
3	34	155	129	68	620	66
4	40	233	125	80	934	70
5	46	325	121	93	1301	66
6	53	430	117	106	1722	62
7	59	549	94	118	2196	58
8	65	681	74	131	2724	43
9	72	826	0	144	3306	23

*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

External Dimension Drawing

● DSTK-50



*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm

[Dimension Table by Stroke]

Stroke Code	020	030
Stroke (mm)	20	30
Weight (kg)	2.8	2.9

Model Selection

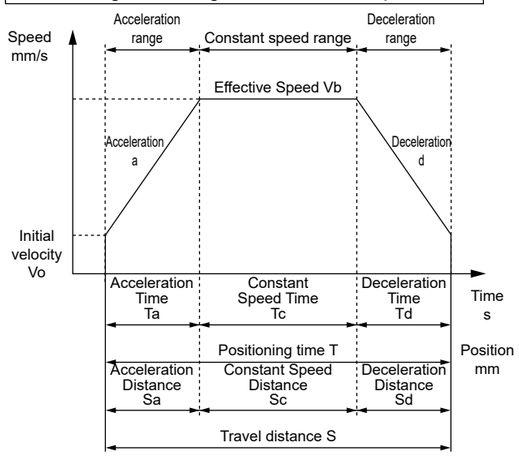
STEP1 Confirmation of thrust

Thrust varies with size, screw lead and operation speed. Refer to System Table (page 427), the specification table for each model and the thrust table by speed setting to select the size and screw lead.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Formula
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s²	According to the table below (fixed value)
	Deceleration			
	Travel Distance	S	mm	<
Calculated Value	Reached Speed	Vmax	mm/s	$= (S \times a + V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= (Vb-V0)/a
	Deceleration Time			
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= V0 \times Ta + (a \times Ta^2) / 2$
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	=S-2×Sa
	Positioning Time	T	s	=2×Ta+Tc

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

[Speed Setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

[Acceleration, Deceleration] (mm/s²)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306

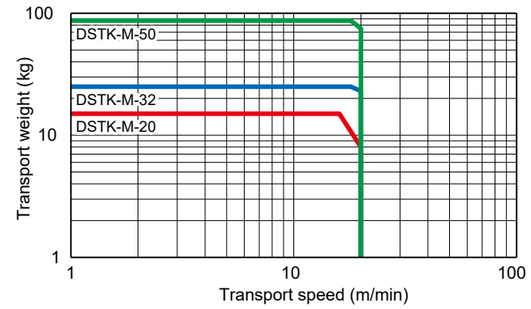
STEP3 Operating range

Select a model from the conveying weight (m) and conveying speed (V) so that the allowable absorption energy in the graph on the right is not exceeded.

(Example) Transport speed 15 m/min, Transport weight 20 kg

[How to Read the Graph]
To select the above specifications, find the intersection of 15 m/min on the horizontal axis and 20 kg on the vertical axis from graph Figure 1 on the right, and select DSTK-32, which is within the allowable absorption energy range.

Figure 1 Allowable absorbed energy



STEP4 Lateral Load and Thrust

The thrust during rod retraction varies depending on the magnitude of the lateral load applied to the rod tip, so check the required operating thrust.

1. Determine the lateral load (F) applied to the rod tip.

$F = 10 \cdot m \cdot n \cdot \mu_1$

F: Lateral load (N)

M: Transport weight: kg

n: Quantity of transported items

μ_1: Coefficient of friction between transport pallet and conveyor

2. Determine the required thrust (P) during rod retraction.

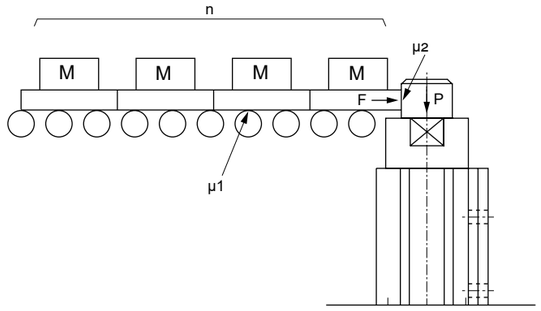
$P = F \cdot \mu_2$

P: Required thrust (N)

μ_2: Coefficient of friction between transported item and rod

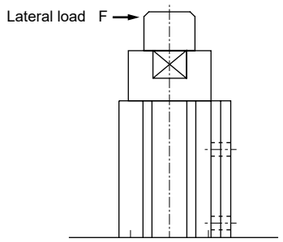
(Note) The coefficient of friction differs depending on the material of the transported item, so please refer to the coefficients in the table below.

Material of transported item	Steel	Aluminum	Urethane
μ_2	0.5	0.8	2.0



Allowable Lateral Load (N)

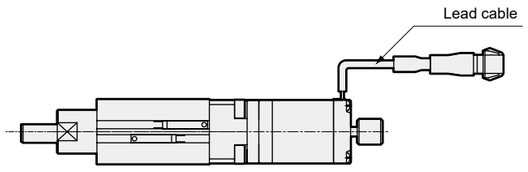
Size	Stroke (mm)		
	10	20	30
DSTK-20	106.5	93.2	-
DSTK-32	272.8	238.7	-
DSTK-50	-	582.8	525.8



Special Order Product*

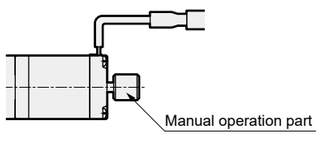
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

MEMO

Electric Actuator with Motor Specification

DSTG

Guided Type

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DSTG System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)				
			Horizontal	Vertical	20	25	50	75	100
DSTG-20	□35	6	4.4	6.4	90		90		
		9	4.4	4.8	135		135		
DSTG-32	□42	6	10	14		90			
		12	4	4.8		180			
DSTG-50	□56	6	14.8	13.2		72			
		12	9.2	7.2		144			

Electric Actuator Guided Type

DSTG-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTG - M - 20 S E - 06 020 T3PH R1 A 1

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Screw Lead

06	6 mm
09	9 mm

❻Stroke

020	20 mm
050	50 mm
075	75 mm
100	100 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□35 Stepping Motor	
Drive Method		Sliding screw ø6	
Stroke	mm	20 to 100	
Screw lead	mm	6	9
Max. Payload kg *1	Horizontal	4.4	4.4
	Vertical	6.4	4.8
Operating Speed Range *2	mm/s	15 to 90	22 to 135
Max. Acceleration/Deceleration *3	mm/s²	1312 (Setting: 9)	2938 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead					
	6 mm			9 mm		
	Speed (mm/s)	Payload (kg) Stroke (mm)		Speed (mm/s)	Payload (kg) Stroke (mm)	
		50 or less	100 or less		50 or less	100 or less
0	15	4.4	4.4	22	4.4	3.9
1	23	4.4	4.4	35	4.4	3.9
2	31	4.4	4.4	47	4.0	3.5
3	40	4.4	4.4	60	3.6	3.1
4	48	3.6	3.1	72	3.6	3.1
5	56	3.6	3.1	85	3.2	2.7
6	65	2.8	2.3	97	2.8	2.3
7	73	2.8	2.3	110	2.4	1.9
8	81	2	1.5	122	2.4	1.9
9	90	2	1.5	135	2	1.5

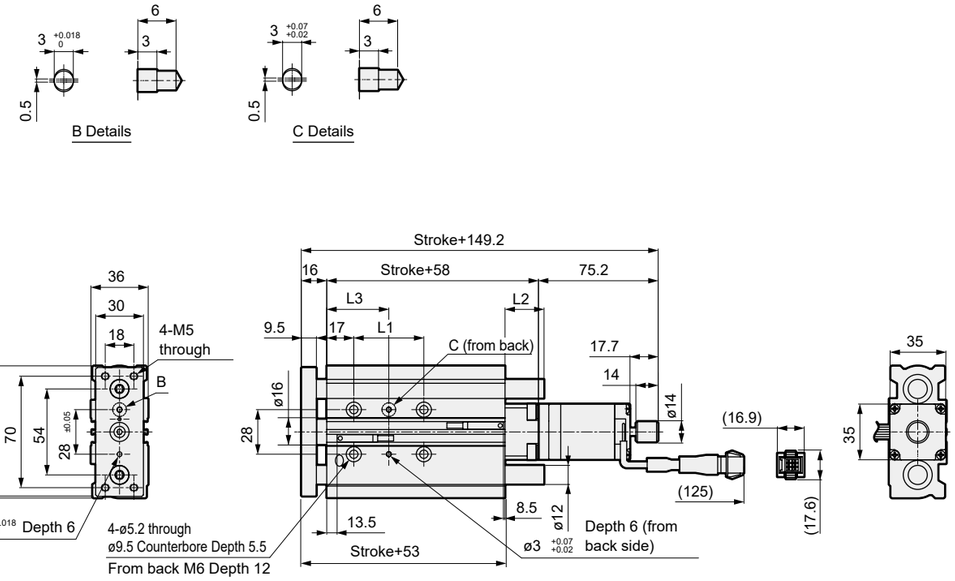
[Vertical Installation]

Switch Setting	Screw Lead					
	6 mm			9 mm		
	Speed (mm/s)	Payload (kg) Stroke (mm)		Speed (mm/s)	Payload (kg) Stroke (mm)	
		50 or less	100 or less		50 or less	100 or less
0	15	6.4	6.4	22	4.8	4.3
1	23	6.4	6.4	35	4.8	4.3
2	31	6.4	6.4	47	4.8	4.3
3	40	6.4	6.4	60	4.8	4.3
4	48	6.4	6.4	72	4.4	3.9
5	56	6.4	6.4	85	4.4	3.9
6	65	6.4	6.4	97	4	3.5
7	73	4.8	4.3	110	3.6	3.1
8	81	4.8	4.3	122	3.3	2.8
9	90	4.8	4.3	135	3	2.5

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTG-20



*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm

[Dimension Table by Stroke]

Stroke Code	020	050	075	100
Stroke (mm)	20	50	75	100
L1	24	44	44	44
L2	0	0	24.5	24.5
L3	29	39	39	39
Weight (kg)	1.1	1.4	1.6	1.8

Electric Actuator Guided Type

DSTG-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTG - M - 32 S E - 06 025 T3PH R1 A 1

❶Bearing type

M	Plain bearing

❷Size

32	32

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□42 Stepping Motor	
Drive Method		Sliding screw ø8	
Stroke mm		25 to 100	
Screw lead mm		6	12
Max. Payload kg *1	Horizontal	10	4
	Vertical	14	4.8
Operating Speed Range *2 mm/s		15 to 90	30 to 180
Max. Acceleration/Deceleration *3 mm/s²		1312 (Setting: 9)	5250 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	Screw Lead 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less
0	15	10.0	9.5	30	4.0	3.5
1	23	9.2	8.7	46	3.2	1.9
2	31	6.0	5.5	63	2.8	2.3
3	40	6.0	5.5	80	2.4	2.7
4	48	4.0	3.5	96	2.4	1.9
5	56	3.6	3.1	113	2.4	1.9
6	65	3.6	3.1	130	2.4	1.9
7	73	3.2	2.7	146	2.0	1.5
8	81	2.4	1.9	163	1.6	1.1
9	90	2.0	1.5	180	1.2	0.7

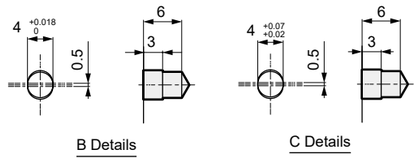
[Vertical Installation]

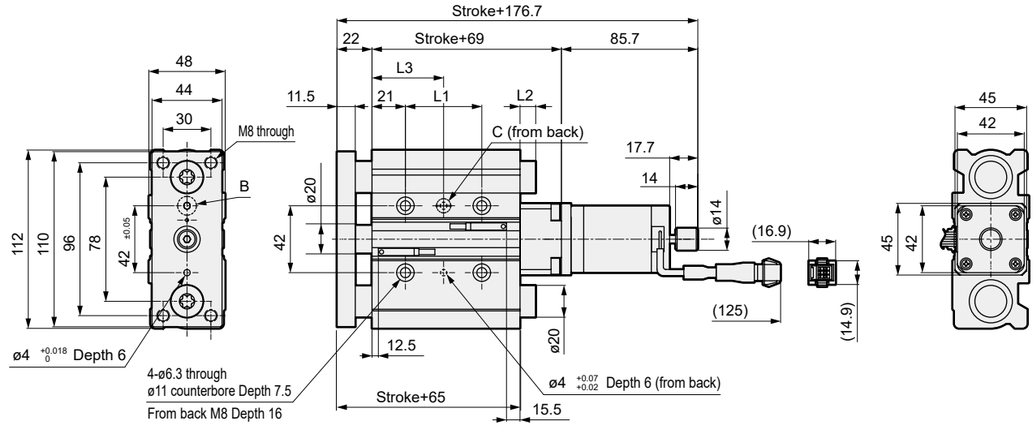
Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	Screw Lead 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less
0	15	14	13.5	30	4.8	4.3
1	23	13.2	12.7	46	4	3.5
2	31	12.4	11.9	63	4	3.5
3	40	11.6	11.1	80	4	3.5
4	48	11.6	11.1	96	3.6	3.1
5	56	11.6	11.1	113	3.2	2.7
6	65	10.8	10.3	130	2.8	2.3
7	73	10.8	10.3	146	2.4	1.9
8	81	10	9.5	163	2.0	1.5
9	90	9.2	8.7	180	1.6	1.1

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTG-32





*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm

[Dimension Table by Stroke]

Stroke Code	025	050	075	100
Stroke (mm)	25	50	75	100
L1	24	48	48	48
L2	13.5	13.5	34.5	34.5
L3	33	45	45	45
Weight (kg)	2.4	2.8	3.2	3.6

Electric Actuator Guided Type

DSTG-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTG - M - 50 S E - 06 020 T3PH R1 A 1

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Straight Mount

❺Screw Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□56 Stepping Motor	
Drive Method		Sliding screw ø12	
Stroke mm		25 to 100	
Screw lead mm		6	12
Max. Payload kg *1	Horizontal	14.8	9.2
	Vertical	13.2	7.2
Operating Speed Range *2 mm/s		15 to 72	30 to 144
Max. Acceleration/Deceleration *3 mm/s²		826 (Setting: 9)	3306 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead					
	6 mm			12 mm		
	Speed (mm/s)	Payload (kg) Stroke (mm)		Speed (mm/s)	Payload (kg) Stroke (mm)	
		50 or less	100 or less		50 or less	100 or less
0	15	14.8	12.8	30	9.2	9.2
1	21	11.6	9.6	42	9.2	9.2
2	27	10.0	8	55	9.2	9.2
3	34	8.4	6.4	68	9.2	7.2
4	40	8.4	6.4	80	8.8	6.8
5	46	8.4	6.4	93	8.8	6.8
6	53	8.4	6.4	106	8.4	6.4
7	59	6.8	4.8	118	7.6	5.6
8	65	6.8	4.8	131	6.0	4.0
9	72	6.8	4.8	144	4.4	2.4

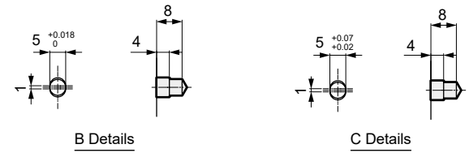
[Vertical Installation]

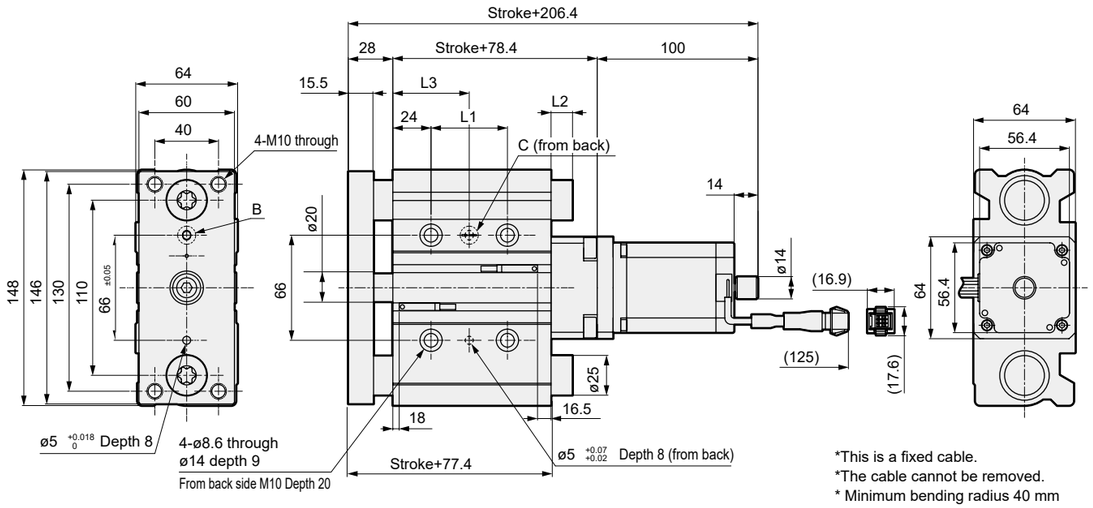
Switch Setting	Screw Lead					
	6 mm			12 mm		
	Speed (mm/s)	Payload (kg) Stroke (mm)		Speed (mm/s)	Payload (kg) Stroke (mm)	
		50 or less	100 or less		50 or less	100 or less
0	15	13.2	12.2	30	7.2	6.2
1	21	13.2	12.2	42	7.2	6.2
2	27	13.2	12.2	55	7.2	6.2
3	34	13.2	12.2	68	7.2	6.2
4	40	12.8	11.8	80	7.2	6.2
5	46	12.4	11.4	93	6.8	5.8
6	53	12	11	106	6.4	5.4
7	59	9.6	8.6	118	6	5
8	65	7.6	6.6	131	4.4	3.4
9	72	6	0	144	2.4	1.4

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTG-50





*This is a fixed cable.
*The cable cannot be removed.
* Minimum bending radius 40 mm

[Dimension Table by Stroke]

Stroke Code	025	050	075	100
Stroke (mm)	25	50	75	100
L1	24	48	48	48
L2	13.1	13.1	38.1	38.1
L3	36	48	48	48
Weight (kg)	4.7	5.3	6.1	6.7

Model Selection

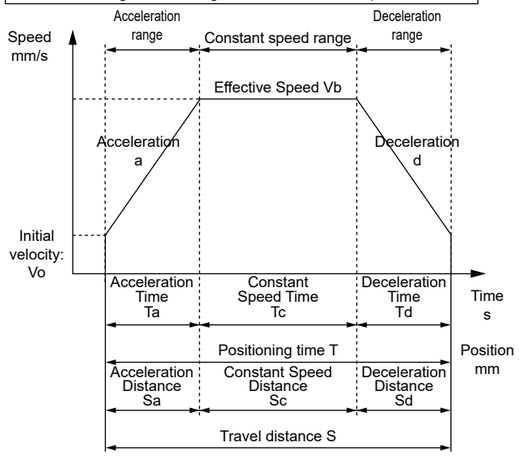
STEP1 Confirmation of Payload

Payload changes depending on mounting orientation, screw lead, and transport speed. Select the size and screw lead by referring to the system table (P. 439), the specification table for each model, and the payload table by speed setting.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Remarks
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s²	According to the table below (fixed value)
	Deceleration			
	Travel Distance	S	mm	*
Calculated Value	Reached Speed	Vmax	mm/s	$= (S×a+V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= (Vb-V0)/a
	Deceleration Time			
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	= V0×Ta+(a×Ta²) / 2
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	=S-2×Sa
	Positioning Time	T	s	=2×Ta+Tc

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

[Speed Setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

[Acceleration, Deceleration] (mm/s²)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

Resultant moment

$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

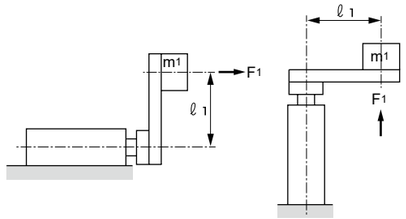
Static Allowable Load and Static Allowable Moment

Model No.	Stroke (mm)	Lateral Load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
DSTG-20	20	67	35.3	0.9	35.3
	50	46		0.62	
	75	60		0.8	
	100	51		0.69	
DSTG-32	25	223	171.5	4.35	171.5
	50	180		3.5	
	75	179		3.48	
	100	156		3.04	
DSTG-50	25	348	294	9.56	294
	50	296		7.86	
	75	292		8.02	
	100	257		7.07	

● Lateral load W (N)

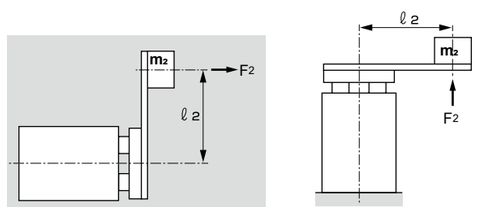
● Bending moment MP (N·m)

MP=F1×ℓ1=10×m1×G×ℓ1



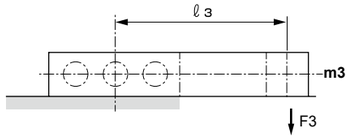
● Lateral bending moment MR (N·m)

MR=F2×ℓ2=10×m2×G×ℓ2



● Torsional moment MY (N·m)

MY= F3×ℓ3 =10×m3×ℓ3

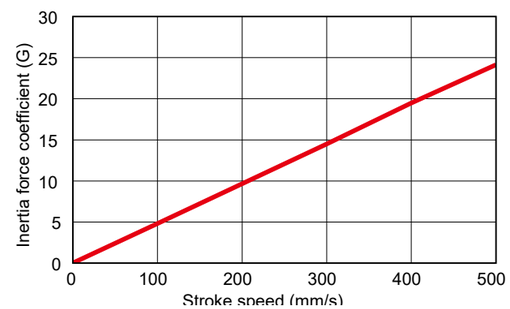


m1: **m2**: **m3**: } Load weight (kg)

ℓ1: **ℓ2**: **ℓ3**: } Eccentricity (m)

G: Inertial force coefficient

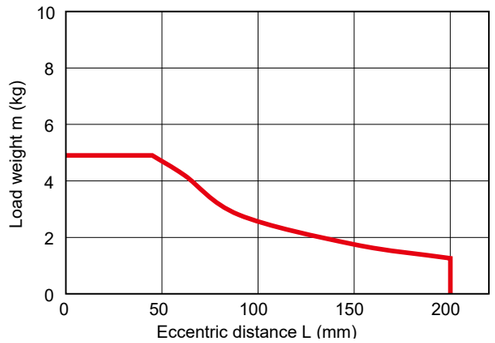
Figure 1 Trend of inertial force coefficient for guided type



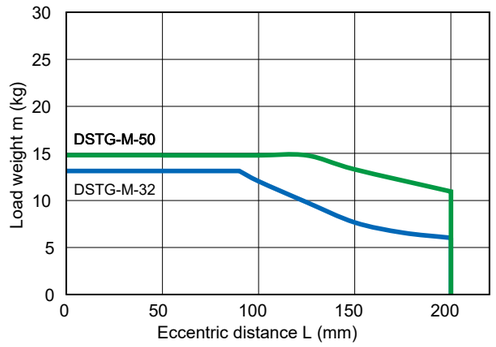
STEP4 Confirmation of Allowable Overhang Length

Confirm that the overhang length during operation is within the allowable overhang length range.

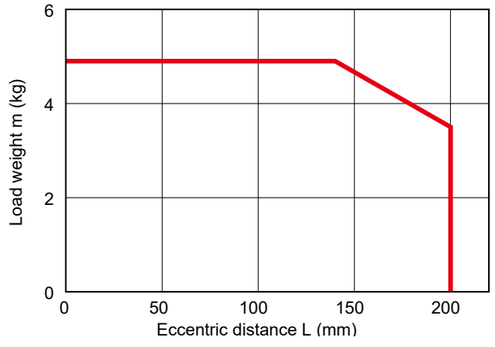
● DSTG-M-20
· Stroke 50 mm or less



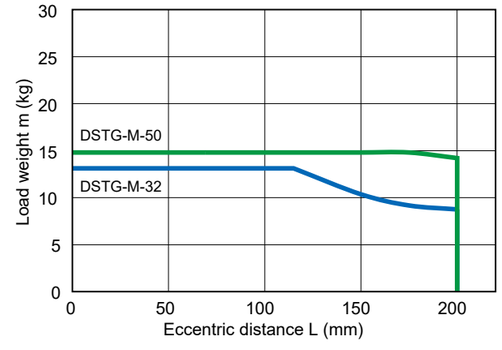
● DSTG-M-32, 50
· Stroke 50 mm or less



● DSTG-M-20
· Stroke exceeds 50 mm

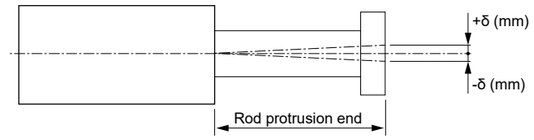


● DSTG-M-32, 50
· Stroke exceeds 50 mm

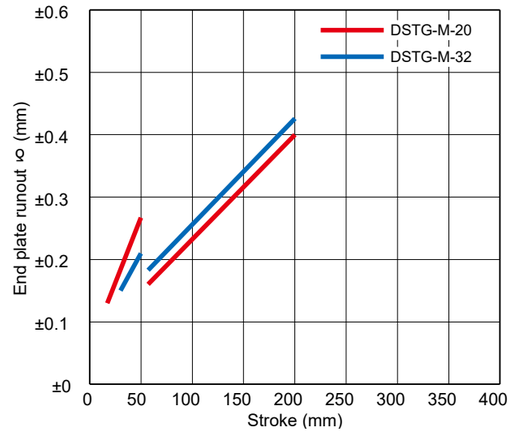


Runout accuracy

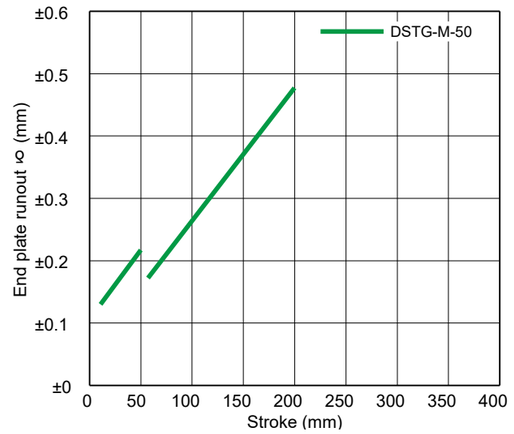
The amount of runout δ that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)



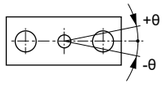
● DSTG-M-20, 32



● DSTG-M-50

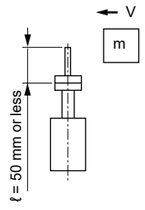


Non-rotation accuracy (Reference value)



Size	Non-rotation accuracy θ (degrees)
DSTG-20	±0.07
DSTG-32	±0.06
DSTG-50	±0.05

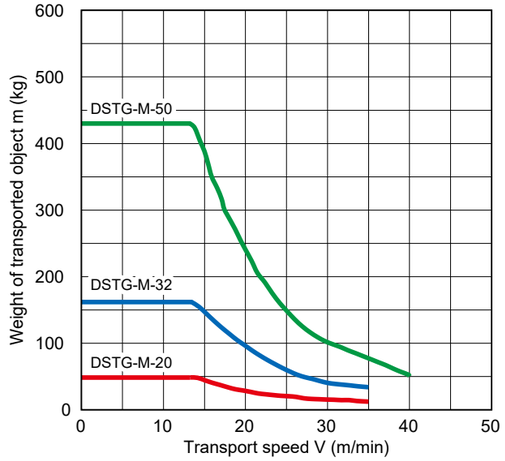
Operating range when used as a stopper



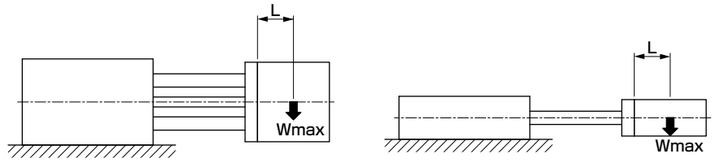
*1 When using as a stopper, please select a model with a stroke of 50 or less.
*2 The total length of the stopper part should be ℓ = 50 mm or less.
*3 When fixing the actuator body, ensure the bolt screwing depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*4 For calculation of required operating thrust, please refer to P. 436.
*5 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

Impact load

DSTG-M (Plain bearing)

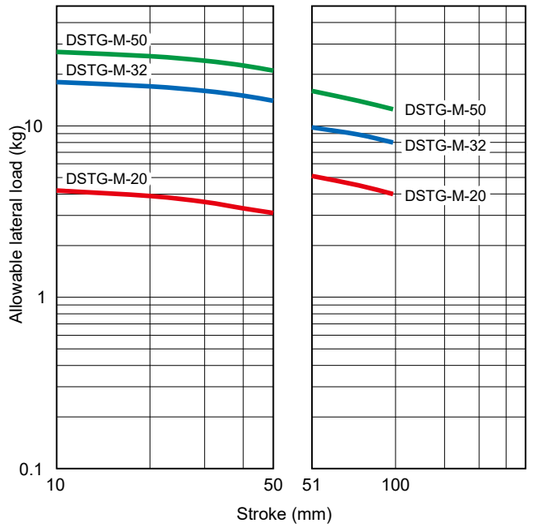


Allowable Lateral Load — Plain bearing

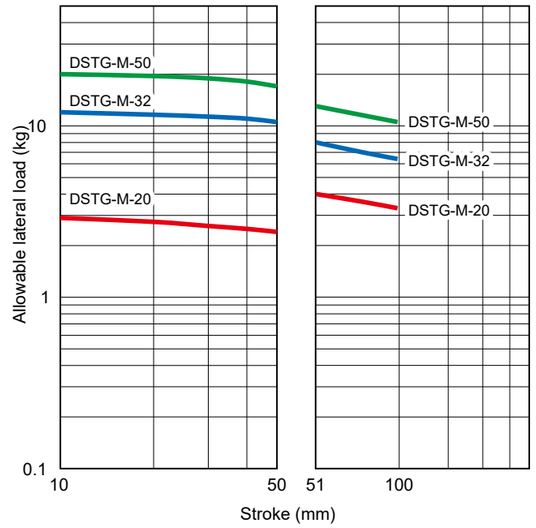


Wmax: Lateral load (kg)
L: Load's center of gravity position (mm)

● When L=50 mm



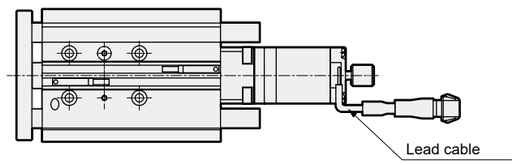
● When L=100 mm



Special Order Product*

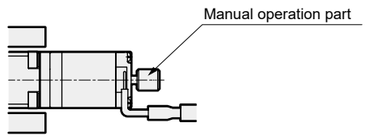
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

Electric Actuator with Motor Specification

DSTS

Guided Type

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●Specifications, Model No. Notation, External Dimension Drawings	
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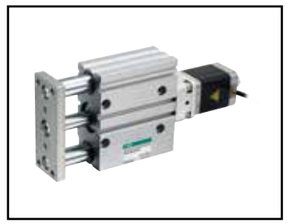
●Model Selection	460
⚠Precautions for Use	518
Model Selection Check Sheet	524

DSTS System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)	
			Horizontal	Vertical	25	50
DSTS-20	□35	6	4.4	6.4	90	
		9	4.4	4.8	135	
DSTS-32	□42	6	10	14	90	
		12	4	4.8	180	
DSTS-50	□56	6	14.8	13.2	72	
		12	9.2	7.2	144	



Electric Actuator Guided Type

DSTS-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTS - ❶M - ❷20 ❸S ❹E - ❺06 ❻025 ❼T3PH ❽R1 ❾A ❿1 - ⓫F

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
09	9 mm

❻Stroke

025	25 mm
050	50 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□35 Stepping Motor	
Drive Method		Sliding screw ø6	
Stroke mm		25, 50	
Screw lead mm		6	9
Max. Payload kg *1	Horizontal	4.4	4.4
	Vertical	6.4	4.8
Operating Speed Range *2 mm/s		15 to 90	22 to 135
Max. Acceleration/Deceleration *3 mm/s²		1312 (Setting: 9)	2938 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	6 mm Payload (kg) Stroke (mm) 50 or less	Screw Lead 9 mm Speed (mm/s)	9 mm Payload (kg) Stroke (mm) 50 or less
0	15	4.4	22	4.4
1	23	4.4	35	4.4
2	31	4.4	47	4.0
3	40	4.4	60	3.6
4	48	3.6	72	3.6
5	56	3.6	85	3.2
6	65	2.8	97	2.8
7	73	2.8	110	2.4
8	81	2	122	2.4
9	90	2	135	2

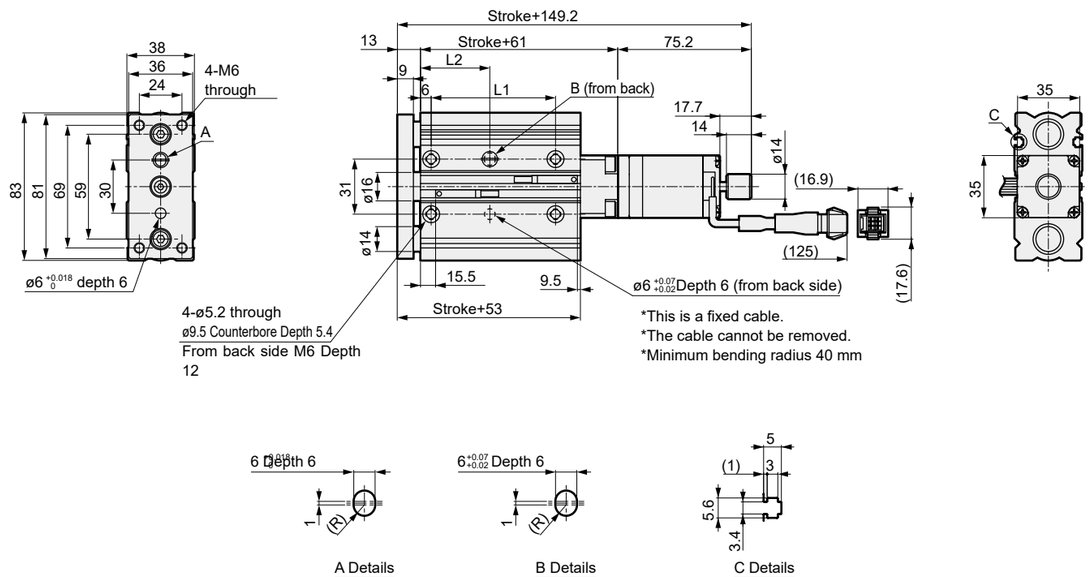
[Vertical Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	6 mm Payload (kg) Stroke (mm) 50 or less	Screw Lead 9 mm Speed (mm/s)	9 mm Payload (kg) Stroke (mm) 50 or less
0	15	6.4	22	4.8
1	23	6.4	35	4.8
2	31	6.4	47	4.8
3	40	6.4	60	4.8
4	48	6.4	72	4.4
5	56	6.4	85	4.4
6	65	6.4	97	4
7	73	4.8	110	3.6
8	81	4.8	122	3.3
9	90	4.8	135	3

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

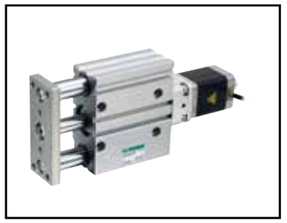
External Dimension Drawing

● DSTS-20



[Dimension Table by Stroke]

Stroke Code	025	050
Stroke (mm)	25	50
L1	45	70
L2	26.5	39
Weight (kg)	1.1	1.3



Electric Actuator Guided Type

DSTS-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTS - M - 32 S E - 06 025 T3PH R1 A 1 - F

❶ Bearing type

M	Plain bearing

❷ Size

32	32

❸ Connected Controller *1

S	ESC4

❹ Motor Mounting Direction

E	Inline Mount

❺ Lead

06	6 mm
12	12 mm

❻ Stroke

025	25 mm
050	50 mm

❼ Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽ Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾ Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿ IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫ Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□42 Stepping Motor	
Drive Method		Sliding screw ø8	
Stroke	mm	25, 50	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	10	4
	Vertical	14	4.8
Operating Speed Range *2	mm/s	15 to 90	30 to 180
Max. Acceleration/Deceleration *3	mm/s²	1312 (Setting: 9)	5250 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	6 mm Payload (kg) Stroke (mm) 50 or less	Screw Lead 12 mm Speed (mm/s)	12 mm Payload (kg) Stroke (mm) 50 or less
0	15	10.0	30	4.0
1	23	9.2	46	3.2
2	31	6.0	63	2.8
3	40	6.0	80	2.4
4	48	4.0	96	2.4
5	56	3.6	113	2.4
6	65	3.6	130	2.4
7	73	3.2	146	2.0
8	81	2.4	163	1.6
9	90	2.0	180	1.2

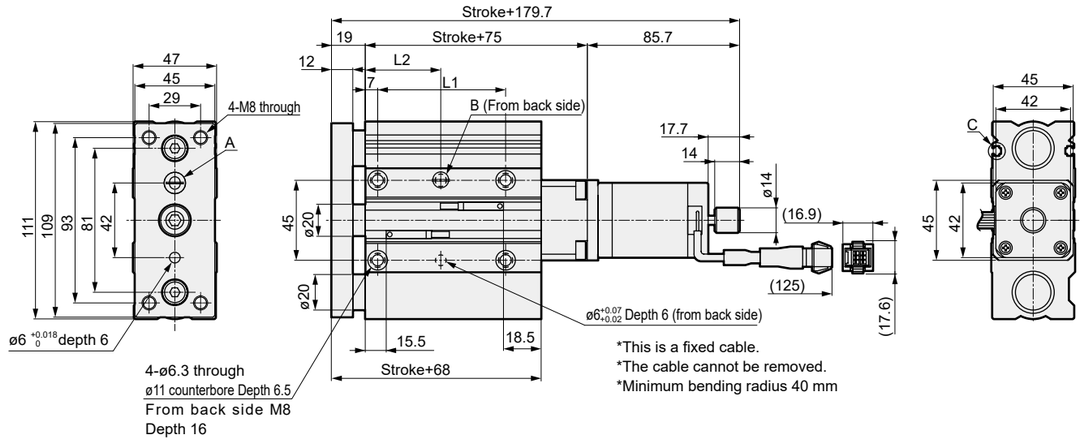
[Vertical Installation]

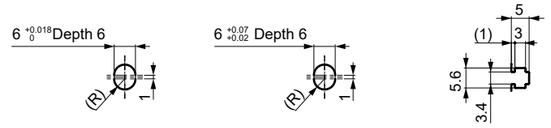
Switch Setting	Screw Lead 6 mm Speed (mm/s)	6 mm Payload (kg) Stroke (mm) 50 or less	Screw Lead 12 mm Speed (mm/s)	12 mm Payload (kg) Stroke (mm) 50 or less
0	15	14	30	4.8
1	23	13.2	46	4
2	31	12.4	63	4
3	40	11.6	80	4
4	48	11.6	96	3.6
5	56	11.6	113	3.2
6	65	10.8	130	2.8
7	73	10.8	146	2.4
8	81	10	163	2.0
9	90	9.2	180	1.6

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

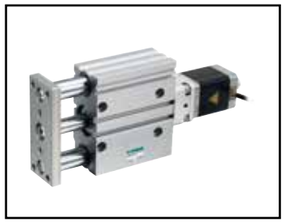
● DSTS-32





[Dimension Table by Stroke]

Stroke Code	025	050
Stroke (mm)	25	50
L1	47	72
L2	30	42.5
Weight (kg)	2.2	2.6



Electric Actuator Guided Type

DSTS-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTS - M - 50 S E - 06 025 T3PH R1 A 1 - F

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

025	25 mm
050	50 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□56 Stepping Motor	
Drive Method		Sliding screw ø12	
Stroke	mm	25, 50	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	14.8	9.2
	Vertical	13.2	7.2
Operating Speed Range *2	mm/s	15 to 72	30 to 144
Max. Acceleration/ Deceleration	*3 mm/s²	827 (Setting: 9)	3306 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	Screw Lead 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less
0	15	14.8	30	9.2
1	21	11.6	42	9.2
2	27	10.0	55	9.2
3	34	8.4	68	9.2
4	40	8.4	80	8.8
5	46	8.4	93	8.8
6	53	8.4	106	8.4
7	59	6.8	118	7.6
8	65	6.8	131	6.0
9	72	6.8	144	4.4

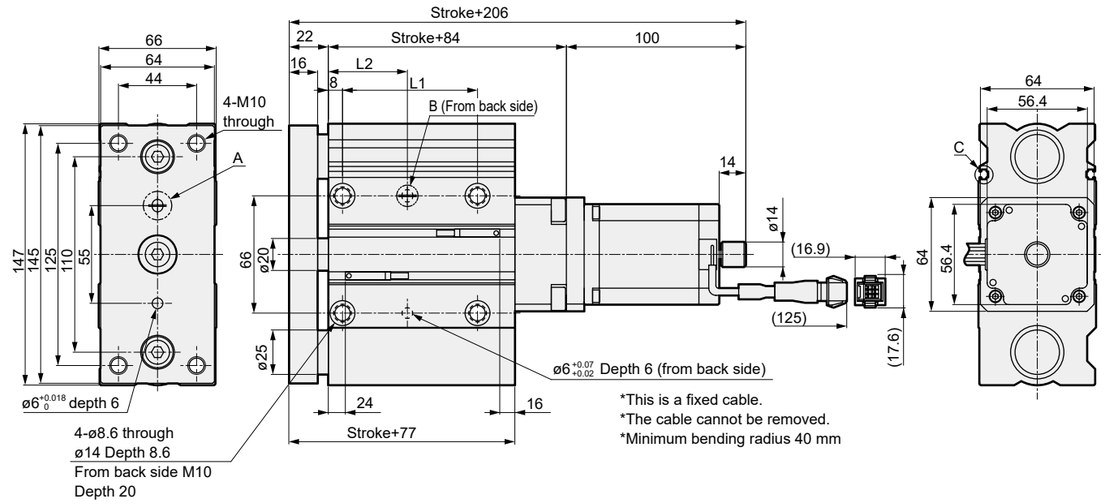
[Vertical Installation]

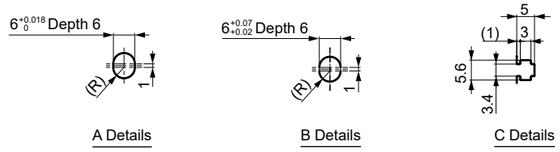
Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	Screw Lead 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less
0	15	13.2	30	7.2
1	21	13.2	42	7.2
2	27	13.2	55	7.2
3	34	13.2	68	7.2
4	40	12.8	80	7.2
5	46	12.4	93	6.8
6	53	12	106	6.4
7	59	9.6	118	6
8	65	7.6	131	4.4
9	72	6	144	2.4

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTS-50





[Dimension Table by Stroke]

Stroke Code	025	050
Stroke (mm)	25	50
L1	51	76
L2	32	44.5
Weight (kg)	4.2	4.8

Model Selection

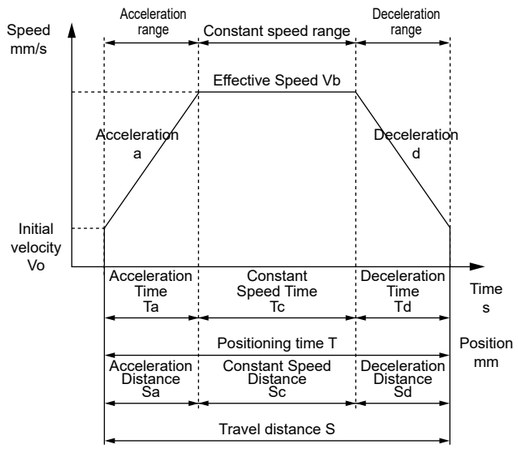
STEP1 Confirmation of Payload

Payload changes depending on mounting orientation, screw lead, and transport speed. Select the size and screw lead by referring to the system table (P. 453), the specification table for each model, and the payload table by speed setting.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Formula
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s²	According to the table below (fixed value)
	Deceleration			
	Travel Distance	S	mm	*
Calculated Value	Reached Speed	Vmax	mm/s	$= (S \times a + V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= (Vb-V0)/a
	Deceleration Time			
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= V0 \times Ta + (a \times Ta^2) / 2$
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	=S-2×Sa
	Positioning Time	T	s	=2×Ta+Tc

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

[Speed Setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

[Acceleration, Deceleration] (mm/s²)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

Resultant moment

$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

Static Allowable Load and Static Allowable Moment

Model No.	Stroke (mm)	Lateral Load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
DSTS-M-20	25	48	32.6	0.71	32.6
	50	35		0.52	
DSTS-M-32	25	141	107.4	2.86	107.4
	50	109		2.21	
DSTS-M-50	25	213	201.7	5.86	201.7
	50	170		4.68	

Calculate the allowable load when operating under load using the formula below.
Catalog allowable lateral load×0.9

● Lateral load W (N) [Vertical Installation]

$$\frac{m1 \times \ell 1 \times 10}{L} \leq W$$

Size	L
20	0.016+st
32	0.022+st
50	0.025+st

● Torsional moment MY (N·m)

MY= F3×ℓ3 =10×m3×ℓ3

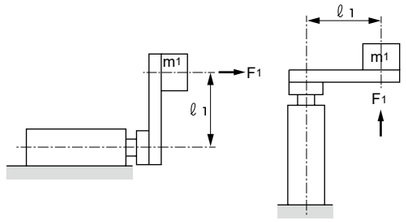
m1: **m2**: **m3**: } Load weight (kg)

ℓ1: **ℓ2**: **ℓ3**: } Eccentricity (m)

G: Inertial force coefficient

● Bending moment MP (N·m)

MP=F1×ℓ1=10×m1×G×ℓ1



● Lateral bending moment MR (N·m)

MR=F2×ℓ2=10×m2×G×ℓ2

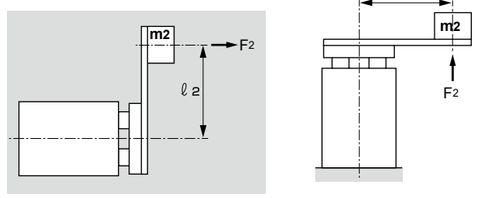
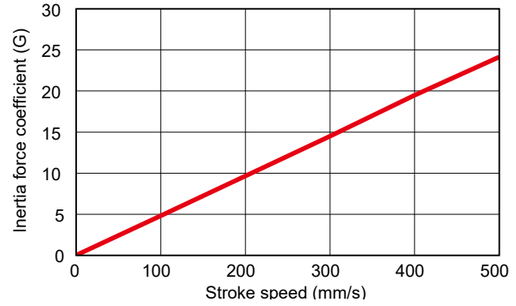


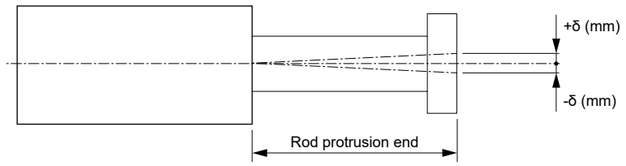
Figure 1 Trend of inertial force coefficient for guided type

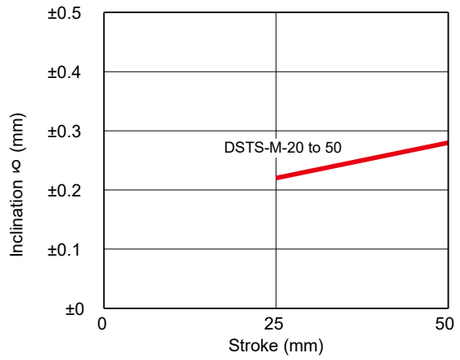


Model Selection

Runout accuracy

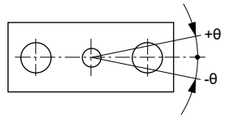
The amount of tilt that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)





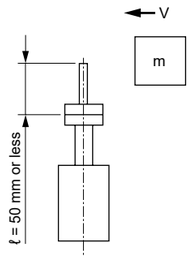
Non-rotation accuracy

(Reference value)



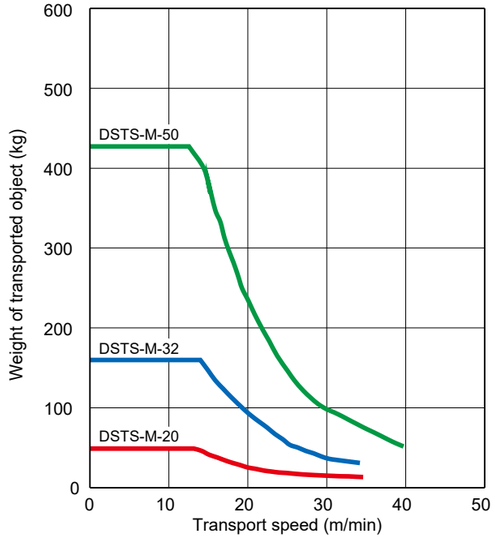
Size	Non-rotation accuracy θ (degrees)
DSTS-M-20	±0.10
DSTS-M-32	±0.08
DSTS-M-50	±0.07

Operating range when used as a stopper



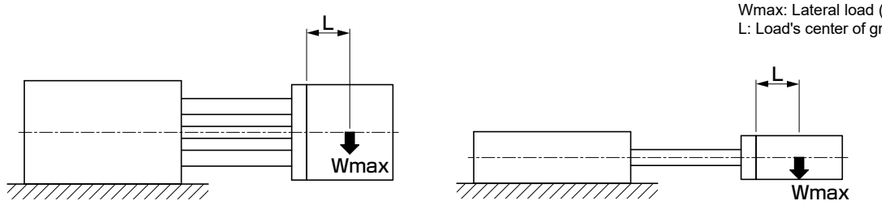
*1 The total length of the stopper part should be ℓ = 50 mm or less.
*2 When fixing the actuator, ensure the bolt screwing Depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*3 For calculation of required operating thrust, please refer to P. 436.
*4 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

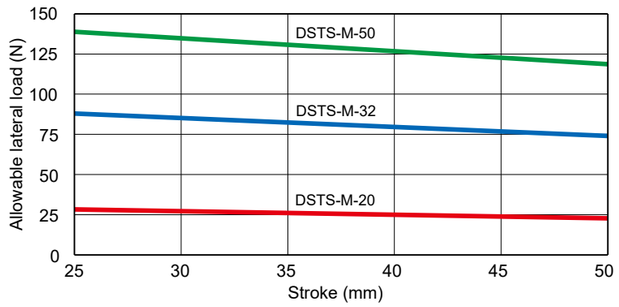
Impact load



Allowable Lateral Load　Plain bearing

Wmax: Lateral load (N)
L: Load's center of gravity position (mm)



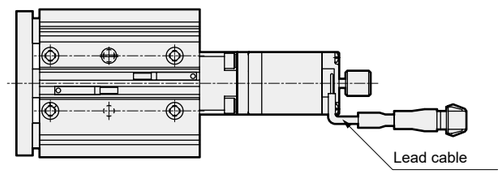


*1: Calculate the allowable lateral load when operating under load using the formula below.
Catalog allowable lateral load value×0.9
*2: When designing, please consider the safety factor according to the operating conditions.

Special Order Product*

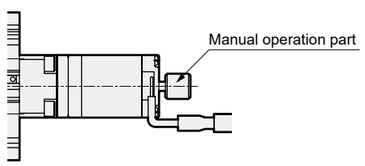
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

MEMO

Electric Actuator with Motor Specification

DSTL

Guided Type

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DSTL System Table

Actuator Model No.	Motor Size	Screw Lead (mm)	Max. Payload (kg)		Stroke (mm) and Max. Speed (mm/s)			
			Horizontal	Vertical	50	100	150	200
DSTL-20	□35	6	4.4	6.4	90			
		9	4.4	4.8	135			
DSTL-32	□42	6	10	14	90			
		12	4	4.8	180			
DSTL-50	□56	6	14.8	13.2	72			
		12	9.2	7.2	144			

Electric Actuator Guided Type

DSTL-20

□35 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTL - M - 20 S E - 06 050 T3PH R1 A 1 - F

❶Bearing type

M	Plain bearing

❷Size

20	20

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
09	9 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*3 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□35 Stepping Motor	
Drive Method		Sliding screw ø6	
Stroke	mm	50 to 200	
Screw lead	mm	6	9
Max. Payload kg *1	Horizontal	4.4	4.4
	Vertical	6.4	4.8
Operating Speed Range *2	mm/s	15 to 90	22 to 135
Max. Acceleration/Deceleration *3	mm/s²	1312 (Setting: 9)	2938 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	200 or less	Screw Lead 9 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	200 or less
0	15	4.4	4.4	22	4.4	3.9
1	23	4.4	4.4	35	4.4	3.9
2	31	4.4	4.4	47	4.0	3.5
3	40	4.4	4.4	60	3.6	3.1
4	48	3.6	3.1	72	3.6	3.1
5	56	3.6	3.1	85	3.2	2.7
6	65	2.8	2.3	97	2.8	2.3
7	73	2.8	2.3	110	2.4	1.9
8	81	2	1.5	122	2.4	1.9
9	90	2	1.5	135	2	1.5

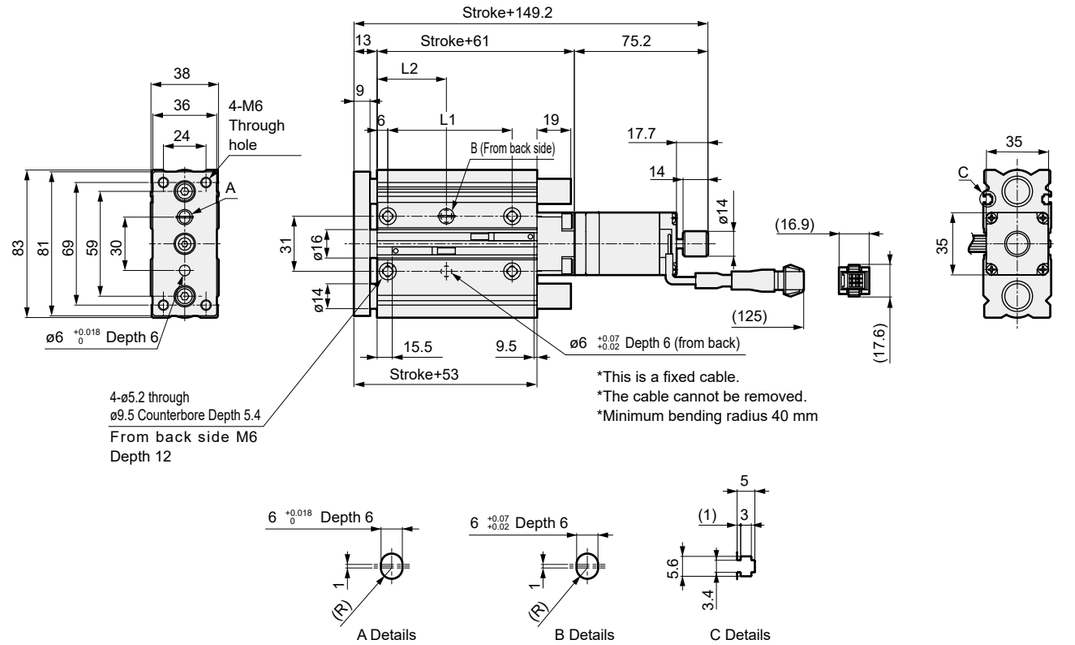
[Vertical Installation]

Switch Setting	Screw Lead 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	200 or less	Screw Lead 9 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	200 or less
0	15	6.4	6.4	22	4.8	4.3
1	23	6.4	6.4	35	4.8	4.3
2	31	6.4	6.4	47	4.8	4.3
3	40	6.4	6.4	60	4.8	4.3
4	48	6.4	6.4	72	4.4	3.9
5	56	6.4	6.4	85	4.4	3.9
6	65	6.4	6.4	97	4	3.5
7	73	4.8	4.3	110	3.6	3.1
8	81	4.8	4.3	122	3.3	2.8
9	90	4.8	4.3	135	3	2.5

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTL-20



[Dimension Table by Stroke]

Stroke Code	050	100	150	200
Stroke (mm)	50	100	150	200
L1	70	120	170	220
L2	39	64	89	114
Weight (kg)	1.4	1.9	2.3	2.8

Electric Actuator Guided Type

DSTL-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTL - M - 32 S E - 06 050 T3PH R1 A 1 - F

❶Bearing type

M	Plain bearing

❷Size

32	32

❸Connected Controller*1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□42 Stepping Motor	
Drive Method		Sliding screw ø8	
Stroke mm		50 to 200	
Screw lead mm		6	12
Max. Payload kg *1	Horizontal	10	4
	Vertical	14	4.8
Operating Speed Range *2 mm/s		15 to 90	30 to 180
Max. Acceleration/ Deceleration *3 mm/s²		1312 (Setting: 9)	5250 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead 6 mm: Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less	Screw Lead 12 mm: Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less
0	15	10.0	9.5	9.0	30	4.0	3.5	3.0
1	23	9.2	8.7	8.2	46	3.2	1.9	1.4
2	31	6.0	5.5	5.0	63	2.8	2.3	1.8
3	40	6.0	5.5	5.0	80	2.4	2.7	2.2
4	48	4.0	3.5	3.0	96	2.4	1.9	1.4
5	56	3.6	3.1	2.6	113	2.4	1.9	1.4
6	65	3.6	3.1	2.6	130	2.4	1.9	1.4
7	73	3.2	2.7	2.2	146	2.0	1.5	1.0
8	81	2.4	1.9	1.4	163	1.6	1.1	0.6
9	90	2.0	1.5	1.0	180	1.2	0.7	0.2

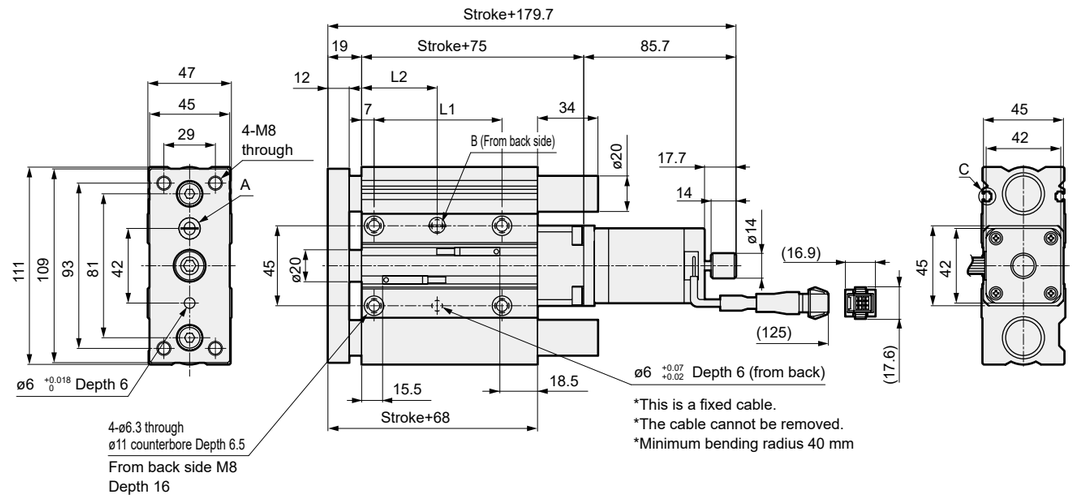
[Vertical Installation]

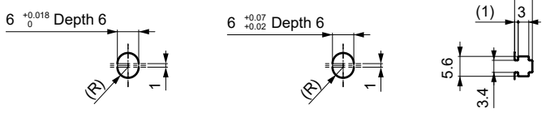
Switch Setting	Screw Lead 6 mm: Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less	Screw Lead 12 mm: Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less
0	15	14	13.5	13	30	4.8	4.3	3.8
1	23	13.2	12.7	12.2	46	4	3.5	3.0
2	31	12.4	11.9	11.4	63	4	3.5	3.0
3	40	11.6	11.1	10.6	80	4	3.5	3.0
4	48	11.6	11.1	10.6	96	3.6	3.1	2.6
5	56	11.6	11.1	10.6	113	3.2	2.7	2.2
6	65	10.8	10.3	9.8	130	2.8	2.3	1.8
7	73	10.8	10.3	9.8	146	2.4	1.9	1.4
8	81	10	9.5	9.0	163	2.0	1.5	1.0
9	90	9.2	8.7	8.2	180	1.6	1.1	0.6

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTL-32





[Dimension Table by Stroke]

Stroke Code	050	100	150	200
Stroke (mm)	50	100	150	200
L1	72	122	172	222
L2	42.5	67.5	92.5	117.5
Weight (kg)	2.7	3.6	4.2	5.3

Electric Actuator Guided Type

DSTL-50

□56 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DSTL - M - 50 S E - 06 050 T3PH R1 A 1 - F

❶Bearing type

M	Plain bearing

❷Size

50	50

❸Connected Controller *1

S	ESC4

❹Motor Mounting Direction

E	Inline Mount

❺Lead

06	6 mm
12	12 mm

❻Stroke

050	50 mm
100	100 mm
150	150 mm
200	200 mm

❼Switch

NNNN	None
T3PH	T-type straight type
T3PV	T-type L-shape type

❽Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

⓫Option

Blank	End plate material: Aluminum
F	End plate material: Steel

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

Specifications

Connected Controller		ESC4	
Motor		□56 Stepping Motor	
Drive Method		Sliding screw ø12	
Stroke	mm	50 to 200	
Screw lead	mm	6	12
Max. Payload kg *1	Horizontal	14.8	9.2
	Vertical	13.2	7.2
Operating Speed Range *2	mm/s	15 to 72	30 to 144
Max. Acceleration/ Deceleration	*3 mm/s²	827 (Setting: 9)	3306 (Setting: 9)
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table. If the operating noise at low speed is loud, please increase the speed.
*2 Maximum speed may decrease depending on conditions.
*3 For acceleration/deceleration at other settings, please refer to the speed and payload table. *4 Pushing operation is not supported. Colliding with the mechanical end, etc., may lead to damage to the internal parts of the actuator.

Speed and Payload

[Horizontal Installation]

Switch Setting	Screw Lead: 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less	Screw Lead: 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less
0	15	14.8	12.8	11.8	30	9.2	9.2	9.2
1	21	11.6	9.6	8.6	42	9.2	9.2	9.2
2	27	10.0	8	7.0	55	9.2	9.2	9.2
3	34	8.4	6.4	5.4	68	9.2	7.2	6.2
4	40	8.4	6.4	5.4	80	8.8	6.8	5.8
5	46	8.4	6.4	5.4	93	8.8	6.8	5.8
6	53	8.4	6.4	5.4	106	8.4	6.4	5.4
7	59	6.8	4.8	3.8	118	7.6	5.6	4.6
8	65	6.8	4.8	3.8	131	6.0	4.0	3.0
9	72	6.8	4.8	3.8	144	4.4	2.4	1.4

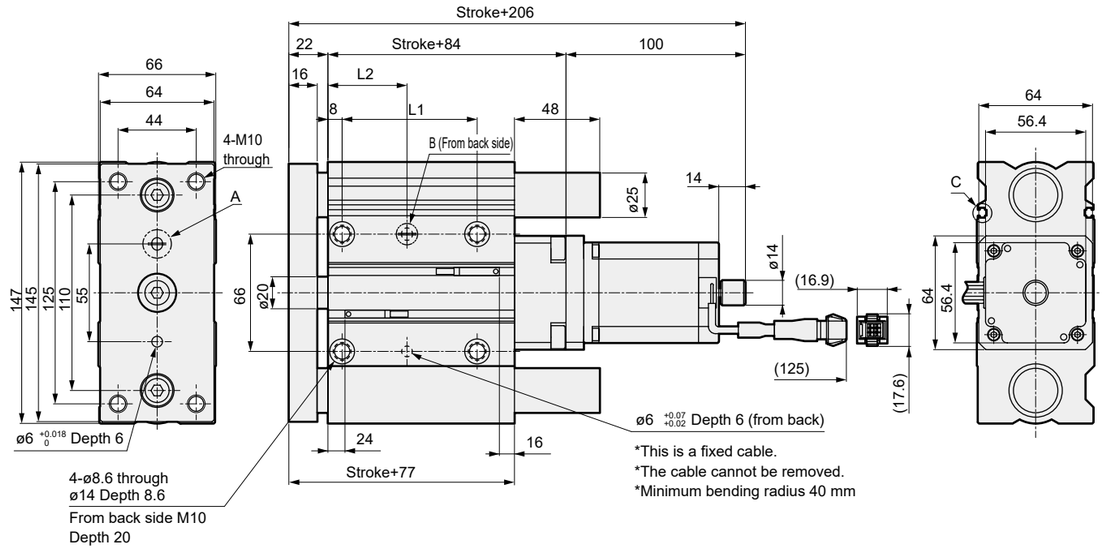
[Vertical Installation]

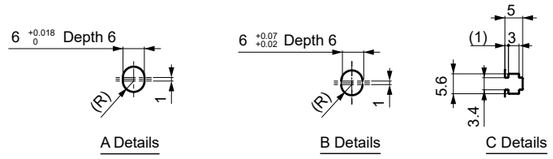
Switch Setting	Screw Lead: 6 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less	Screw Lead: 12 mm Speed (mm/s)	Payload (kg) Stroke (mm) 50 or less	100 or less	200 or less
0	15	13.2	12.2	11.2	30	7.2	6.2	5.2
1	21	13.2	12.2	11.2	42	7.2	6.2	5.2
2	27	13.2	12.2	11.2	55	7.2	6.2	5.2
3	34	13.2	12.2	11.2	68	7.2	6.2	5.2
4	40	12.8	11.8	10.8	80	7.2	6.2	5.2
5	46	12.4	11.4	10.4	93	6.8	5.8	4.8
6	53	12	11	10	106	6.4	5.4	4.4
7	59	9.6	8.6	7.6	118	6	5	4
8	65	7.6	6.6	5.6	131	4.4	3.4	2.4
9	72	6	0	0	144	2.4	1.4	0.4

* The speed setting is a guideline. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.
* Value when no moment is applied to the end plate section. For details such as flatness of the mounting surface, please refer to the instruction manual.

External Dimension Drawing

● DSTL-50





[Dimension Table by Stroke]

Stroke Code	050	100	150	200
Stroke (mm)	50	100	150	200
L1	76	126	176	226
L2	44.5	69.5	94.5	119.5
Weight (kg)	5.2	6.5	7.7	9.1

Model Selection

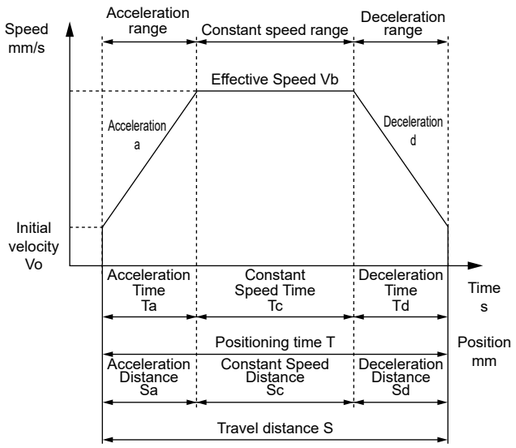
STEP1 Confirmation of Payload

Payload changes depending on mounting orientation, screw lead, and transport speed. Select the size and screw lead by referring to the system table (P. 467), the specification table for each model, and the payload table by speed setting.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Formula
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s²	According to the table below (fixed value)
	Deceleration			
	Travel Distance	S	mm	*
Calculated Value	Reached Speed	Vmax	mm/s	$= (S \times a + V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= (Vb-V0)/a
	Deceleration Time			
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	= V0×Ta+(a×Ta²) / 2
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	=S-2×Sa
	Positioning Time	T	s	=2×Ta+Tc

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

[Speed Setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

[Acceleration, Deceleration] (mm/s²)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306

STEP3 Confirmation of Static Allowable Load and Static Allowable Moment

Calculate the load and moment that occur when the end plate stops. Confirm that the lateral load (W) and torsional moment (MY) are as follows. Following the formula below, confirm that the resultant moment (MT) satisfies the following expression.

Resultant moment

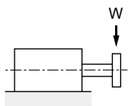
$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} \leq 1.0$$

Static Allowable Load and Static Allowable Moment

Model No.	Stroke (mm)	Lateral Load W (N)	Bending moment MPmax (N·m)	Torsional moment MYmax (N·m)	Lateral bending moment MRmax (N·m)
DSTL-M-20	50	54	32.6	0.80	32.6
	100	38		0.56	
	150	30		0.44	
	200	24		0.35	
DSTL-M-32	50	161	107.4	3.26	107.4
	100	121		2.45	
	150	97		1.96	
	200	81		1.64	
DSTL-M-50	50	243	201.7	6.68	201.7
	100	189		5.20	
	150	155		4.26	
	200	131		3.60	

Calculate the allowable load when operating under load using the formula below.
Catalog allowable lateral load×0.9

● Lateral load W (N) *Vertical Installation

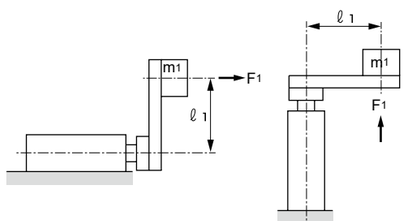


$$\frac{m1 \times \ell 1 \times 10}{L} \leq W$$

Size	L
20	0.016+st
32	0.022+st
50	0.025+st

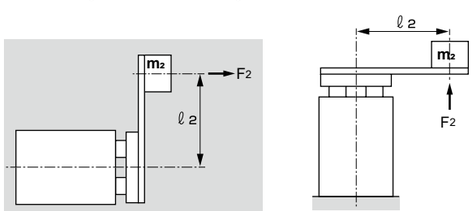
● Bending moment MP (N·m)

MP=F1×ℓ1=10×m1×G×ℓ1



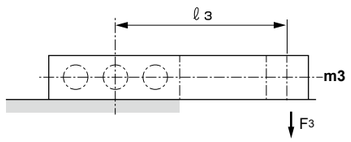
● Lateral bending moment MR (N·m)

MR=F2×ℓ2=10×m2×G×ℓ2



● Torsional moment MY (N·m)

MY= F3×ℓ3 =10×m3×ℓ3

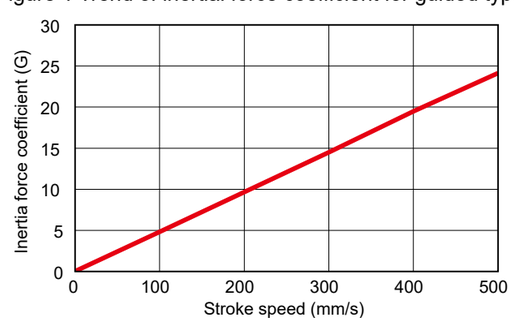


m1: **m2**: **m3**: } Load weight (kg)

ℓ1: **ℓ2**: **ℓ3**: } Eccentricity (m)

G: Inertial force coefficient

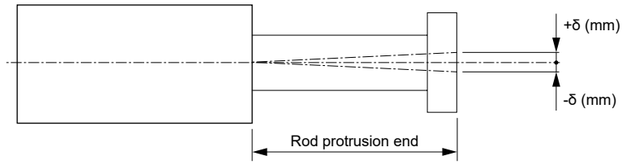
Figure 1 Trend of inertial force coefficient for guided type



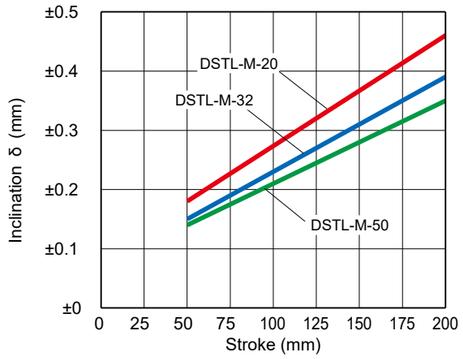
Model Selection

Runout accuracy

The amount of tilt that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)

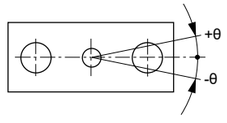


● DSTL-M



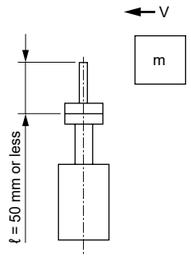
Non-rotation accuracy

(Reference value)



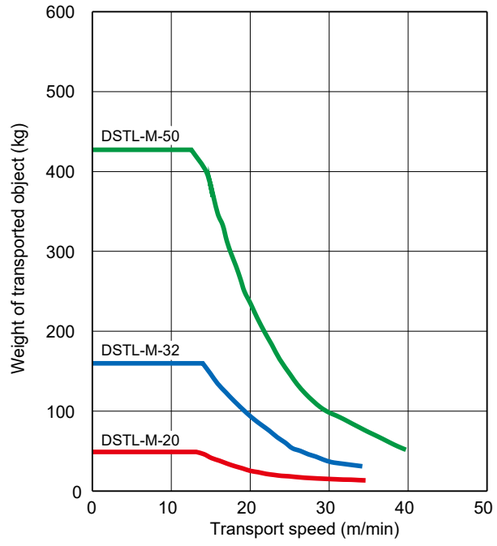
Size	Non-rotation accuracy θ (degrees)
DSTL-M-20	±0.10
DSTL-M-32	±0.08
DSTL-M-50	±0.07

Operating range when used as a stopper

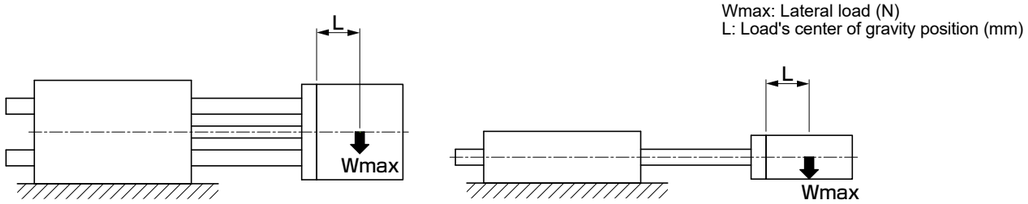


*1 When using as a stopper, please select a model with a stroke of 50 or less.
*2 The total length of the stopper part should be ℓ = 50 mm or less.
*3 When fixing the actuator body, ensure the bolt screwing depth is 2d or more and consider measures to prevent loosening (adhesive, spring washer, etc.).
*4 For calculation of required operating thrust, please refer to P. 436.
*5 Please calculate the actuator thrust using the formula below.
Thrust = Vertical payload×10 (N)

Impact load

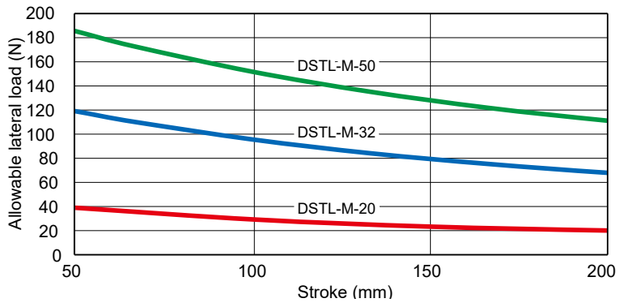


Allowable Lateral Load | Plain bearing

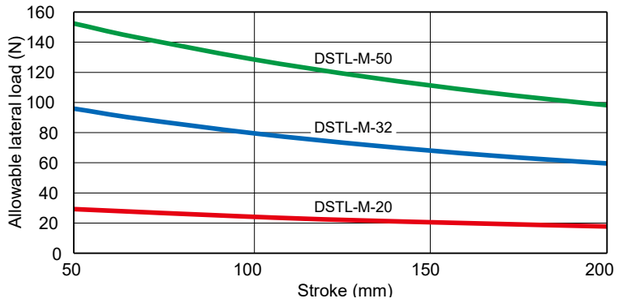


Wmax: Lateral load (N)
L: Load's center of gravity position (mm)

● When L=50 mm



● When L=100 mm

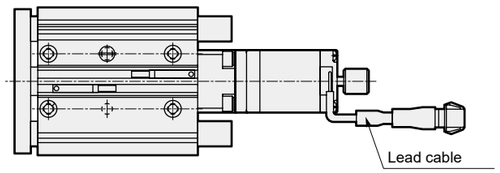


*1: Calculate the allowable lateral load when operating under load using the formula below. Catalog allowable lateral load value×0.9
*2: When designing, please consider the safety factor according to the operating conditions.

Special Order Product*

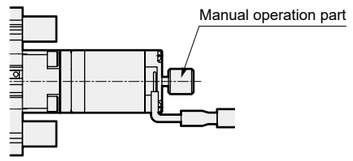
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

Electric Actuator D Series

Spring Drive Method

CONTENTS

Product Introduction		482
■ Compact Guided Type	DMSDG	485
■ 2-Finger Gripper Type	DLSH	499
■ 3-Finger Gripper Type	DCKW	509
⚠ Precautions for Use		518
Model Selection Checklist		525

D Series
DSSD2
DSTK
DSTG
DSTS
DSTL
DMSDG
DLSH
DCKW
Ending

Spring-loaded electric actuators specialized for clamping and gripping applications

Easy

2-Finger Gripper Type
DLSH

Controller
ESC4

Compact Guided Type
DMSDG

3-Finger Gripper Type
DCKW

Making carbon-neutral equipment more accessible

Lineup

			Size				Listed Page
			08	16	20	32	
Actuator	Compact guided	**DMSDG**	●	●			485
	2-finger gripper	**DLSH**			●	●	499
	3-finger gripper	**DCKW**			●	●	509
Application Controller		**ESC4**	●	●	●	●	611

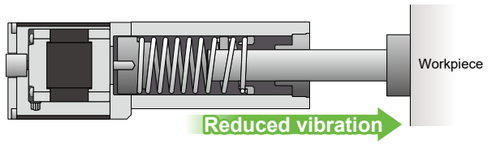
High versatility Safety & Security

Spring built into the drive mechanism

A spring drive system in which the motor rotates the spring.

DMSDG Series

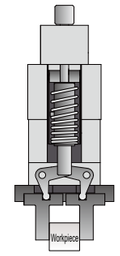
The spring mechanism eliminates the need for low-speed operation during pushing, reducing the impact on the workpiece.



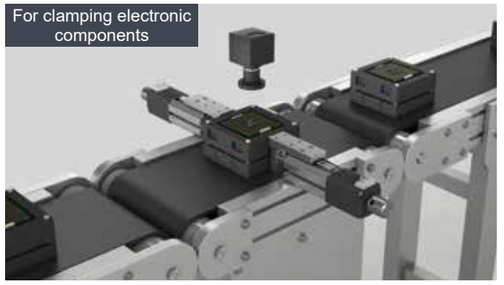
DLSH/DCKW Series

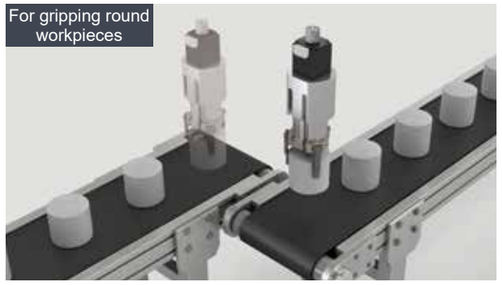
The self-locking and spring mechanism maintains the gripping force even when the power is cut off, reducing the risk of the workpiece falling.

* Please contact us if you require self-locking for the DMSDG Series.



Retains gripping force





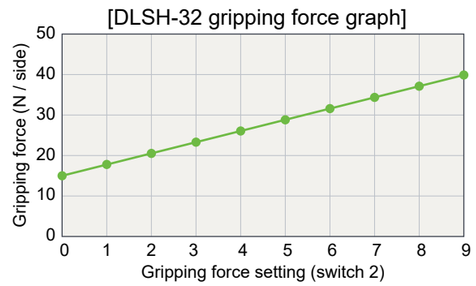
Easy adjustment

No special tools required. Easy on-site setting

The stop position is adjusted by turning the manual operation knob to the position where the cylinder switch reacts. Gripping force and speed can be set with the controller's rotary switch.

Cylinder Switch

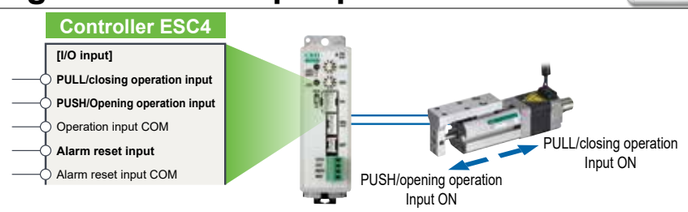
Rotary switch



Easy controls

Can operate with signals from 3 input points

No program is required.
Operates with simple wiring.



Electric Actuator with Motor Specification

DMSDG

Compact Guided Type

CONTENTS

Product Introduction	482
●Specifications, Model No. Notation, External Dimension Drawings	
· DMSDG-08	486
· DMSDG-16	488
●Model Selection	490
⚠Precautions for Use	518
Model Selection Check Sheet	525

DMSDG System Table

Actuator Model No.	Motor Size	Spring lead (mm)	Stroke (mm) and Max. Speed (mm/s)			Max. Pushing Force (N)
			10	20	30	
DMSDG-08	□20	3.3	50			10
DMSDG-16	□28	5.1	77			30

Electric Actuator Compact Guided Type

DMSDG-08

□20 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DMSDG - 08 S H3 10 F3PH - T R1 A 1

❶Size

08	8

❷Connected Controller *1

S	ESC4

❸Spring Lead

H3	3.3 mm

❹Stroke

10	10 mm
20	20 mm
30	30 mm

❺Switch

NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❻Connector Outlet Direction *2

T	Top side
B	Bottom side
R	Right side
L	Left side

❼Relay Cable *3

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Attached

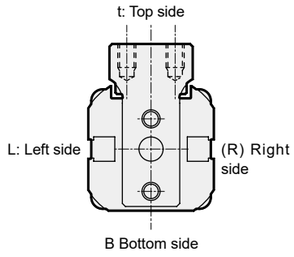
N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 Please refer to Figure 1.
*3 For the external dimension drawing of the relay cable, please refer to P. 618.

[Figure 1]



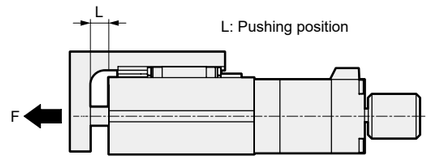
Connector Outlet Direction Diagram

Specifications

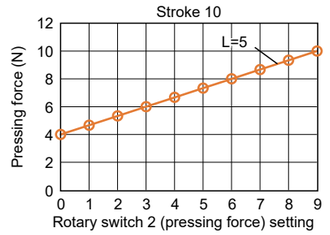
Connected Controller		ESC4		
Motor		□20 Stepping Motor		
Drive Method		Cylindrical spring		
Stroke mm		10	20	30
Effective Pushing Range (L)	mm	5	5 to 15	5 to 25
Spring Lead		H3 (3.3 mm)		
Max. Pushing Force	*1*2 N	10		
Static Allowable Moment	N·m	MP=0.16, MY=0.16, MR=0.24		
Max. Payload g	Horizontal	270		
	Vertical	80		
Operating Speed Range mm/s		8 to 50		
Max. Acceleration/Deceleration mm/s²		982 (setting 9)		
Pushing Speed Range	*1 mm/s	8 to 50		
Insulation Resistance		10 MΩ, 500 VDC		
Withstanding Voltage		500 VAC for 1 minute		
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)		
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)		
Atmosphere		No corrosive gas, explosive gas, or dust		
Protection Structure		IP40		

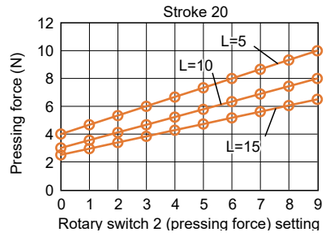
*1 Pushing operation is only possible during PUSH. Performing a pushing operation during PULL may lead to damage to the internal parts of the actuator.
*2 Pushing position L=5 mm
*3 When installed vertically, the pushing force, positioning time, and stop position will change compared to horizontal installation. Please contact us for details.

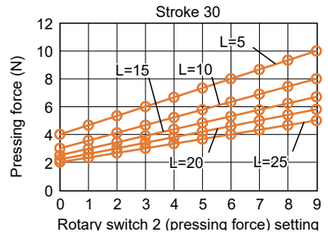
Pushing force and rotary switch setting



*1 The pushing force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This product does not support self-locking. Please contact us if you require self-locking.

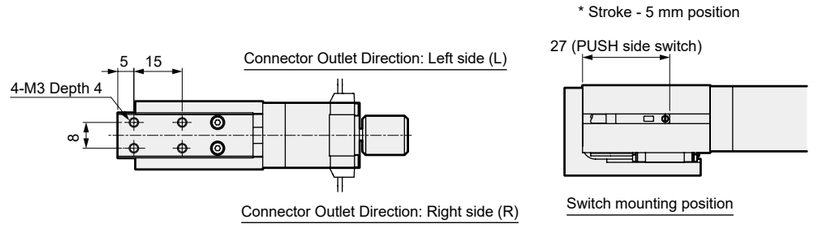


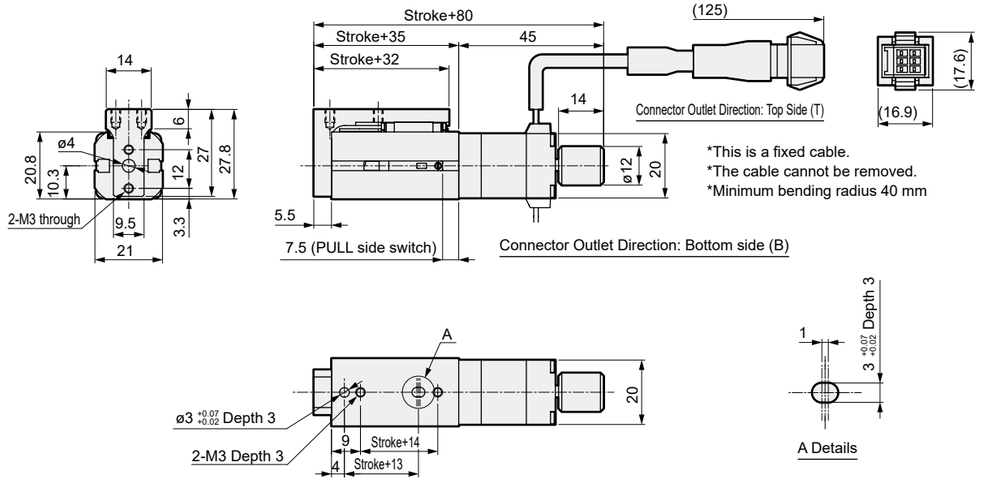




External Dimension Drawing

● DMSDG-08





Stroke (mm)	10	20	30
Weight (g)	110	130	140

Electric Actuator Compact Guided Type

DMSDG-16

□28 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DMSDG - 16 S H5 10 F3PH - T R1 A 1

❶Size

16	16

❷Connected Controller *1

S	ESC4

❸Spring Lead

H5	5.1 mm

❹Stroke

10	10 mm
20	20 mm
30	30 mm

❺Switch

NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❻Connector Outlet Direction*2

T	Top side
B	Bottom side
R	Right side
L	Left side

❼Relay Cable*3

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❽Controller Attached

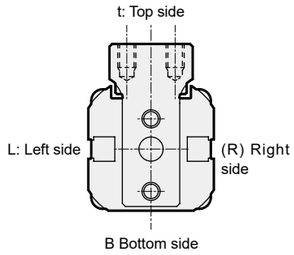
N	None
A	DIN rail mounting specification
B	Panel mounting specification

❾IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

*1 For controllers, please refer to P. 611.
*2 Please refer to Figure 1.
*3 For the external dimension drawing of the relay cable, please refer to P. 618.

[Figure 1]



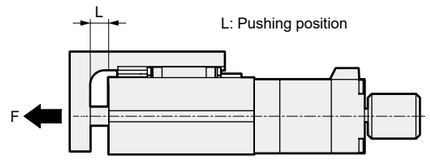
Connector Outlet Direction Diagram

Specifications

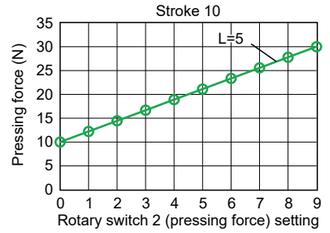
Connected Controller		ESC4		
Motor		□28 Stepping Motor		
Drive Method		Cylindrical spring		
Stroke mm		10	20	30
Pressing effective range (L)	mm	5	5 to 15	5 to 25
Spring Lead		H5 (5.1 mm)		
Max. Pushing Force	*1*2 N	30		
Static Allowable Moment	N·m	MP=0.57, MY=0.57, MR=1.16		
Max. Payload g	Horizontal	800		
	Vertical	800		
Operating Speed Range	mm/s	13 to 77		
Max. Acceleration/Deceleration	mm/s²	2259 (setting 9)		
Pushing Speed Range	*1 mm/s	13 to 77		
Insulation Resistance		10 MΩ, 500 VDC		
Withstanding Voltage		500 VAC for 1 minute		
Operating Ambient Temperature, Humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)		
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)		
Atmosphere		No corrosive gas, explosive gas, or dust		
Protection Structure		IP40		

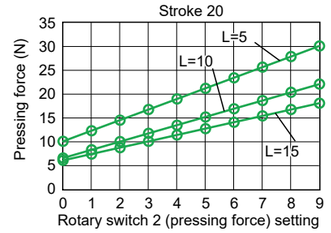
*1 Pushing operation is only possible during PUSH. Performing a pushing operation during PULL may lead to damage to the internal parts of the actuator.
*2 Pushing position L=5 mm
*3 When installed vertically, the pushing force, positioning time, and stop position will change compared to horizontal installation. Please contact us for details.

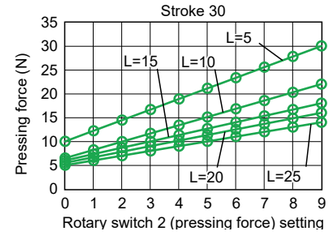
Pushing force and rotary switch setting



*1 The pushing force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This product does not support self-locking. Please contact us if you require self-locking.

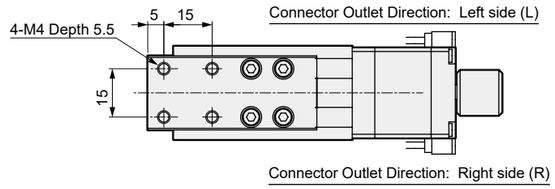




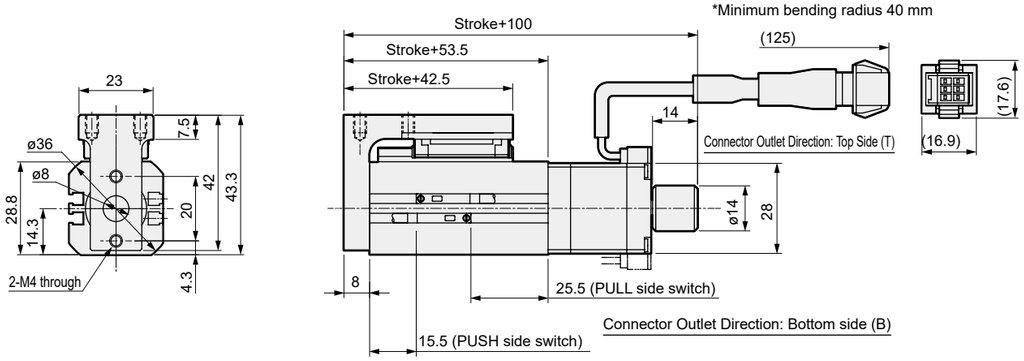


External Dimension Drawing

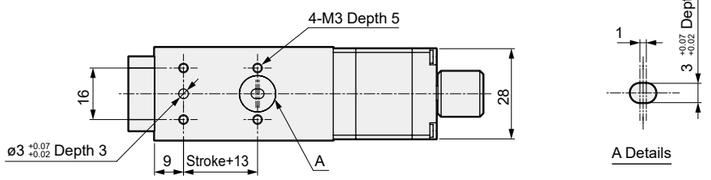
● DMSDG-16



*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm



* Stroke - 5 mm position

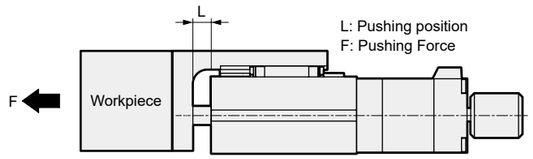


Stroke (mm)	10	20	30
Weight (g)	290	310	330

Model Selection

STEP1 Confirmation of Conditions

Confirm the conditions of ① pushing force and ② pushing position.



STEP2 Model Selection

Select a model from the table below based on the necessity of ① pushing force and ② pushing position.

Model Selection List

Model	①Max. Pushing Force F	②Pushing Position L (Effective Pushing Range)		
		5 mm	5 to 15 mm	5 to 25 mm
DMSDG-08SH3	10 N	Stroke: 10 mm	Stroke: 20 mm	Stroke: 30 mm
DMSDG-16SH5	30 N	Stroke: 10 mm	Stroke: 20 mm	Stroke: 30 mm

STEP3 Confirmation of Pushing Force and Rotary Switch Setting

Select the graph for the selected model and check the rotary switch setting from ① pushing force and ② pushing position.

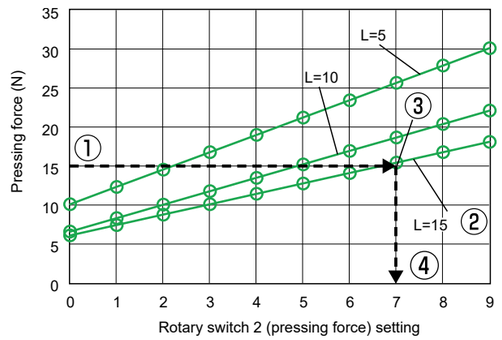
[Model Selection Example]

STEP1
①Required pushing force 15 N
②Pushing position L15 mm

STEP2
From the model selection list, the model that satisfies ① and ② is DMSDG-16SH5 stroke 20 mm

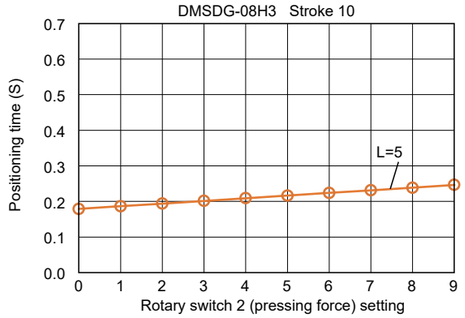
STEP3
On the graph(s) of pushing force and rotary switch settings (P. 487, P. 489) for the model selected in STEP 2, check in the order of ①, ②, ③, and ④ to confirm that the required pushing force is met with a rotary switch setting of 7 or higher.

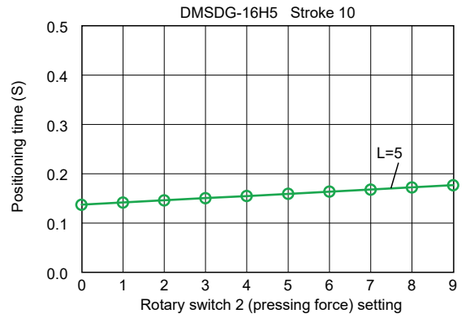
From the above, **DMSDG-16SH520*** can be selected.

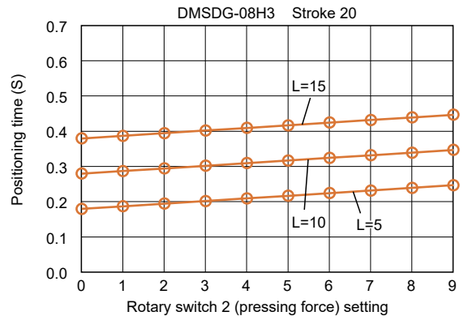


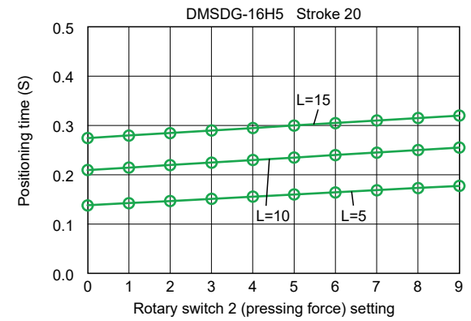
Confirmation of Positioning Time

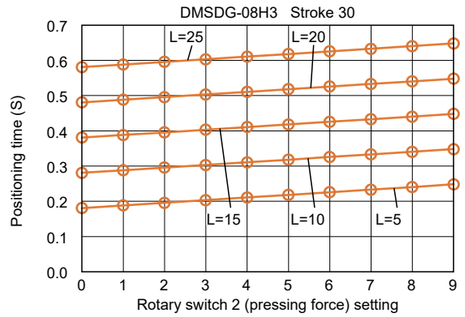
Please check from the graph whether the positioning time of the selected product meets the required tact time.

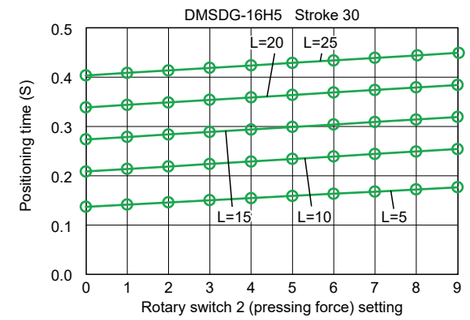


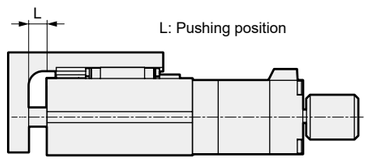












*1 Positioning time is the time from when the motor starts rotating until it stops.
*2 This is the value when rotary switch 1 (speed) = 9.
The starting position is the value when L=0.
For other conditions, please refer to the instruction manual.

STEP4 Confirmation of Static Moment

Calculate the load and moment that occur when the table stops.

● When the load is mounted in only one direction
Check if the calculated value is less than or equal to the allowable moment value (Table 1).

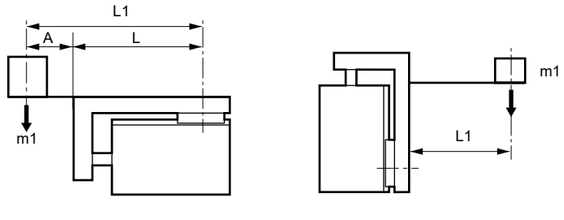
● When the load mounting direction is two or more directions (in the case of a composite moment)
Following the formula below, confirm that the resultant moment (MT) is as follows (satisfies the following expression).

$$MT = \frac{MP}{MP\ max} + \frac{MR}{MR\ max} + \frac{MY}{MY\ max} \leq 1.0$$

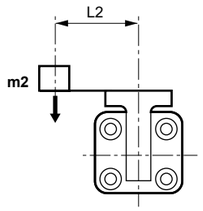
Table 1 Allowable moment during operation (N·m)

Size	MP	MR	MY
08	0.16	0.24	0.16
16	0.57	1.16	0.57

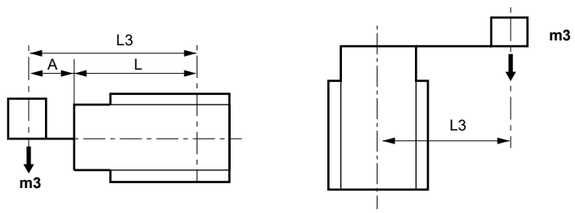
● Bending moment: MP
MP (N·m) = 10×m1 (kg)×L1 (m)



● Lateral bending moment: MR
MR (N·m) = 10×m2 (kg)×L2 (m)



● Torsional moment: MY
MY (N·m) = 10×m3 (kg)×L3 (m)



L Value

Size	Stroke (mm)		
	10	20	30
08	0.033	0.043	0.053
16	0.038	0.048	0.058

STEP5 Confirmation of Moment due to Inertial Load

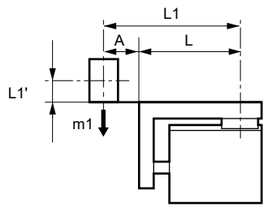
Depending on the mounting direction of the load, a moment due to inertial load may be applied.
Calculate the moment due to inertial load and check if it is below the allowable value.

Table 2 Allowable moment when inertial load is acting (N·m)

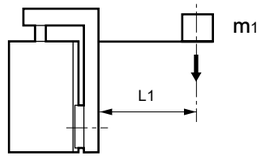
Size	MP'	MR'	MY'
08	0.33	-	0.33
16	1.11	-	1.11

* No inertial load is applied in the MR' direction.

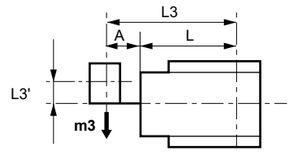
● Bending moment: MP'
MP' = 10×m1×(L1+G×L1')



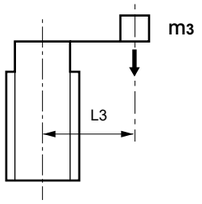
MP' = 10×m1×L1×(1+G)



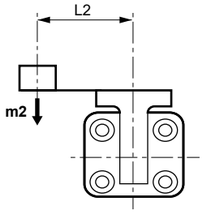
● Torsional moment: MY'
MY' = 10×m3×(L3+G×L3')



MY' = 10×m3×L3×(1+G)



MY' = 10×m2×G×L2



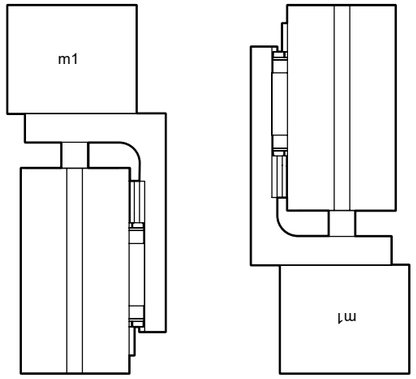
[Switch Setting and Acceleration]

Speed setting (switch 1)	Size 08		Size 16	
	Speed (mm/s)	Acceleration (G)	Speed (mm/s)	Acceleration (G)
0	8	0.00	13	0.00
1	13	0.01	20	0.01
2	18	0.01	27	0.03
3	22	0.02	34	0.05
4	27	0.03	41	0.07
5	31	0.04	49	0.09
6	36	0.06	56	0.12
7	41	0.07	63	0.16
8	45	0.09	70	0.20
9	50	0.11	77	0.23

* When gripping setting (switch 2) is 9

STEP6 Confirmation of Allowable Load

When mounting vertically, confirm that the load is below the following allowable load.

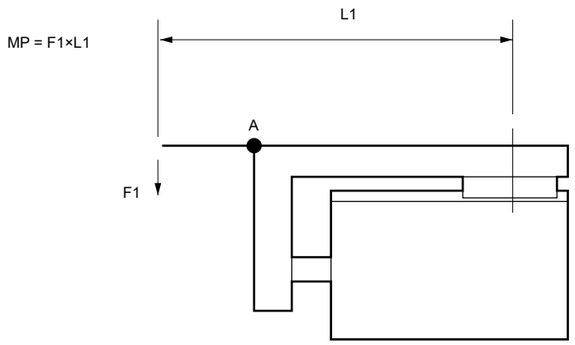


[N]

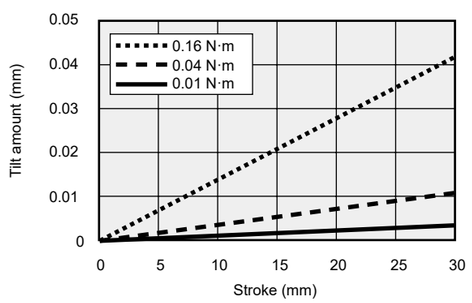
Size	Vertically upward	Vertically downward
08	10	8
16	20	10

Table Tilt Amount (Reference Value)

● Table displacement at point A due to bending moment MP



● DMSDG-08



● DMSDG-16

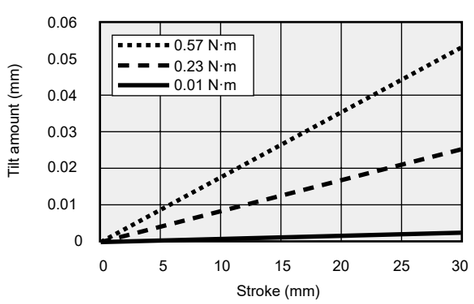
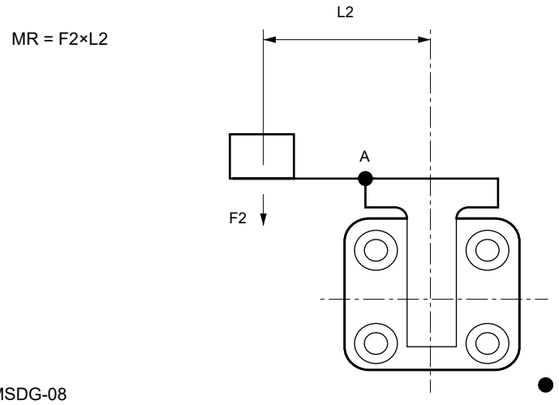
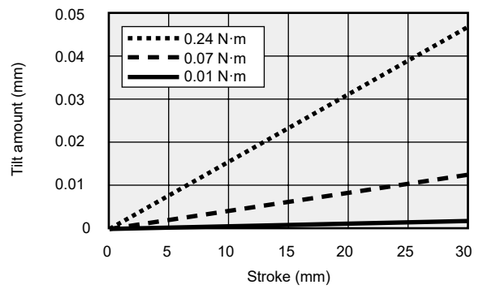


Table Tilt Amount (Reference Value)

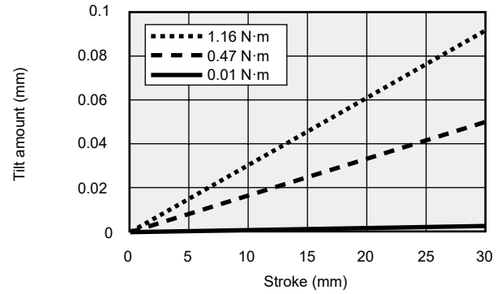
● Table displacement at point A due to lateral bending moment MR



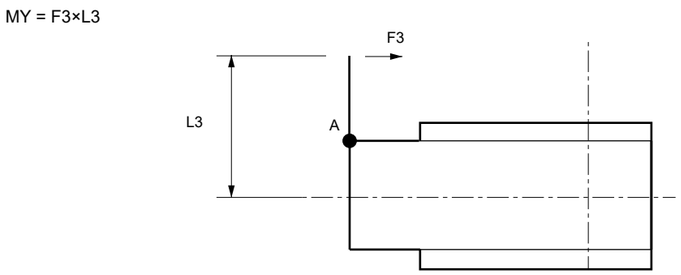
● DMSDG-08



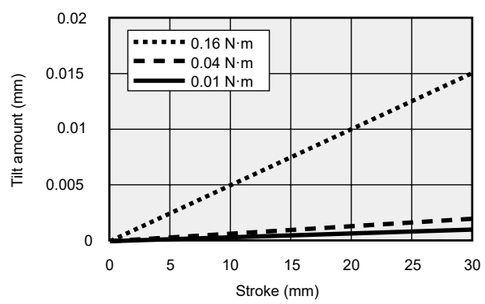
● DMSDG-16



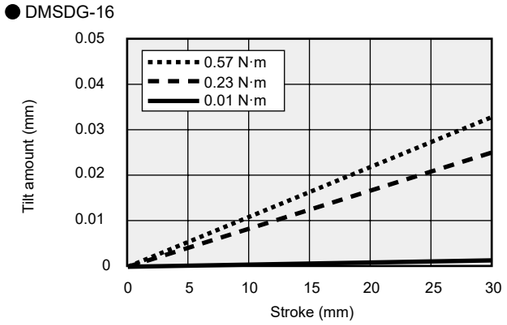
● Table displacement at point A due to swinging moment MY



● DMSDG-08



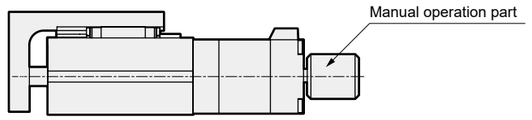
● DMSDG-16



Special Order Product*

● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

MEMO

D Series
DSSD2
DSTK
DSTG
DSTS
DSTL
DMSDG
DLSH
DCKW
Ending

Electric Actuator with Motor Specification

DLSH

2-Finger Gripper Type

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●Specifications, Model No. Notation, External Dimension Drawings
· DLSH-20 500
· DLSH-32 502
●Model Selection 504
Precautions for Use 518
Model Selection Check Sheet 526

DLSH System Table

Actuator Model No.	Motor Size	Spring lead (mm)	Stroke (mm) and Max. Speed (mm/s)		Max. Gripping Force (N)
			10	22	
DLSH-20	□28	4.2	63		10
DLSH-32	□42	6		60	40

Electric Actuator 2-Finger Gripper Type

DLSH-20

□28 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DLSH - 20 S H4 10 N N F3PH - F R1 A 1

❶Size

20	20

❷Connected Controller *1

S	ESC4

❸Spring Lead

H4	4.2 mm

❹Stroke

10	10 mm (5 mm one side)

❺Rubber Cover

N	None

❻Finger

N	Basic type

❼Switch

NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❽Connector Outlet Direction

F	Front

❾Relay Cable *2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❿Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

⓫IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

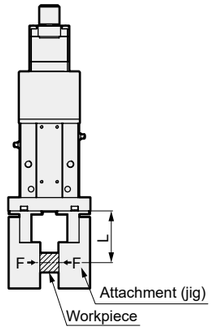
*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

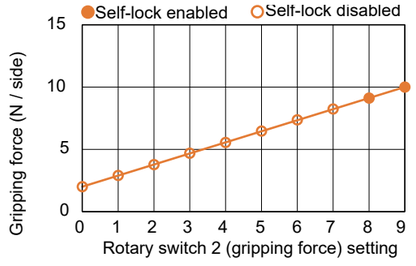
Specifications

Connected Controller	ESC4
Motor	□28 Stepping Motor
Drive Method	Cylindrical spring
Stroke mm	10 (one side 5)
Effective Pushing Range mm	5 (one side 2.5)
Max. Gripping Force *1 N	10 (per side)
Static Allowable Moment N·m	MP=2.1, MY=2.1, MR=2.1
Operating Speed Range mm/s	11 to 60
Max. Acceleration/Deceleration mm/s²	1371 (setting 9)
Gripping Speed Range mm/s	11 to 60
Repeatability *2 mm	±0.02
Insulation Resistance	10 MΩ, 500 VDC
Withstanding Voltage	500 VAC for 1 minute
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Protection Structure	IP40
Weight g	600

*1 Gripping is only possible in the closing direction. Performing a gripping operation in the opening direction may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.

Gripping force and rotary switch setting

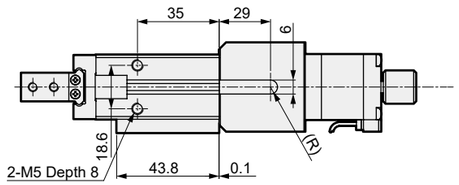


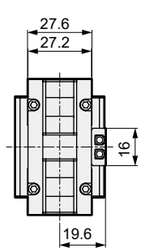


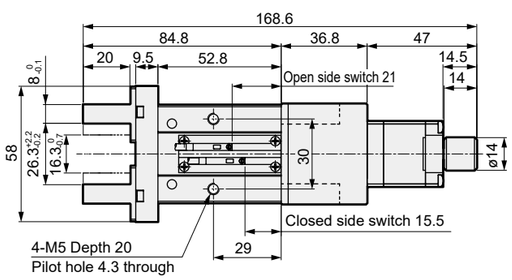
*1 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This is for speed setting 9 (60 mm/s). (L=20)
*3 Pushing position = stroke×0.5
*4 The self-locking range is a reference value. Self-locking may not work depending on the conditions.

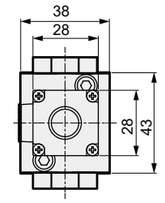
External Dimension Drawing

● DLSH-20

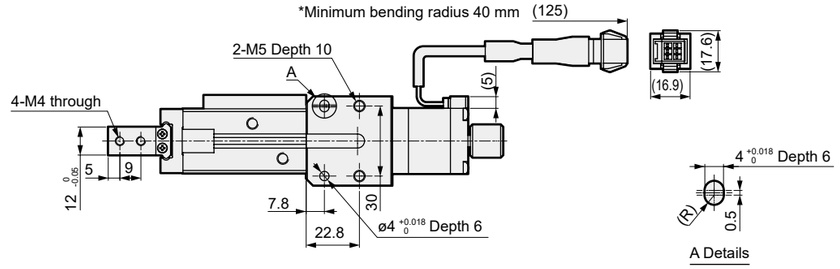








*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm



* When switch, F3PH (F-type straight type) is selected, the lead wire outlet direction is on the finger side. If lead wire handling is an issue, please use F3PV (F-type L-shape type).

Electric Actuator 2-Finger Gripper Type

DLSH-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DLSH - 32 S H6 22 N N F3PH - F R1 A 1

❶Size

32	32

❷Connected Controller *1

S	ESC4

❸Spring Lead

H6	6 mm

❹Stroke

22	22 mm (11 mm one side)

❺Rubber Cover

N	None

❻Finger

N	Basic type

❼Switch

NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❽Connector Outlet Direction

F	Front

❾Relay Cable*2

N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❿Controller Attached

N	None
A	DIN rail mounting specification
B	Panel mounting specification

⓫IO Cable Length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

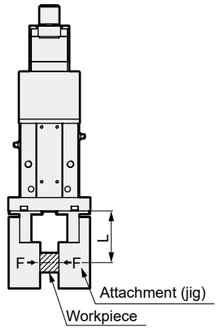
*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

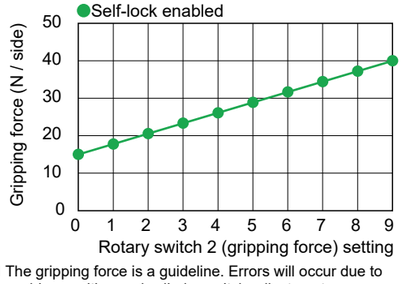
Specifications

Connected Controller	ESC4
Motor	□42 Stepping Motor
Drive Method	Cylindrical spring
Stroke mm	22 (one side 11)
Effective Pushing Range mm	11 (one side 5.5)
Max. Gripping Force *1 N	40 (per side)
Static Allowable Moment N·m	MP=4.5, MY=4.5, MR=4.5
Operating Speed Range mm/s	15 to 63
Max. Acceleration/Deceleration mm/s²	840 (setting 9)
Gripping Speed Range mm/s	15 to 63
Repeatability *2 mm	±0.02
Insulation Resistance	10 MΩ, 500 VDC
Withstanding Voltage	500 VAC for 1 minute
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Protection Structure	IP40
Weight g	1950

*1 Gripping is only possible in the closing direction. Performing a gripping operation in the opening direction may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.

Gripping force and rotary switch setting

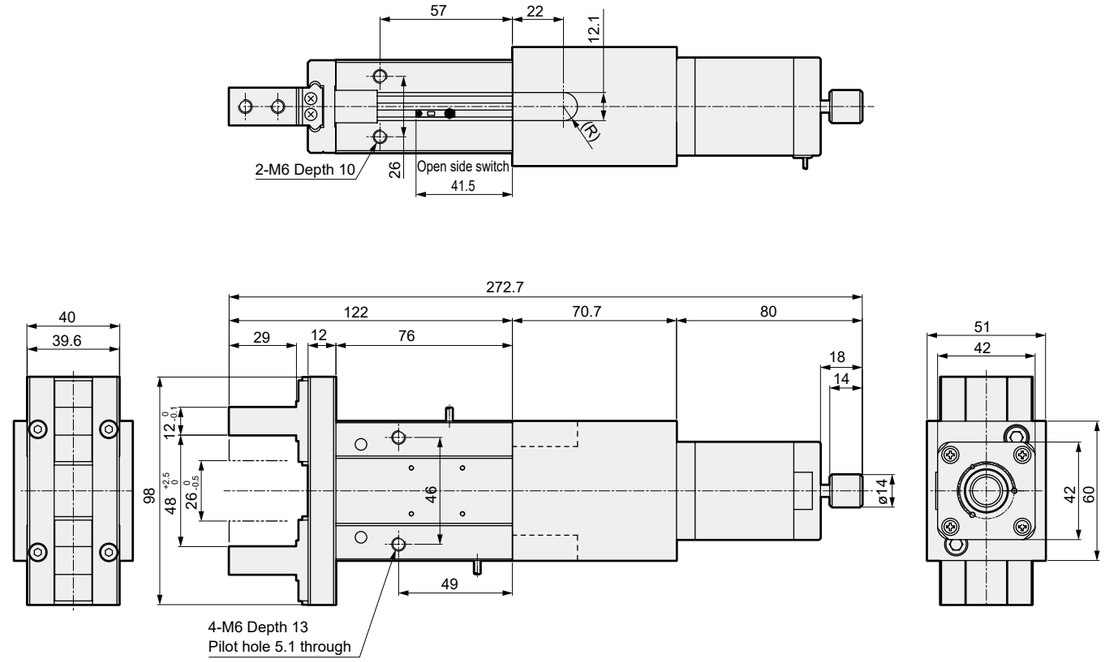


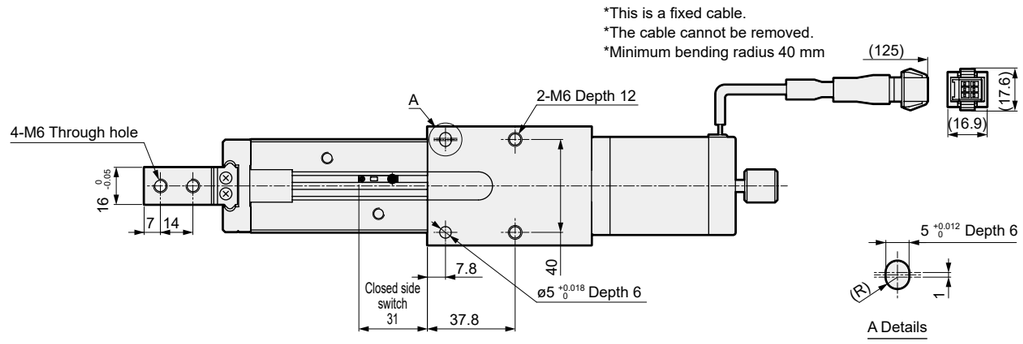


*1 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This is for speed setting 9 (63 mm/s). (L=20)
*3 Pushing position = stroke×0.5
*4 The self-locking range is a reference value. Self-locking may not work depending on the conditions.

External Dimension Drawing

● DLSH-32





STEP1 Calculation of Required Gripping Force

Calculate the gripping force required to transport the workpiece (weight W_L) based on the following.

$$Fw > \frac{WL \times g \times K}{n}$$

FW: Required gripping force (N)
n: Number of attachments = 2
WL: Workpiece weight (kg)
g: Gravitational acceleration = 9.8 (m/s²)
K: Transport coefficient
5 [Holding only]
10 [Normal transport]
20 [Rapid acceleration transport]

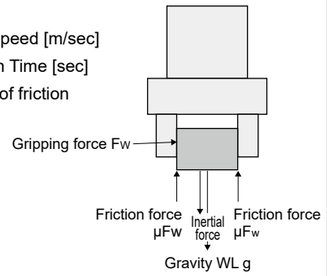
About Transport Coefficient K

Calculation example: When decelerating and stopping in 0.1 second from transport speed of V = 0.75 m/s with friction coefficient μ of workpiece and attachment as 0.1, See below.

Determine the transport coefficient K from the force applied to the workpiece

V: Transport speed [m/sec]
t: Deceleration Time [sec]
μ: Coefficient of friction

• Inertial force = $W_L \times (V/t)$
• Gravity = $W_L g$
• Required gripping force F_W > $\frac{W_L \times (V/t) + W_L g}{n\mu} = \frac{W_L \times (V/t + g)}{n\mu} = \frac{17.3 W_L}{2 \times 0.1} = 86.5 W_L$



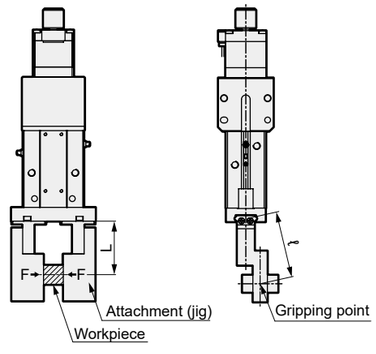
∴ The transport coefficient K at this time is, from the above formula $\frac{WL \times g \times K}{n} = 86.5\ WL$

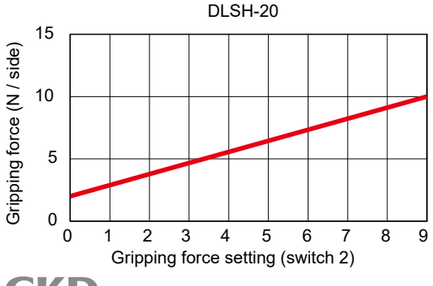
$$K = \frac{n \times 86.5}{g} = \frac{2 \times 86.5}{9.8} \approx 20$$

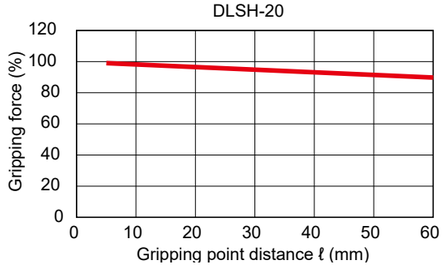
Note) The transport coefficient K needs to allow a margin for impacts during transport, etc. Even if the friction coefficient μ is higher than μ=0.1, for safety, please set the transport coefficient K to 10 to 20 or more.

STEP2 Provisional selection of model from gripping force graph

Confirm the conditions on the right and provisionally select a model from the gripping force graph. The gripping force changes depending on the gripping point distance ℓ and the gripping force setting. Please confirm that sufficient gripping force can be obtained under your conditions of use from the graph.



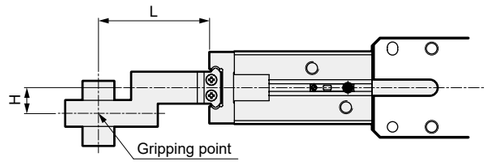


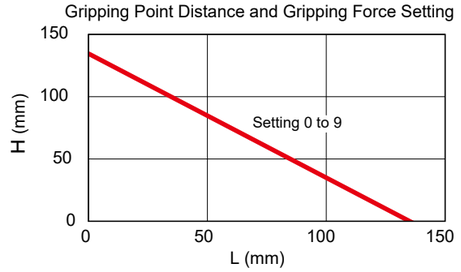


STEP3 Confirmation of Attachment Shape

Please use the gripping point distance within the range of the graph on the right.

Ex) L: 30 mm H: 20 mm





When DLSH-20 is selected, L: 30 mm, H: 20 mm intersection point of is inside the line of gripping force setting 0 to 9, so it can be used.

Please refer to P. 506.

● Please use attachments that are as light and short as possible. If they are long and heavy, the inertial force during opening and closing will be large, which may cause play in the fingers or accelerate wear on the finger sliding parts, adversely affecting the service life.
- Even if the attachment shape is within the performance data, making it as small as possible will allow the product to be used for a long time.
- The weight of the attachments affects the service life, so please keep it below the following.
  W < 1/4H (1 piece) W: Weight of attachment
  h: Product Weight-Finger Gripper

STEP4 Confirmation of External Force on Fingers

If external force is applied to the fingers, please use within the limits of [Table 1].

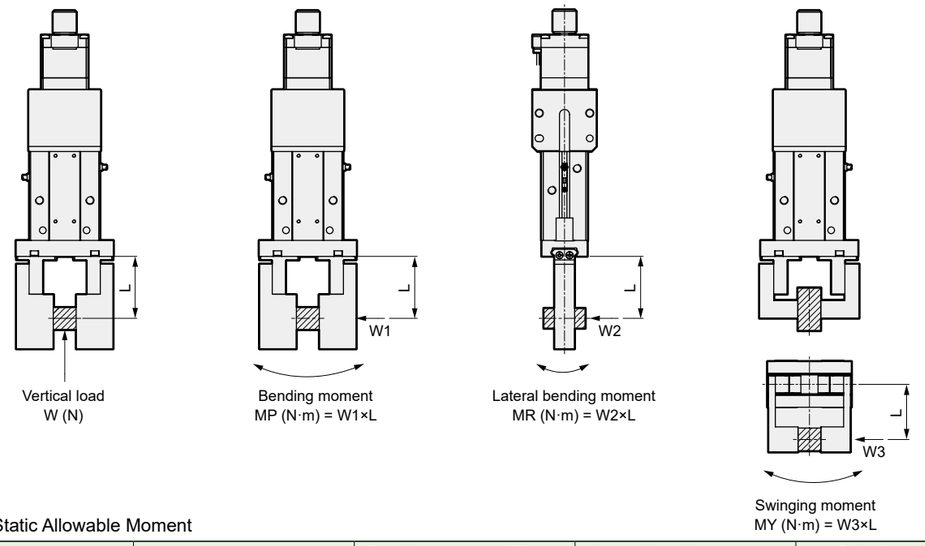


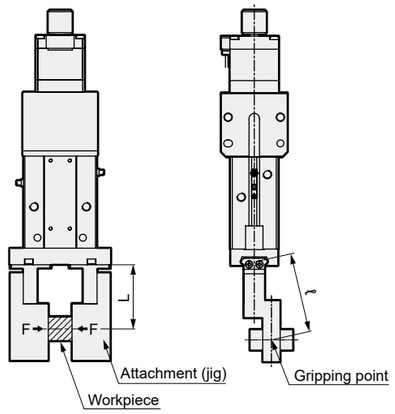
Table 1 Static Allowable Moment

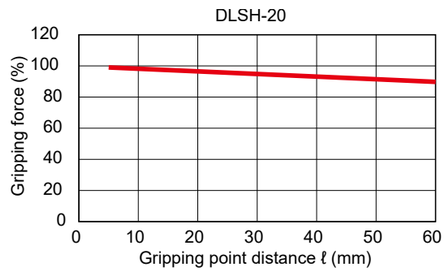
Size	Vertical Load Wmax (N)	Bending moment MPmax (N·m)	Lateral bending moment MRmax (N·m)	Swinging moment MYmax (N·m)
DLSH20	265	2.1	2.1 (40)	2.1
DLSH32	490	4.5	4.5 (90)	4.5

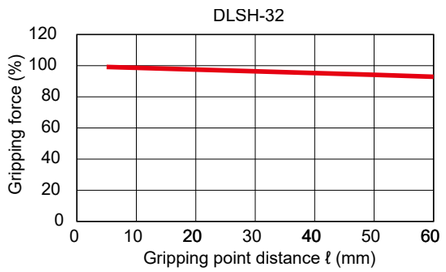
When multiple external forces are applied, the condition is that the resultant of the external forces (formula below) is less than 1.
WT = W/Wmax+MP/MPmax+MR/MRmax+MY/MYmax < 1
The lateral bending moment can also be used below (), but in that case, please use L and H dimensions that are 2/3 or less of the length specified on P. 506.
Calculation example)
Model No.: DLSH-20, L: 40 mm when a load W1: 30N is applied
MP = $30 \times 40 \times 10^{-3}$ = 1.2 N·m < MPmax = 2.1 N·m

Gripping force and gripping point distance

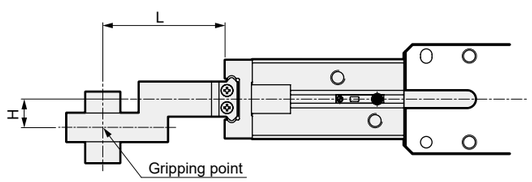
Indicates the gripping force at the gripping point distance ℓ.

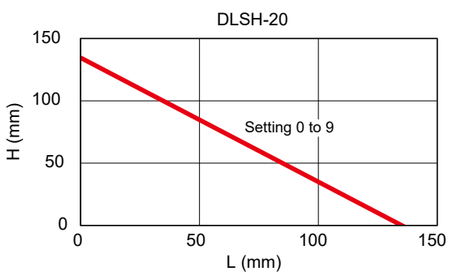


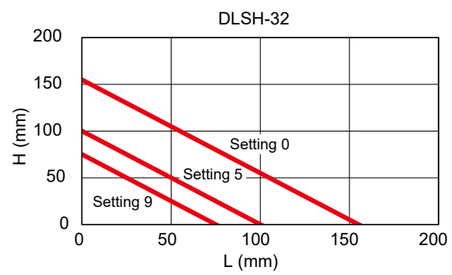




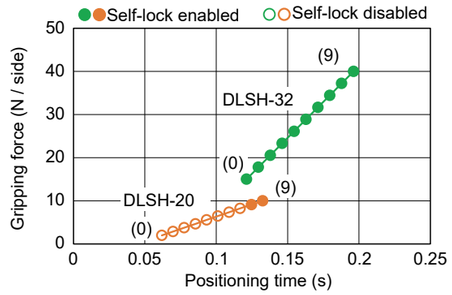
Gripping Point Distance and Gripping Force Setting







Positioning Time during Pushing Operation

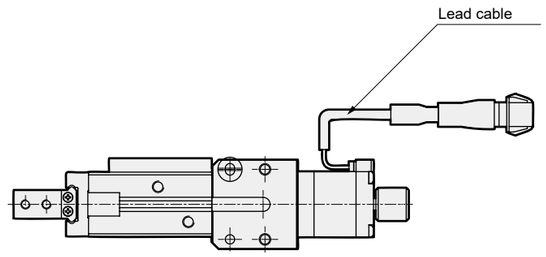


*1 ( ): Rotary switch 2 (gripping force) setting.
*2 The self-locking range is a reference value. Self-locking may not work depending on the conditions.
*3 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*4 This is for when pushing position = center of stroke, and rotary switch 1 (speed) setting = 9.
*5 Positioning time is the time from when the motor starts rotating until it stops.

Special Order Product*

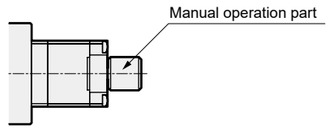
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

Electric Actuator with Motor Specification

DCKW

3-Finger Gripper Type

CONTENTS

Product Introduction 482
●Specifications, Model No. Notation, External Dimension Drawings
· DCKW-20 510
· DCKW-32 512
●Model Selection 514
⚠Precautions for Use 518
Model Selection Check Sheet 527

DCKW System Table

Actuator Model No.	Motor Size	Spring lead (mm)	Stroke (mm) and Max. Speed (mm/s)		Max. Gripping Force (N)
			4	8	
DCKW-20	□28	4.2	60		8
DCKW-32	□42	6		63	30

Electric Actuator 3-Finger Gripper Type

DCKW-20

□28 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DCKW - 20 S H4 04 N F3PH - F R1 A 1

❶Size
20	20

❷Connected Controller *1
S	ESC4

❸Spring Lead
H4	4.2 mm

❹Stroke
04	4 mm (2 mm one side)

❺Rubber Cover
N	None

❻Switch
NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❼Connector Outlet Direction
F	Front

❽Relay Cable *2
N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached
N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length
N	None
1	1 m
3	3 m
5	5 m
X	10 m

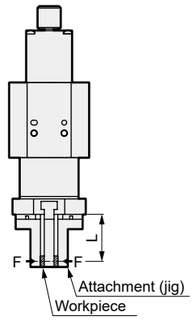
*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

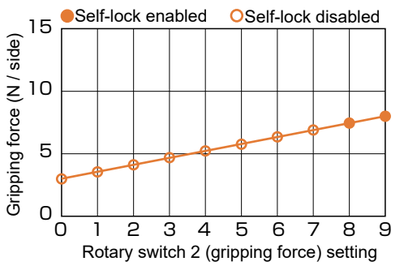
Specifications

Connected Controller	ESC4
Motor	□28 Stepping Motor
Drive Method	Cylindrical spring
Stroke mm	4 (one side 2)
Effective Pushing Range mm	2 (one side 1)
Max. Gripping Force *1 N	8 (per side)
Operating Speed Range mm/s	11 to 60
Max. Acceleration/Deceleration mm/s²	3879 (setting 9)
Gripping Speed Range mm/s	11 to 60
Repeatability *2 mm	±0.02
Insulation Resistance	10 MΩ, 500 VDC
Withstanding Voltage	500 VAC for 1 minute
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Protection Structure	IP40
Weight g	400

*1 Gripping is only possible in the closing direction. Performing a gripping operation in the opening direction may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.

Gripping force and rotary switch setting

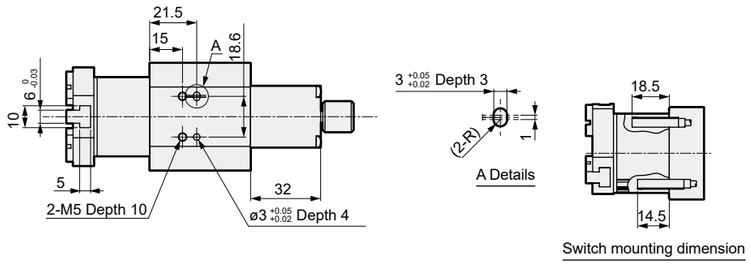


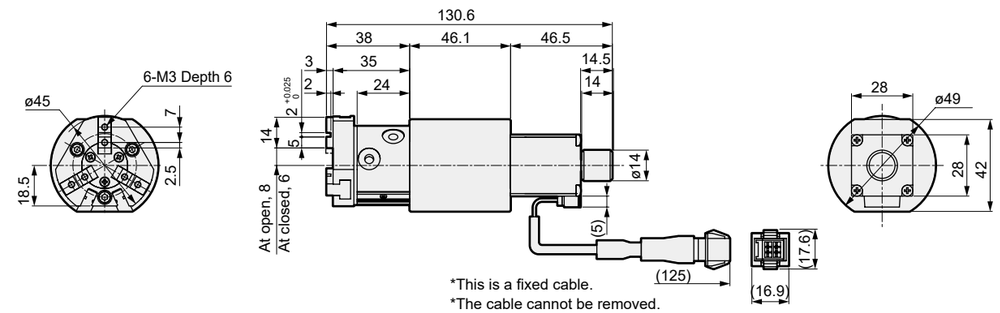


*1 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This is for speed setting 9 (41 mm/s). (L=20)
*3 Pushing position = stroke×0.5
*4 The self-locking range is a reference value. Self-locking may not work depending on the conditions.

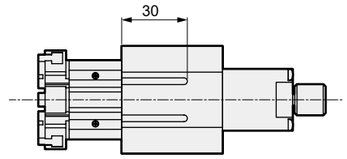
External Dimension Drawing

● DCKW-20





*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm



Electric Actuator 3-Finger Gripper Type

DCKW-32

□42 Stepping Motor

For compatible detailed model Nos., please see our website.

Model No. Notation Method

DCKW - 32 S H6 08 N F3PH - F R1 A 1

❶Size
32	32

❷Connected Controller *1
S	ESC4

❸Spring Lead
H6	6 mm

❹Stroke
08	8 mm (4 mm one side)

❺Rubber Cover
N	None

❻Switch
NNNN	None
F3PH	F-type straight type
F3PV	F-type L-shape type

❼Connector Outlet Direction
F	Front

❽Relay Cable *2
N0	None
R1	Flexible 1 m
R3	Flexible 3 m
R5	Flexible 5 m
RX	Flexible 10 m

❾Controller Attached
N	None
A	DIN rail mounting specification
B	Panel mounting specification

❿IO Cable Length
N	None
1	1 m
3	3 m
5	5 m
X	10 m

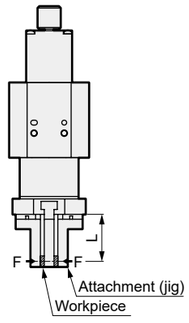
*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.

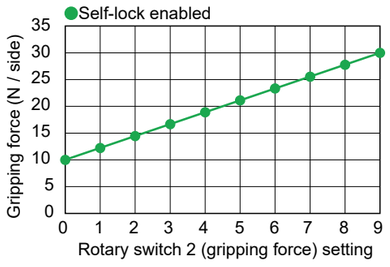
Specifications

Connected Controller	ESC4
Motor	□42 Stepping Motor
Drive Method	Cylindrical spring
Stroke mm	8 (one side 4)
Effective Pushing Range mm	4 (one side 2)
Max. Gripping Force *1 N	30 (per side)
Operating Speed Range mm/s	15 to 63
Max. Acceleration/Deceleration mm/s²	5471 (setting 9)
Gripping Speed Range mm/s	15 to 63
Repeatability *2 mm	±0.02
Insulation Resistance	10 MΩ, 500 VDC
Withstanding Voltage	500 VAC for 1 minute
Operating Ambient Temperature, Humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage Ambient Temperature, Humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Protection Structure	IP40
Weight g	1800

*1 Gripping is only possible in the closing direction. Performing a gripping operation in the opening direction may lead to damage to the internal parts of the actuator.
*2 Repeatability indicates the variation when the same workpiece is repeatedly gripped under the same operating conditions.

Gripping force and rotary switch setting

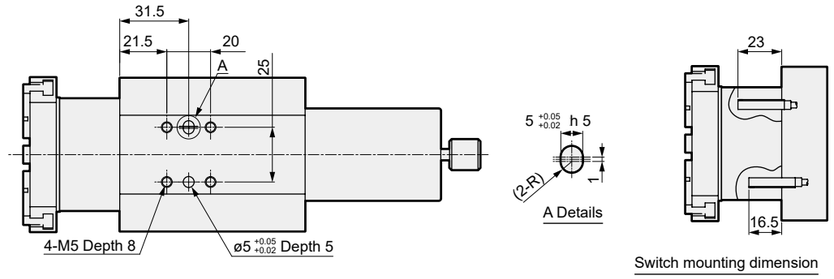


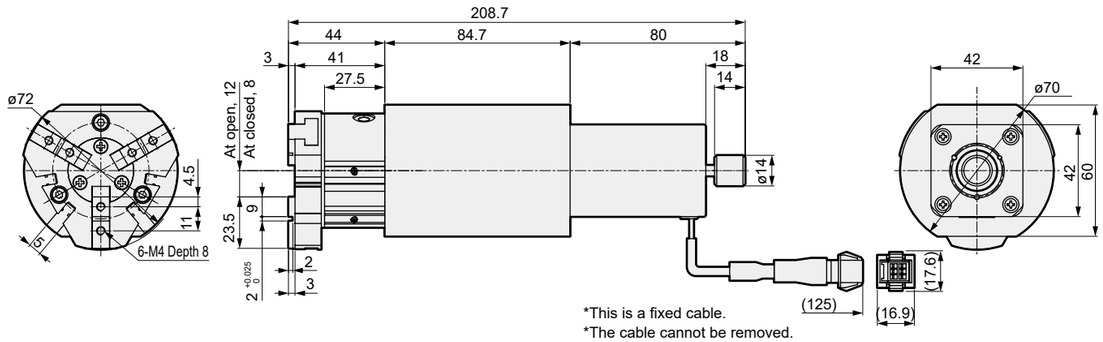


*1 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*2 This is for speed setting 9 (70 mm/s). (L=20)
*3 Pushing position = stroke×0.5
*4 The self-locking range is a reference value. Self-locking may not work depending on the conditions.

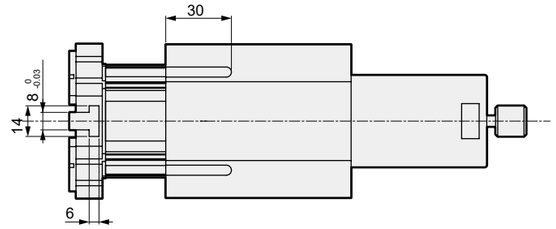
External Dimension Drawing

● DCKW-32





*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm



Model Selection

STEP1 Calculation of Required Gripping Force

To transport a workpiece (weight W_L), a gripping force F_W that satisfies the following formula is required.

$$F_W > \frac{W_L \times g \times K}{n}$$

F_W : Required gripping force [N]
n : Number of attachments = 3
W_L : Workpiece weight [kg]
g : Gravitational acceleration = 9.8 [m/s²]
K : Transport coefficient
5 [Holding only]
10 [Normal transport]
20 [Rapid acceleration transport]

About Conveyance Factor K

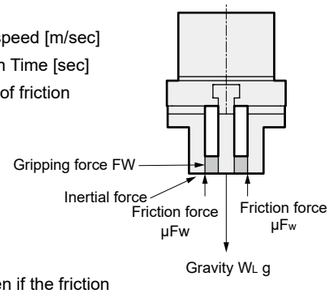
Calculation Example) When decelerating from a conveyance speed V = 0.75 m/s to stop in 0.1 seconds, with a friction coefficient μ of 0.1 between the workpiece and finger, it is as follows.

Determine the transport coefficient K from the force applied to the workpiece

V: Transport speed [m/sec]
t: Deceleration Time [sec]
μ: Coefficient of friction

• Inertial force = WL (V/t)
• Gravity = $W_L g$
• Required gripping force $F_W > \frac{W_L(V/t)+W_L g}{n\mu} = \frac{W_L(V/t+g)}{n\mu} = \frac{17.3W_L}{3\times0.1} = 57.7W_L$

∴ The transport coefficient K at this time is, from the above formula $\frac{V/t+g}{\mu g} = \frac{0.75/0.1+9.8}{0.1\times9.8} \approx 20$

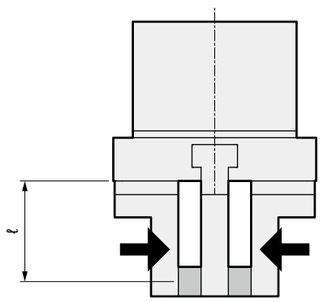


Note) The transport coefficient K needs to allow a margin for impacts during transport, etc. Even if the friction coefficient μ is higher than μ=0.1, for safety, please set the transport coefficient K to 10 to 20 or more.

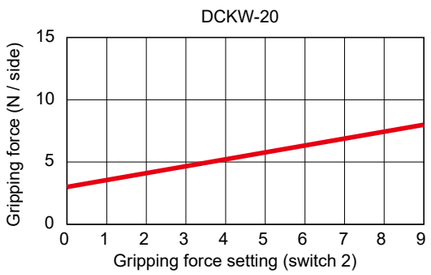
STEP2 Provisional selection of model from gripping force graph

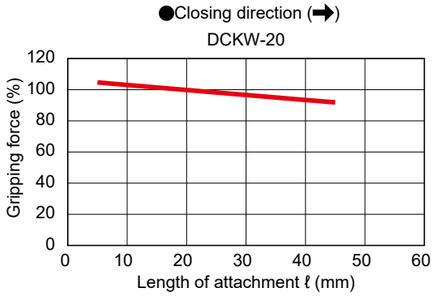
Confirm the conditions on the right and provisionally select a model from the gripping force graph. The gripping force changes depending on the gripping point distance ℓ and the gripping force setting. Please confirm that sufficient gripping force can be obtained under your conditions of use from the graph.

Gripping Direction

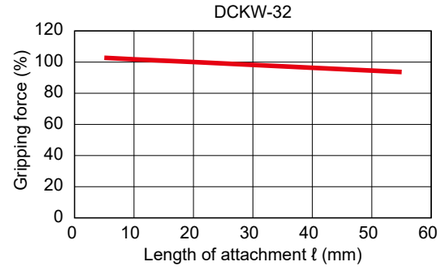


●Closing direction (➡)

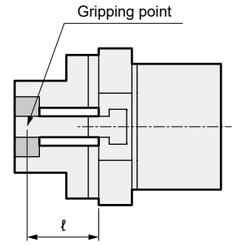




Gripping force and gripping point distance



STEP3 Confirmation of Attachment Shape

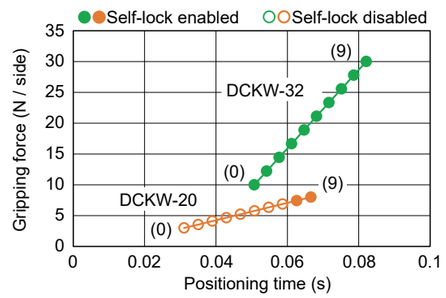


● Please use attachments that are as light and short as possible.
If they are long and heavy, the inertial force during opening and closing will be large, which may cause play in the fingers or accelerate wear on the finger sliding parts, adversely affecting the service life.

● Even if the attachment shape is within the performance data, making it as small as possible will allow the product to be used for a long time. Also, if ℓ is long, there is a risk of gripping errors, dropping during transport, etc., due to unexpected vibrations.

● The weight of the attachments affects the service life, so please keep it below the following.
W < 1/4H (1 piece) W: Weight of attachment
H: Gripper Product Weight

Positioning Time during Pushing Operation

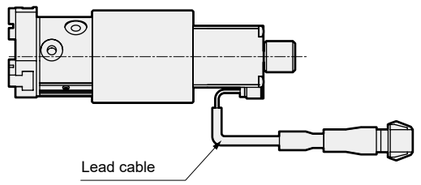


*1 ( ): Rotary switch 2 (gripping force) setting.
*2 The self-locking range is a reference value. Self-locking may not work depending on the conditions.
*3 The gripping force is a guideline. Errors will occur due to pushing position and cylinder switch adjustment.
*4 This is for when pushing position = center of stroke, and rotary switch 1 (speed) setting = 9.
*5 Positioning time is the time from when the motor starts rotating until it stops.

Special Order Product*

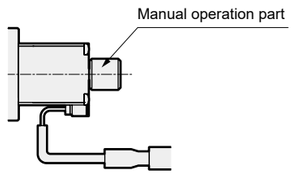
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

MEMO

D Series
DSSD2
DSTK
DSTG
DSTS
DSTL
DMSDG
DLSH
DCKW
Ending

To Use This Product Safely

Be sure to read this before use.
For general information on electric actuators, please see Intro 17.

Individual Precautions: Electric Actuator D Series

During Design and Selection

1. Common

Danger

■Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■Use the product within its specific specification range.

■Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■Do not use in places with impact or vibration.

■Do not apply a load to the product that exceeds the allowable value in the selection data.

■If there is a risk of danger to the human body, please install a protective cover.
If the drive part of the actuator may pose a danger to the human body, please install a protective cover. Please make the structure such that it is not possible to enter the drive range of the actuator or for the human body to directly touch that area.

■Take necessary measures in advance so that this product does not adversely affect people or things if it malfunctions.

Caution

■Please use within a range where the moving table and rod do not collide at the stroke end.

■The product is manufactured in accordance with various standards. Never disassemble or modify.

■Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
□20… 0.8A/base □28... 2A/base
□35… 3A/base □42... 3A/base
□56... 3A/base

■Please use the flexible cable with a bending radius of 39 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

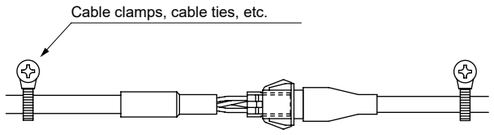
■Please use a cable of 10 m or less to connect to the IF connector.

■The detection range of the cylinder switch changes due to the influence of temperature and mounting. Please select a model with a margin for the stroke range.

■If the cylinder switch on the rod side comes into contact with the movable part, please select an L-shaped cylinder switch.

■When transporting or installing, do not hold the movable parts or cable parts of the product.
This can cause injury or disconnection.

■Do not move the cable coming out of the actuator. Please fix the cable part. In addition, please use the cable with a bending radius of 40 mm or more.



■Do not fix the cable coming out of the actuator in a taut state.
This may lead to damage to the internal parts of the actuator.

2. DSSD2 Series

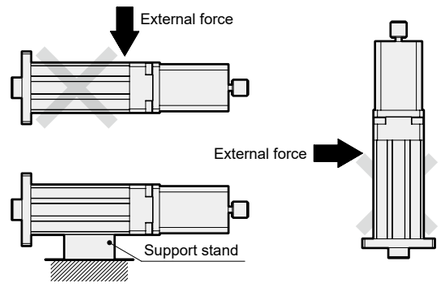
Caution

■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 control valve, etc., so that it does not pry at any position of the stroke.

■If the clearance between the clevis 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 case of flange (option) mounting, do not apply external force to the main body. External force may cause malfunction or component damage.
When mounting on the front in a horizontal installation, provide a support base. Depending on the operating conditions and the surrounding installation environment, vibrations may occur and cause damage to the actuator body. If external force is applied to the main body, use the mounting holes on the main body base to fix the main body. Avoid fixing only with the mounting holes on the flange part.

[In case of flange mounting]



3. DMSDG Series

Warning

■Self-locking may not work when not energized due to the amount of pushing, etc., so please perform a safety design that takes this into consideration.

■The workpiece may come off due to power outages, etc., so please incorporate a safety device that will not cause injury to people or damage to machinery.

Caution

■Do not use the actuator as a stopper.

4. DSTK Series

Caution

■When a load directly connected to an actuator, etc., is stopped midway by a stopper actuator.

● The operating range is only for stopping pallets on a conveyor. When stopping a load directly connected to a cylinder, etc., with a stopper cylinder, the cylinder thrust becomes a lateral load, so please select an actuator so that it is within the range of allowable absorption energy and allowable lateral load.

5. DLSH/DCKW Series

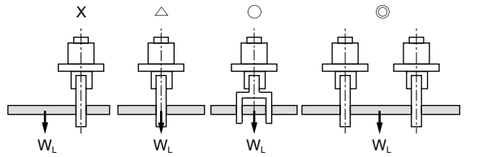
Warning

■The gripping force may decrease due to power outages, etc., so please perform a safety design that takes this into consideration. The gripping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device that will not cause injury to people or damage to machinery.

■Self-locking may not work when not energized due to the amount of gripping, etc., so please perform a safety design that takes this into consideration. The workpiece may come off due to power outages, etc., so please incorporate a safety device that will not cause injury to people or damage to machinery.

Caution

■When gripping long or large workpieces, gripping the center of gravity is a prerequisite for stable gripping, but it is also necessary to stabilize it by increasing the size or using multiple units.



◎: Excellent, ○:Good, △: Conditional, X: Not Applicable

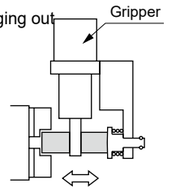
■The detection range of the cylinder switch changes due to the influence of temperature and mounting. Select a model with sufficient gripping force for the workpiece weight.

■Select a model with a sufficient opening/closing width for the size of the workpiece. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. Also, when opening from gripping operation, increase the stroke by the amount of backlash.

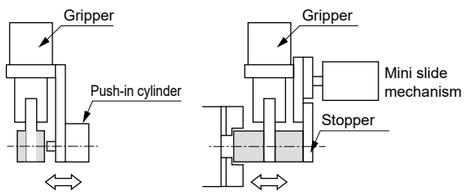
■When inserting a workpiece directly into a jig with a gripper, please design with clearance in mind. The gripper may also be damaged.

Gripper

●Pushing against a jig by springing out



●When using a push-in cylinder



Note) The workpiece is slid along the top of the attachment, so chuck life could drop markedly. Sufficient consideration must be given to the shape of the attachments.

6. Cylinder Switch

Warning

■Use outside the specified range of application, load current, voltage, temperature, impact, environment, etc., can cause destruction or malfunction, so please 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

■Avoid use in environments where water, etc., is constantly present.

● May cause malfunction due to insulation failure, etc.

■Avoid use in environments with oil or chemicals.

● Use in environments with various oils, coolant, cleaning fluids, or chemicals may adversely affect the cylinder switch (insulation failure, malfunction due to swelling of filling resin, hardening of lead wire coating, etc.), so please consult us.

■Do not use in environments with large impacts.

■Do not use in places where surge generation sources are present.

If there is equipment that generates large surges (electromagnetic lifters, high-frequency induction furnaces, motors, etc.) around the actuator with a solid-state switch, there is a risk of deterioration or damage to the switch's internal circuit elements, so please consider surge countermeasures at the source.

■Pay attention to accumulation of iron powder and close proximity of magnetic materials.

If a large amount of iron powder such as cutting chips or welding spatter accumulates around the actuator with a cylinder switch, or if a magnetic material (one that is attracted to a magnet) comes into close contact, the magnetic force inside the actuator may be lost, and the cylinder switch may no longer operate, so please be careful.

■Please be careful about the proximity of actuators to each other, etc.

● When using two or more cylinders with switches in parallel, please use them with the cylinder tube spacing at the values indicated for the allowable spacing for each actuator series. The switches may malfunction due to mutual magnetic interference.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

DSSD2 Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DSSD2
Basic Specifications	Max. Stroke: mm, Screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Speed switch setting: (mm/s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Payload: kg
	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to rod center ( )
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Controller	ESC4
Interface Specifications	Parallel I/O
Special Notes	

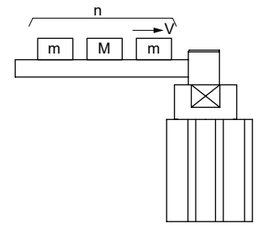
DSTK Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DSTK
Basic Specifications	Max. Stroke: mm, Screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Speed switch setting: (mm/s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Transport weight: kg STK-Figure 1 
	Transport speed: m/s
	Transfer Quantity: pcs.
	Material of transported item:
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Controller	ESC4
Interface Specifications	Parallel I/O
Special Notes	

DSTG/DSTS/DSTL Model Selection Checklist -> for **CKD** (Contact)

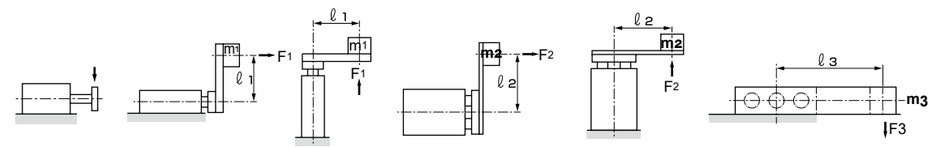
Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DSTG/DSTS/DSTL
Basic Specifications	Max. Stroke: mm, Screw lead: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Speed switch setting: (mm/s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Payload: kg External force on end plate:



Lateral load (Load: N)

Bending moment (Weight: kg) Distance: mm

Lateral bending moment (Weight: kg) Distance: mm

Torsional moment (Weight: kg) Distance: mm)

Stopper Use: None / Yes Transport weight: kg Transport speed: m/s Transfer Quantity: pcs.	Pushing load: None / Yes (N) During operation / When stopped Direction of force on plate center ( )

Operating Environment	Ambient Temperature: °C, Ambient Humidity: % Atmosphere:
Controller	ESC4
Interface Specifications	Parallel I/O
Special Notes	

DMSDG Model Selection Checklist -> for **CKD** (Contact)

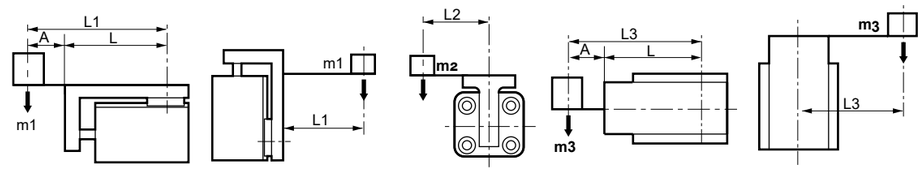
Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DMSDG
Basic Specifications	Max. Stroke: mm
Operating Conditions	Moving stroke: mm, travel time: s
	Speed switch setting: (mm/s)
	Pushing switch setting: (N)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other
	Payload: kg External force on table:



Bending moment (Weight: kg) Distance: mm)

Lateral bending moment (Weight: kg) Distance: mm)

Torsional moment (Weight: kg) Distance: mm)

	Pushing load: None / Yes (N) During operation / When stopped Direction of force applied to the table center ( )

Operating Environment	Ambient Temperature: °C, Ambient Humidity: % Atmosphere:
Interface Specifications	Parallel I/O
Special Notes	

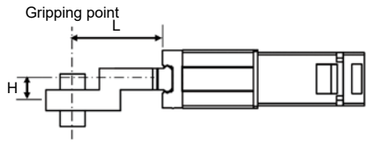
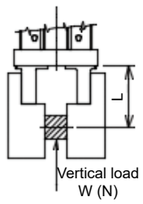
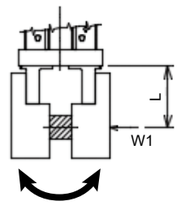
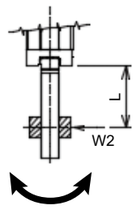
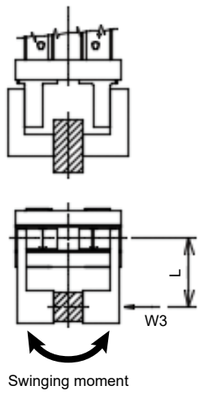
DLSH Series Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DLSH
Basic Specifications	Max. stroke (per side): mm
Operating Conditions	Stroke (per side): mm, travel time: s
	Gripping force switch setting: (one side N)
	Speed switch setting: (one side mm/s)
	Positioning Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Other
	Workpiece Weight: kg, workpiece material:
	Attachment quantity: Attachment material: Attachment weight: kg
	Attachment length: H: mm L: mm 
	External force on fingers: None / Yes  (Load: N)  Bending moment (Load: N, distance: mm)  Lateral bending moment (Load: N, distance: mm)  Swinging moment (Load: N, distance: mm)
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Interface Specifications	Parallel I/O
Special Notes	

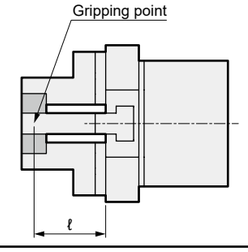
DCKW Series Model Selection Checklist -> for **CKD** (Contact)

Please fill out the form and send it to your nearest sales office. We will reply with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions:

Desired Model	DCKW
Basic Specifications	Max. stroke (per side): mm
Operating Conditions	Stroke (per side): mm, travel time s
	Gripping force switch setting: (one side N)
	Speed switch setting: (one side mm/s)
	Repeatability: ± mm
Load Conditions	Mounting orientation: Horizontal / Wall-mounted / Vertical / Other
	Workpiece Weight: kg, workpiece material:
	Attachment quantity: Attachment material: Attachment weight: kg
	Attachment length: ℓ: mm 
Operating Environment	Ambient Temperature: °C, Ambient Humidity: %
	Atmosphere:
Controller	ESC4
Interface Specifications	Parallel I/O
Special Notes	

Controller

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■ Multi-axis controller ECMG 535
■ Controller ECG-A 565
ECG-B 581
ECR 595
ESC4 611

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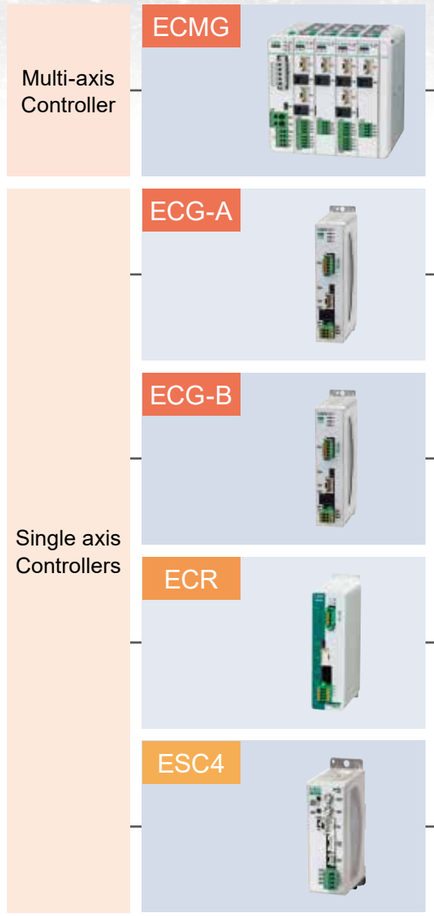
ECMG, ECG, ECR, ESC4 Series

Controller compatible with various actuators

Stepping motor controller overview

CKD offers single-axis and multi-axis controllers. Multi-axis controllers are particularly advantageous when used with 3 or more actuator axes. Please refer to the table below for the actuators compatible with each controller.

		Slider			Rod			Guided							Stopper		Table	Rotary	2-Finger Gripper			3-Finger Gripper	
		EJSG	EBS-G/M	EBR-G/M	GSSD2	DSSD2	GSTG	GSTS	GSTL		DSTG	DSTS	DSTL	DMSDG	GSTK	DSTK	FLCR	FGRC	FLSH	FFLD	DLSH	GCKW	DCKW
Multi-axis Controller	ECMG	●	●	●	●		●	●	●								●	●	●			●	
Single axis Controllers	ECG-A	●	●	●	●		●	●	●								●	●	●			●	
	ECG-B	●	●	●	●		●	●	●								●	●	●			●	
	ECR		●	●													●	●	●				
	ESC4				●						●	●	●	●									



* For products compatible with specific applications (for rechargeable battery production processes, food production processes, etc.), please check the "Component Products Digest (No. RJ-001AA)".

Controller Specifications and Functions List

Item		ECMG	ECG-A	ECG-B	ECR	ESC4
Max. number of operating axes		16 axes	1-axis			
Power supply voltage		24 VDC ±10%			24 VDC ±10% 48 VDC ±10%	24 VDC ±10%
Compatible motor size		□20 to □56	□35 to □56	□20 to □35	□20 to □56	
Configuration Tool	Software	S-Tools				-
	Connection cable	USB cable (mini-B)				-
Compatible encoder types		Battery-less absolute incremental		Incremental	Battery-less absolute incremental	-
Cooling method		Natural air cooling				
Insulation Resistance		10 MΩ or more at 500 VDC				
Withstanding Voltage		500 VAC for 1 minute				500 VAC for 1 minute
Operating Ambient Temperature		0 to 40°C no freezing				
Operating Ambient Humidity		35 to 80% RH no condensation				
Storage Ambient Temperature		-10 to 50°C no freezing				
Storage ambient humidity		35 to 80% RH no condensation				
Operating atmosphere		No corrosive gas, explosive gas, or dust				
Protection Structure		IP20		IP20		
DIMENSIONS *1 DIN rail mounting	PIO specifications	–	W35×H146×D76	W38×H159×D100.5	W40×H161×D100.5	W35×H120×D76
	Field network specifications	W110.4×H130×D110	W35×H159×D100.5			-
Weight *1 DIN rail mounting	PIO specifications	–	Approx. 210 g	Approx. 340 g	Approx. 430 g	Approx. 180 g
	Field network specifications	Approx. 1120 g	Approx. 340 g	Approx. 340 g	Approx. 430 g	-
Applicable laws and regulations	CE Marking	○	○	○	○	○
	RoHS2	○	○	○	○	○
Interface	PIO	–	○	○	○	○
	IO-Link	–	○	○	○	-
	CC-Link	Ver.1.10, 2.00	ver. 1.10	ver. 1.10	ver. 1.10	-
	EtherCAT	○	○	○	○	-
	EtherNet/IP	○	○	○	–	-
Function	Number of positioning points *2	64 points	64 points	64 points	512 points	-
	High payload mode *3	○	–	–	–	-
	Calendar function	○	–	–	○	-
	Warning function	○	○	○	○	○

*1. ECG-A, ECG-B, and ECR are values for 1-axis operation. ECMG is the value for 6-axis operation (3 drive units).

*2. Number of positioning points per axis.

*3. Only supports actuators EJSG, EBS-G, and EBR-G.

Controller
ECMG
ECG
ECR
ESC4
Ending

ECMG

Multi Axis Controller

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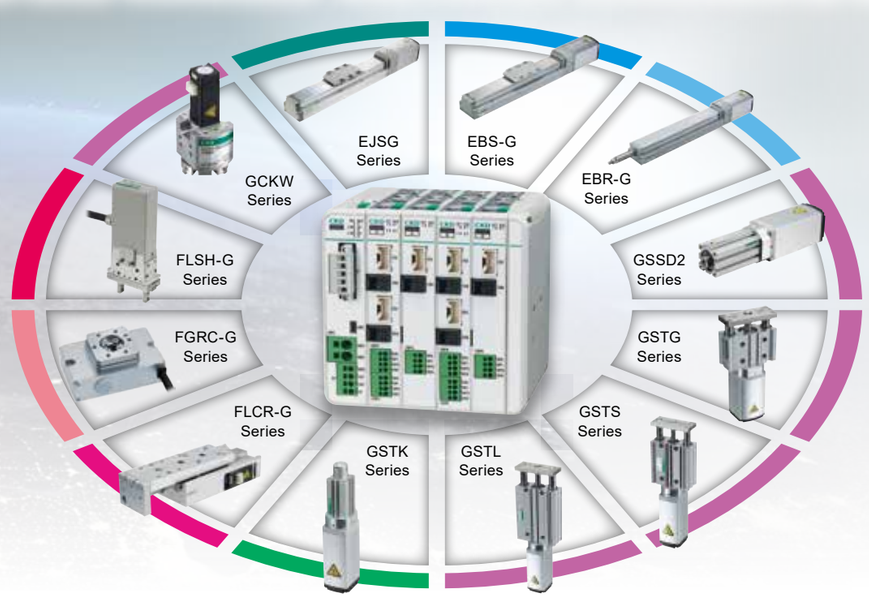
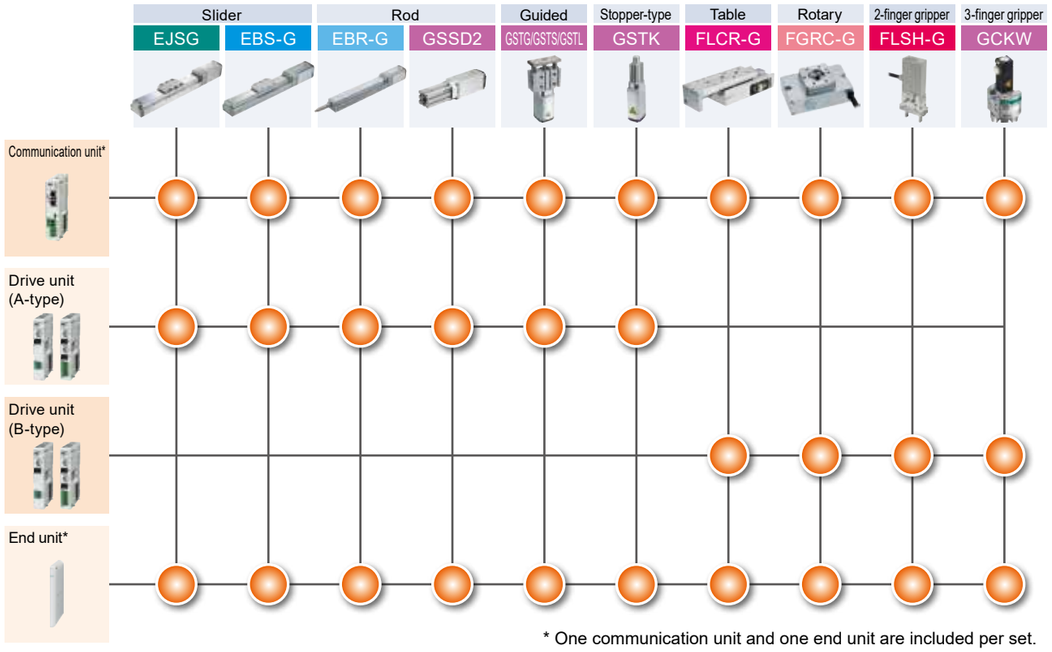
Multi Axis Controller **ECMG** Series

Multi-axis controller that can be connected to units



Connect up to 16 axes, contributing to space saving

List of Compatible Actuators

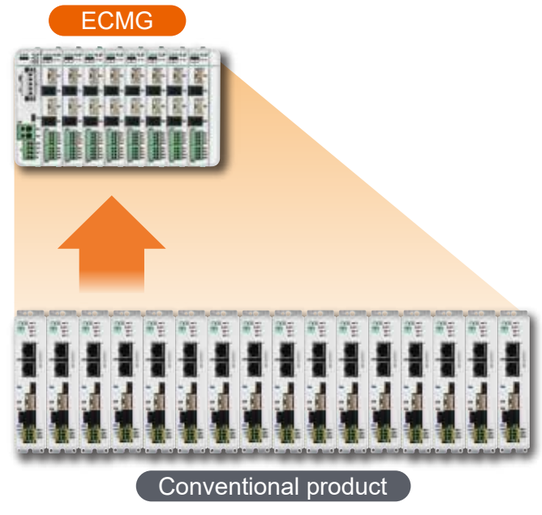


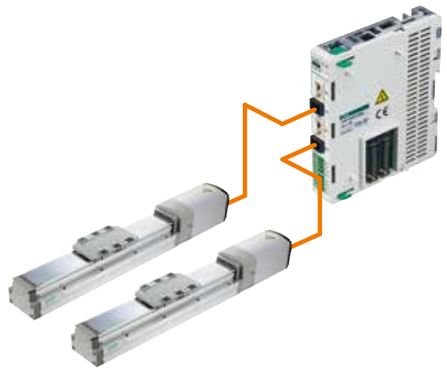
* One communication unit and one end unit are included per set.
Page 542 for details.

Space saving

Connect up to 16 actuators

Supports 2-axis connection per unit. Since 8 units can be connected, up to 16 axes can be connected.
Installation space can be significantly reduced compared to a single-axis controller.

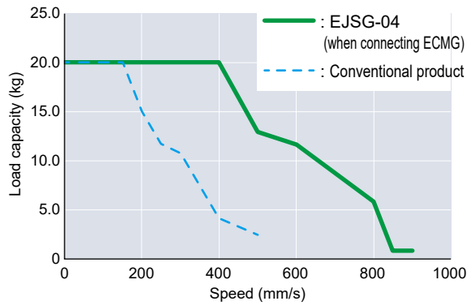




Space saving Productivity improved

Significant improvement in basic performance

Compared to conventional products, the payload and maximum speed have been greatly improved, and acceleration/deceleration also supports 1G. Since a small body size can cover a large load, downsizing of the actuator can be expected.
*Only when connecting EJSG, EBS/EBR-G

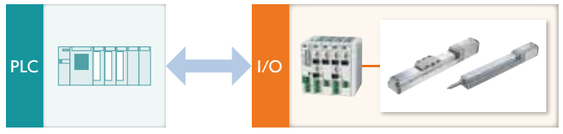


Payload Max. **5** times

Max. Speed Max. **2** times

Compatible Interface

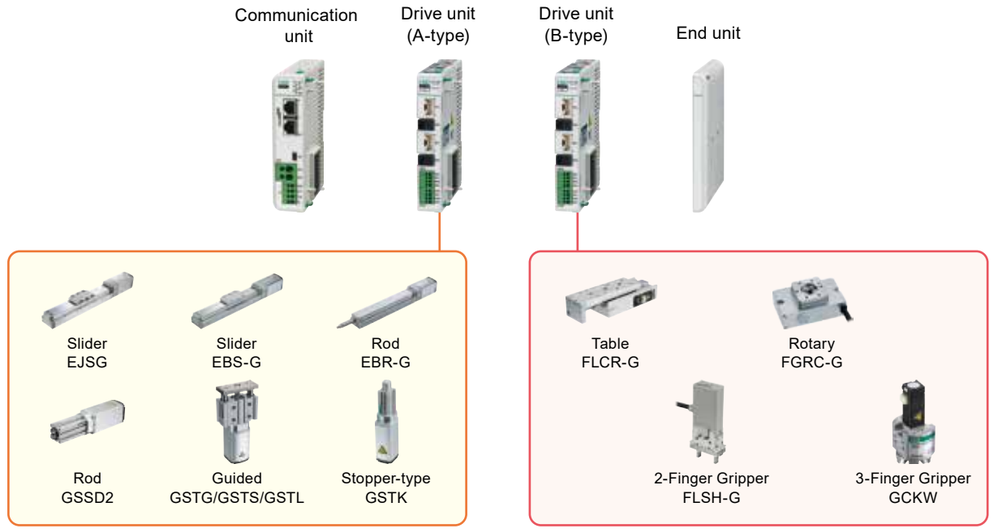
CC-Link EtherNet/IP EtherCAT



Commonization of drive units

Reduced design hours | Reduced man-hours | Reduced stock

Even actuators with different models, sizes, leads, and strokes can be operated with the same drive unit. It is possible to significantly reduce the man-hours for selection and ordering, as well as inventory. Since it is equipped with an automatic recognition function that reads actuator information, the initial setting man-hours can also be reduced.
*The automatic recognition function is only for the drive unit (A-type)



Refer to P. 540 for compatible actuators for each drive unit.

Supports 3 types of motive power supply methods

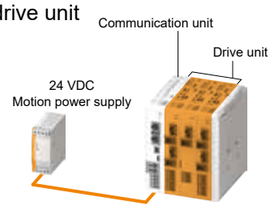
High versatility | Safety & Security

As the number of controller axes increases, the current consumption may exceed the limit. ECMG supports mixed wiring and individual wiring methods, and can be used regardless of the number of axes. The individual wiring method is safe because the motive power can be shut off for each axis.

Batch wiring method

Reduced wiring man-hours

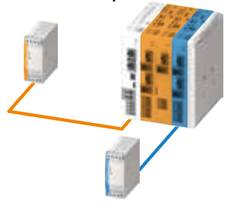
Batch supply of power from the communication unit to each drive unit



Mixed wiring method

No axis limit due to current value

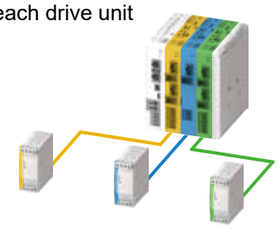
Separately supply motive power only to drive units with high current consumption



Individual wiring method

No axis limit due to current value, ensuring high safety

Directly supply motive power to each drive unit



Direct value mode to move to any position

High versatility | Supports IoT

It can be operated by directly instructing the position, speed, acceleration, deceleration, pushing force, etc., from a host device such as a PLC. The newly added standard direct value mode can control up to 16 axes. Furthermore, since point data can be rewritten from a host device, it is very convenient for setup changes.

Maximum connectable axes by operation mode

Field network	Operation Mode			
	PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
CC-Link	16 axes	16 axes	16 axes	10 axes
EtherCAT	16 axes	16 axes	16 axes	10 axes
EtherNet/IP	16 axes	16 axes	16 axes	10 axes

Configuration Tool "S-Tools" Free of Charge

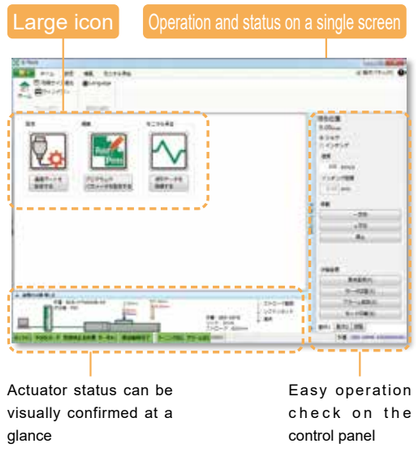
Easy adjustment

The dedicated configuration tool "S-Tools" is available free of charge on our website. It can be used with all ROBODEX Pulse Series products.

CKD YouTube Channel
Please check from your iPad or smartphone.

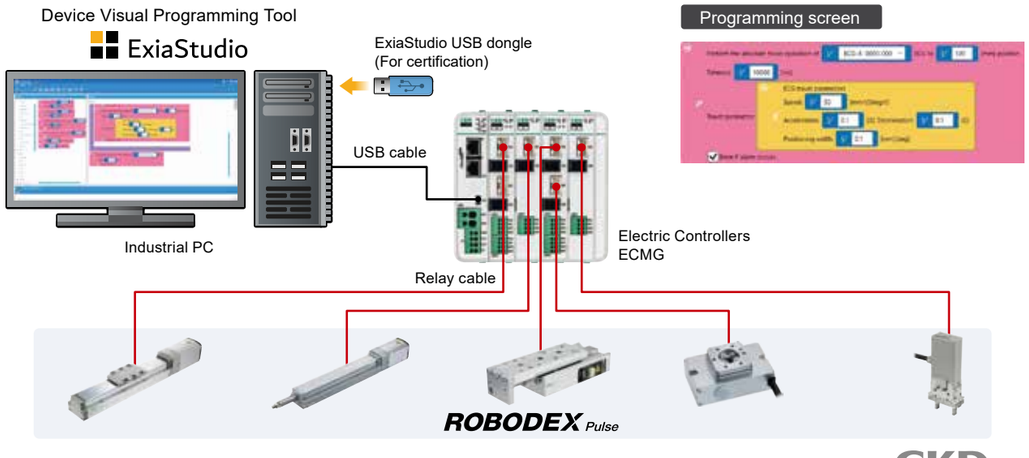
*May not display correctly depending on the smartphone's usage environment.

ECMG Setup Video Now Available!
ROBODEX
Quick Start Guide
(Multi Axis Controller)
ECMG Series
-Startup-

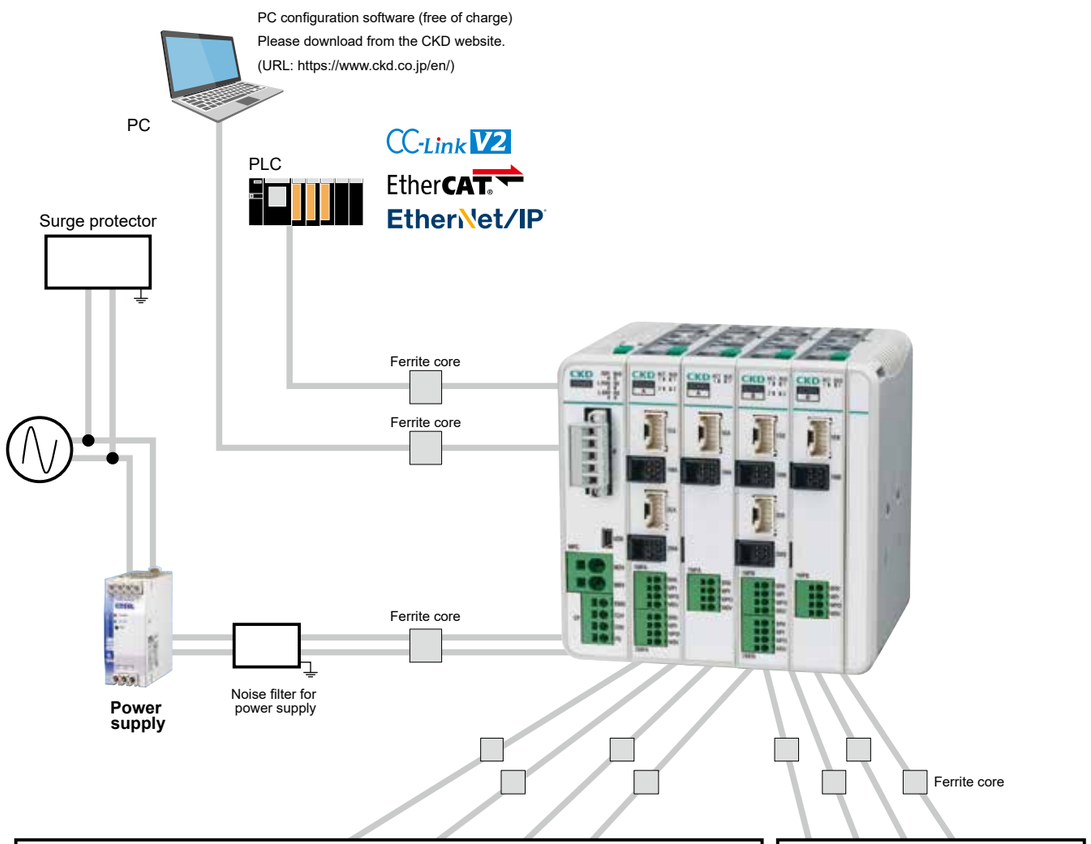


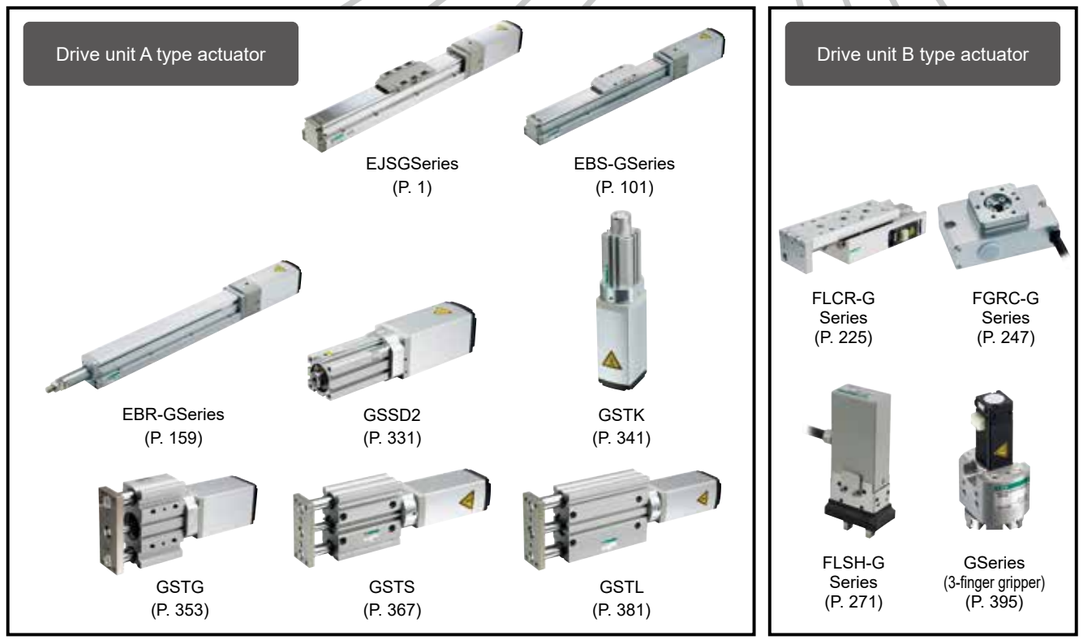
Compatible with Device Visual Programming Tool "ExiaStudio"

Compatible with "ExiaStudio", which allows for easy programming with intuitive operation without requiring specialized knowledge. Electric actuators can be easily controlled with direct values on a PC.



System Configuration





* EBS/EBR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.
* EBS/EBR-FPI (for food production processes) can only be connected to the ECR controller.
* FLCR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.

Description of each unit

● Communication unit (ECMG-CNN□30-□□D□□)

This is a unit that connects to a field network. It is possible to supply motive power and control power to other units. Install on the left end. For details, please refer to P. 542.

● Drive unit (ECMG-DNN□30-□□DNN)

This is a unit that drives an electric actuator. There are units that connect one axis to one drive unit and units that connect two axes. In addition, there are two types of drive units, A-type and B-type, and the actuators that can be connected are different. It is also possible to supply motive power directly to the drive unit. Up to 8 drive units can be connected per communication unit. For details, please refer to P. 548.

● End unit (ECMG-PNNN30-EACNN)

This is the terminating unit of the multi-axis controller. Install on the right end. Attached to the communication unit. For details, please refer to P. 542.

* A set model No. is not prepared. Orders are placed per unit.

Communication unit

ECMG-C Series

Unit that connects to a field network

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ECMG - C ❶ NN A ❷ 30 - CL ❸ D NN ❹

❶Unit type

C	Communication unit

❷End unit

A	Attached (standard end unit)
N	Not included

❸Interface Specifications

CL	CC-Link
EC	EtherCAT
EN	EtherNet/IP

❹Attached items *1

NN	None
1N	CC-Link communication connector 1 port
2N	CC-Link communication connector 2 ports

*1 If EC or EN is selected for the interface specification, select "NN"; if CL is selected, select "1N" or "2N".

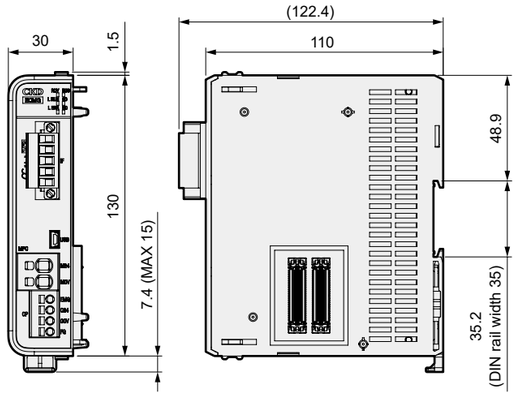
General Specifications

Item		Content						
Applicable Actuators		EJSG, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL			FLCR-G, FGRC-G, FLSH-G, GCKW			
Applicable Motor Size		□35	□42	□56	□20	□25	□25L	□35
Configuration Tool		PC configuration software (S-Tools), connection cable: USB cable (mini-B)						
External Interface	Field network specifications	CC-Link, EtherCAT, EtherNet/IP						
Power supply voltage	Control power supply, motive power supply	24 VDC ±10%						
Current Consumption	Control power supply (per unit)	0.4 A or less						
	Motive power supply (per axis) *1	3.4 A or less *2	4.2 A or less *3	4.5 A or less *4	0.5 A or less	0.9 A or less	1.6 A or less	1.1 A or less
Brake current consumption		0.4 A or less						
Insulation Resistance		10 MΩ or more at 500 VDC						
Dielectric Strength		500 VAC for 1 minute						
Operating Ambient Temperature		0 to 40°C no freezing						
Operating Ambient Humidity		35 to 80% RH no condensation						
Storage Ambient Temperature		-10 to 50°C no freezing						
Storage ambient humidity		35 to 80% RH no condensation						
Operating atmosphere		No corrosive gas, explosive gas, or dust						
Weight		Approx. 180 g						

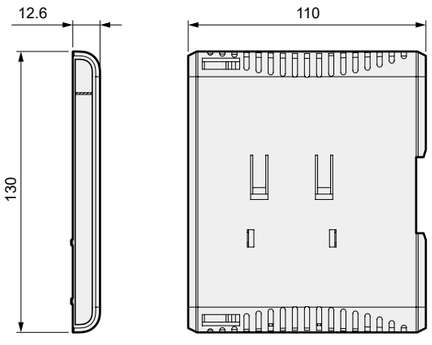
*1 For the motive power supply, in the case of a batch wiring system, the total must be 30 A or less.
*2 4.0A or less for EJSG and 1.8A or less for G Series (rod/stopper/guided).
*3 For G Series (rod, stopper, guided type), it will be 2.0 A or less.
*4 For G Series (rod, stopper, guided type), it will be 3.1 A or less.

External Dimension Drawing

● Communication unit



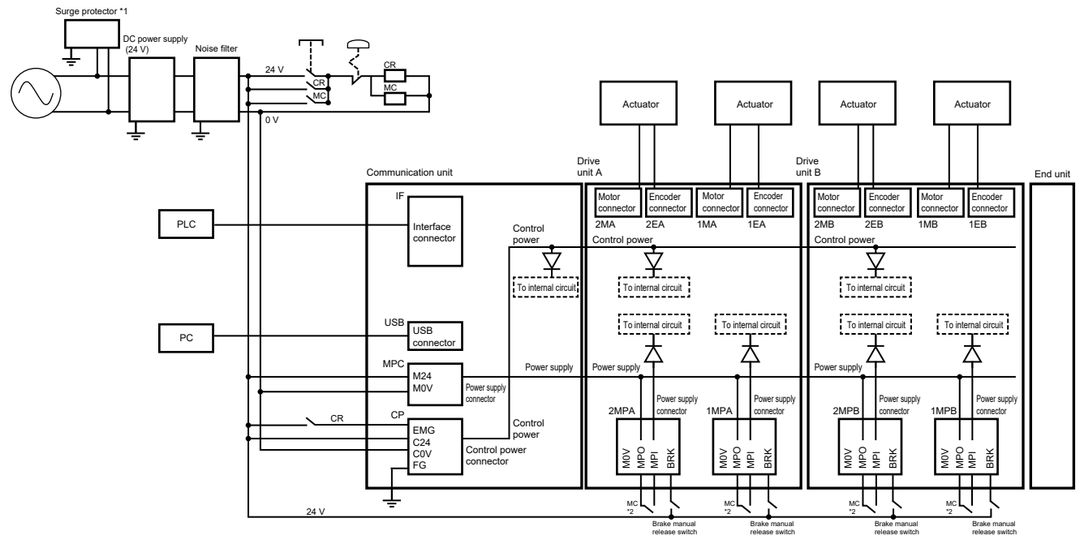
● End unit



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification.

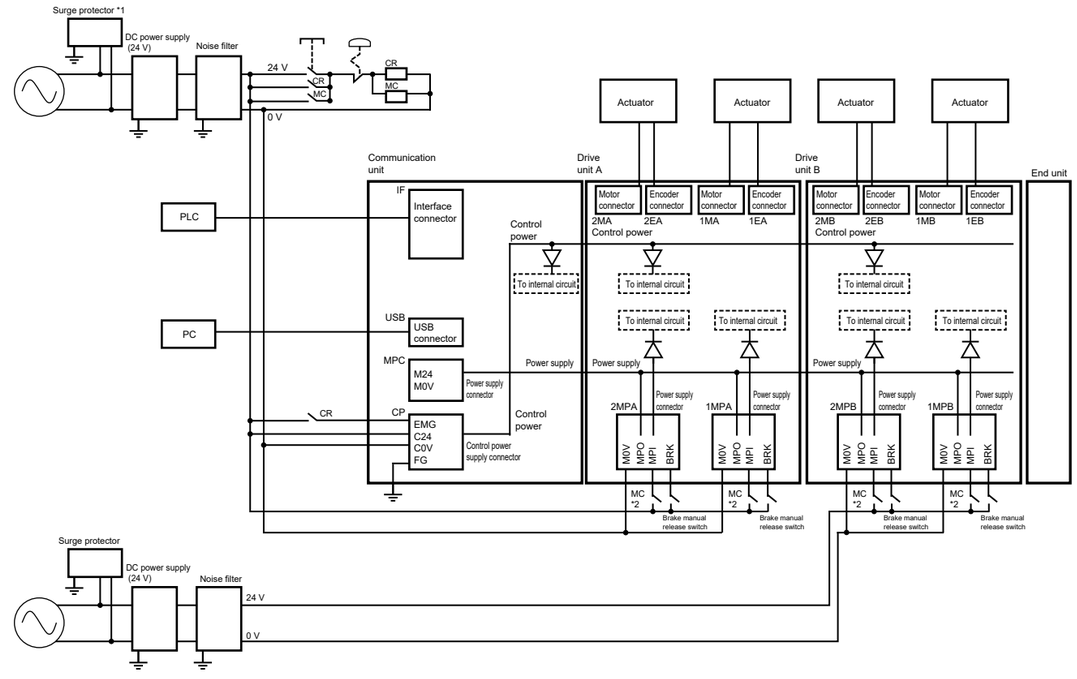
Connection Diagram

[Batch wiring method]



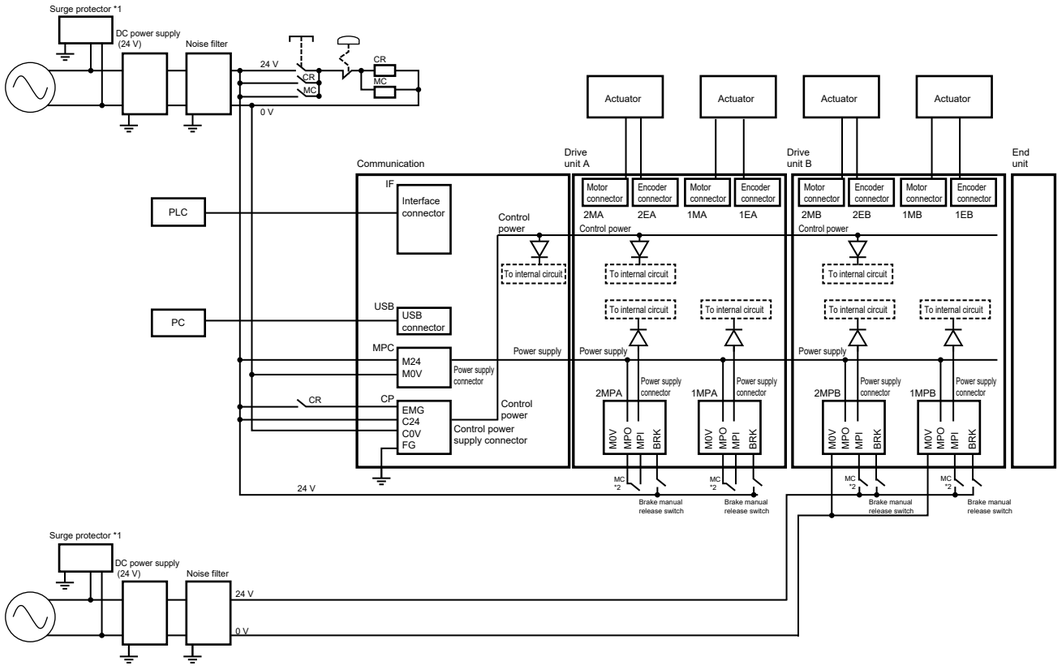
*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.
*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (At the time of shipment, a jumper wire connects MPI and MPO.)

[Individual wiring method]



*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.
*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the power supply and the MPI terminal. (At the time of shipment, a jumper wire connects MPI and MPO.)

[Mixed wiring method]



*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.

*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals for batch wiring, or between the power supply and the MPI terminal for individual wiring. (At the time of shipment, a jumper wire connects MPI and MPO.)

Maximum connectable axes by operation mode

Field network	Operation Mode			
	PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
CC-Link	16 axes	16 axes	16 axes	10 axes
EtherCAT	16 axes	16 axes	16 axes	10 axes
EtherNet/IP	16 axes	16 axes	16 axes	10 axes

Description of field network operation modes

Operation Mode	Overview
PIO	Point operation can be used, and the I/O signal assignment can be changed in operation mode (PIO). However, direct value operation, which sets the operating conditions during operation directly from the PLC, cannot be selected. Point data and parameters can be read and written, but the monitor function cannot be used. For detailed items, please refer to the table below.
Simple Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. Point data and parameters can be read and written, and the monitor function can also be used with restrictions. For detailed items, please refer to the table below.
Standard Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC with restrictions and operated. Point data and parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.
Full Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC and operated. Point data and parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.

Operation Mode		PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
Read/write point data		Yes	Yes	Yes	Yes
Read/Write parameters		Yes	Yes	Yes	Yes
Direct Value Travel Selection *1		Not selectable	Yes	Yes	Yes
Number of positioning points		64	Unlimited	Unlimited	Unlimited
Direct Value Travel Item *2	Target Position	–	○	○	○
	Positioning Width	–	–	○	○
	Speed	–	–	○	○
	Acceleration	–	–	○	○
	Deceleration	–	–	○	○
	Pushing Rate	–	–	○	○
	Pushing Distance	–	–	△	○
	Pushing Speed	–	–	○	○
	Gain magnification	–	–	*4	○
	Positioning Method	–	–	○	○
	Operation Method	–	–	○	○
	Stopping Method	–	–	○	○
	Acceleration/ Deceleration Method	–	–	○	○
Monitor Item *3	Position	–	○	○	○
	Speed	–	▲	○	○
	Current	–	▲	○	○
	Alarm Code	–	▲	○	○

*1: If direct value travel is not selected, it will operate with the value set in the point data. Therefore, the number of positioning points is up to 64.

*2: ○ indicates items that operate with values set from the PLC. - operates with the value set in the point data. △ operates with the value set in the common parameters.

*3: ○ indicates items that can be monitored. - indicates items that cannot be monitored. ▲ indicates items that can be monitored by selecting from ▲ (only one item can be monitored).

*4: Gain magnification is invalid.

CC-Link Specifications

[Communication Specifications]

Item	Specifications
CC-Link Version	Ver. 1.10, Ver. 2.00
Station type	Remote device station
Remote station number	1 to 64 (set by parameter setting)
Remote I/O (RX, RY)	128 points each (fixed regardless of operation mode)
Remote register (RWr, RWw)	Sum of the number of words corresponding to the operation mode for each axis (max. 128 words each) PIO mode: 2 words each Simple direct value mode: 4 words each Standard direct value mode: 8 words each Full Direct Value Mode: 12 words each
Number of occupied stations *1	1 to 4 (set by parameter setting) ver. 1.10 4 stations occupied Remote I/O : Up to 128 points *2 Remote register: Up to 16 words each ver. 2.00 1 stations occupied Remote I/O : Up to 128 pts. each Remote register: Up to 32 words each 2 stations occupied Remote I/O : Up to 384 points each Remote register: Up to 64 words each 3-station occupancy Remote I/O : Up to 640 points each Remote register: Up to 96 words each 4 stations occupied Remote I/O : Up to 896 points each Remote register: Up to 128 words each
Communication speed	10 M / 5 M / 2.5 M / 625 k / 156 kbps (set by parameter setting)
Extended cyclic setting	ver. 1.10 - ver. 2.00 1x/2x/4x/8x
Connection cable	CC-Link Ver. 1.10 compatible cable (Shielded 3-core twisted pair cable)
Monitor function	Position, speed, current, alarm

*1 The maximum number of remote output points and the maximum number of remote register words when selecting the number of occupied stations are listed.
*2 When using ver.1.10, select 4 stations to be occupied.

Cyclic data from master

Device No.		Full Direct Value Mode
		Signal name
RYn	0 to A	–
	B	Communication unit alarm reset
	C to F	–
RY (n+1)	0 to F	–
RY (n+2)	0 to F	Write data
RY (n+3)	0 to F	
RY (n+4)	0 to F	Data number
RY (n+5)	0 to F	
RY (n+6)	0 to 3	–
	4	Data request
	5	Data R/W selection
	6 to 7	–
	8 to F	Data R/W target designation
RY (n+7)	0 to F	–

Device No.		Full Direct Value Mode
		Signal name
RWw0	0 to 5	Point number selection bits 0 to 5
	6	Point move start
	7	JOG/INCH (-) move start
	8	JOG/INCH (+) move start
	9	Homing Start
	A	Servo ON
	B	Alarm Reset
	C	Stop #
	D	Direct Value Travel Selection
	E	INCH Selection
	F	–
RWw1	0 to F	Mode (direct value travel)
RWw2	0 to F	Position (direct value travel)
RWw3	0 to F	
RWw4	0 to F	Positioning width (direct value travel)
RWw5	0 to F	Speed (direct value travel)
RWw6	0 to 7	Acceleration (direct value travel)
	8 to F	Deceleration (direct value travel)
RWw7	0 to 7	Pushing rate (direct value travel)
	8 to F	Pushing speed (direct value travel)
RWw8	0 to F	Pushing distance (direct value travel)
RWw9	0 to F	
RWwA	0 to F	Gain magnification (direct value travel)
RWwB	0 to F	–

Cyclic data from controller

Device No.		Full Direct Value Mode
		Signal name
RXn	0	Temperature abnormality (warning)
	1	Inter-unit communication status 1
	2	Inter-unit communication status 2
	3 to 7	–
	8	Communication unit status
	9 to A	–
	B	Communication unit alarm status
	C to F	–
RX (n+1)	0 to F	Axis link status
RX (n+2)	0 to F	Read data
RX (n+3)	0 to F	
RX (n+4)	0 to F	Data (alarm)
RX (n+5)	0 to F	
RX (n+6)	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to F	–
RX (n+7)	0 to F	–

Device No.		Full Direct Value Mode
		Signal name
RWr0	0 to 5	Point move confirmation bits 0 to 5
	6	Point move complete
	7	Select output 1
	8	Select output 2
	9	Homing complete
	A	Servo ON state
	B	Alarm #
	C	Ready to operate
	D	Direct value travel state
	E	–
	F	–
RWr1	0 to F	–
RWr2	0 to F	Position (monitor value)
RWr3	0 to F	
RWr4	0 to F	Speed (monitor value)
RWr5	0 to F	Current (monitor value)
RWr6	0 to F	–
RWr7	0 to F	Alarm code (monitor value)
RWr8	0 to F	–
RWr9	0 to F	–
RWrA	0 to F	–
RWrB	0 to F	–

* The signal configuration for a single axis is shown. Since the device No. is determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

EtherCAT Specifications

[Communication Specifications]

Item	Specifications
Communication speed	100 Mbps (Fast Ethernet, full-duplex)
Process data	Variable PDO mapping
Max. PDO data length	RxPDO: 272 bytes TxPDO: 272 bytes
Station alias	0 to 65535 (set by parameter)
Connection cable	EtherCAT compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Node address	Master automatically assigns
Monitor function	Position, speed, current, alarm

Cyclic data from master

INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2001	0x01	0 to 10	–
		11	Communication unit alarm reset
		12 to 31	–
	0x02	0 to 31	Write data
	0x03	0 to 31	Data number
	0x04	0 to 3	–
		4	Data request
		5	Data R/W selection
		6 to 7	–
		8 to 15	Data R/W target designation
		16 to 31	–
0x2003	0x01	0 to 5	Point number selection bits 0 to 5
		6	Point move start
		7	JOG/INCH (-) move start
		8	JOG/INCH (+) move start
		9	Homing Start
		10	Servo ON
		11	Alarm Reset
		12	Stop #
		13	Direct Value Travel Selection
		14	INCH Selection
		15	–
		16 to 31	Mode (direct value travel)
	0x02	0 to 31	Position (direct value travel)
	0x03	0 to 15	Positioning width (direct value travel)
		16 to 31	Speed (direct value travel)
	0x04	0 to 7	Acceleration (direct value travel)
		8 to 15	Deceleration (direct value travel)
		16 to 23	Pushing rate (direct value travel)
		24 to 31	Pushing speed (direct value travel)
	0x05	0 to 31	Pushing distance (direct value travel)
	0x06	0 to 15	Gain magnification (direct value travel)
		16 to 31	–

Cyclic data from controller

INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2005	0x01	0	Temperature abnormality (warning)
		1	Inter-unit communication status 1
		2	Inter-unit communication status 2
		3 to 7	–
		8	Communication unit status
		9	–
		10	–
		11	Communication unit alarm status
		12 to 15	–
		16 to 31	Axis link status
	0x02	0 to 31	Read data
	0x03	0 to 31	Data (alarm)
	0x04	0 to 3	Data response
		4	Data complete
		5	Data write status
		6 to 31	–
0x2007	0x01	0 to 5	Point move confirmation bits 0 to 5
		6	Point move complete
		7	Select output 1
		8	Select output 2
		9	Homing complete
		10	Servo ON state
		11	Alarm #
		12	Ready to operate
		13	Direct value travel state
		14 to 31	–
	0x02	0 to 31	Position (monitor value)
	0x03	0 to 15	Speed (monitor value)
		16 to 31	Current (monitor value)
	0x04	0 to 15	–
		16 to 31	Alarm code (monitor value)
	0x05	16 to 31	–
	0x06	16 to 31	–

* The signal configuration for a single axis is shown. Since the Index and Sub Index are determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

EtherNet/IP Specifications

[Communication Specifications]

Item	Specifications
Communication protocol	EtherNet/IP
Communication speed	Automatic setting (100 Mbps/10 Mbps, full-duplex/ half-duplex)
Number of occupied bytes	Input: 272 bytes Output: 272 bytes
IP address	Setting by parameter (0.0.0.0 to 255.255.255.255) Via DHCP server (any address)
RPI (Packet interval)	4 ms to 10000 ms
Connection cable	EtherNet/IP compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Monitor function	Position, speed, current, alarm

Cyclic data from master

Byte	bit	Full Direct Value Mode
		Signal name
0	0 to 7	–
1	0 to 2	–
	3	Communication unit alarm reset
	4 to 7	–
2 to 3	0 to 7	–
4 to 5	0 to 7	Write data
6 to 7	0 to 7	
8 to 9	0 to 7	Data number
10 to 11	0 to 7	
12	0 to 3	–
	4	Data request
	5	Data R/W selection
	6 to 7	–
13	0 to 7	Data R/W target designation
14 to 15	0 to 7	–
16	0 to 5	Point number selection bits 0 to 5
	6	Point move start
	7	JOG/INCH (-) move start
17	0	JOG/INCH (+) move start
	1	Homing Start
	2	Servo ON
	3	Alarm Reset
	4	Stop #
	5	Direct Value Travel Selection
	6	INCH Selection
	7	–
18 to 19	0 to 7	Mode (direct value travel)
20 to 21	0 to 7	Position (direct value travel)
22 to 23	0 to 7	
24 to 25	0 to 7	Positioning width (direct value travel)
26 to 27	0 to 7	Speed (direct value travel)
28	0 to 7	Acceleration (direct value travel)
29	0 to 7	Deceleration (direct value travel)
30	0 to 7	Pushing rate (direct value travel)
31	0 to 7	Pushing speed (direct value travel)
32 to 33	0 to 7	Pushing distance (direct value travel)
34 to 35	0 to 7	
36 to 37	0 to 7	Gain magnification (direct value travel)
38 to 39	0 to 7	–

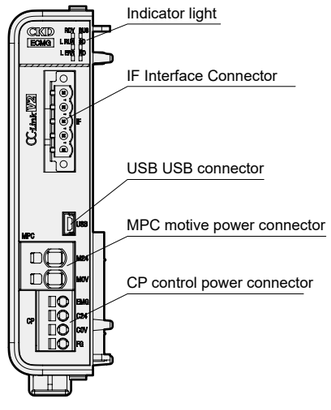
Cyclic data from controller

Byte	bit	Full Direct Value Mode
		Signal name
0	0	Temperature abnormality (warning)
	1	Inter-unit communication status 1
	2	Inter-unit communication status 2
	3 to 7	–
1	0	Communication unit status
	1 to 2	–
	3	Communication unit alarm status
	4 to 7	–
2 to 3	0 to 7	Axis link status
4 to 5	0 to 7	Read data
6 to 7	0 to 7	
8 to 9	0 to 7	Data (alarm)
10 to 11	0 to 7	
12	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to 7	–
13	0 to 7	–
14 to 15	0 to 7	–
16	0 to 5	Point move confirmation bits 0 to 5
	6	Point move complete
	7	Select output 1
17	0	Select output 2
	1	Homing complete
	2	Servo ON state
	3	Alarm #
	4	Ready to operate
	5	Direct value travel state
	6 to 7	–
18 to 19	0 to 7	–
20 to 21	0 to 7	Position (monitor value)
22 to 23	0 to 7	
24 to 25	0 to 7	Speed (monitor value)
26 to 27	0 to 7	Current (monitor value)
28 to 29	0 to 7	–
30 to 31	0 to 7	Alarm code (monitor value)
32 to 39	0 to 7	–

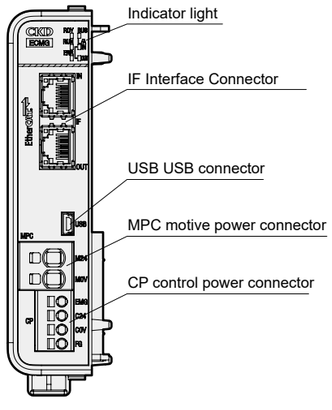
* The signal configuration for a single axis is shown. Since the number of bytes is determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

[Panel Description]

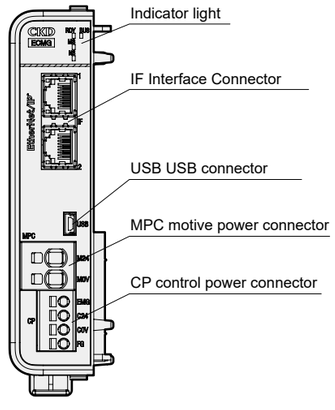
CC-Link



EtherCAT



EtherNet/IP



● Attached items

Product Name		
CC-Link communication connector 1 port	MSTB2.5/5-STF-5.08ABGYAU	PHOENIX CONTACT
CC-Link communication connector 2 ports	TFKC2.5/5-STF-5.08AU	PHOENIX CONTACT

Drive unit

ECMG-D Series

Unit that drives an electric actuator

For compatible detailed model Nos., please see our website.

Model No. Notation Method

● A-type

ECMG - D NNR30 - A2 DNN

❶ ❷

❶Unit type	
D	Drive unit

❷Drive unit specifications	*1
A1	A-type 1-axis
A2	A-type 2-axis

● B-type

ECMG - D NNN30 - B2 DNN

❶ ❷

❶Unit type	
D	Drive unit

❷Drive unit specifications	*1
B1	B-type 1-axis
B2	B-type 2-axis

*1 Compatible actuators differ depending on the drive unit specifications. For details, please refer to the table below.

Actuator \ Controller	ECMG		ECG-A	ECG-B	ECR
	A-type	B-type			
EBS-M					●
EBR-M					●
EBS-G	●		●		
EBR-G	●		●		
EJSG	●		●		
FLSH					●
FLCR					●
FGRC					●
FLSH-G		●		●	
FLCR-G		●		●	
FGRC-G		●		●	
GSSD2	●		●		
GSTK	●		●		
GSTG	●		●		
GSTS	●		●		
GSTL	●		●		
GCKW		●		●	

* EBS/EBR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.
* EBS/EBR-FPI (for food production processes) can only be connected to the ECR controller.
* FLCR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.

General Specifications

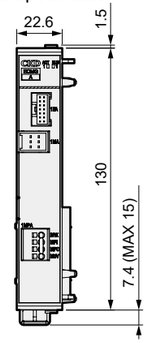
Item	Content						
Drive unit specifications	A-type 1-axis/2-axis			B-type 1-axis/2-axis			
Applicable Actuators	EJSG, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL			FLCR-G, FGRC-G, FLSH-G, GCKW			
Applicable Motor Size	□35	□42	□56	□20	□25	□25L	□35
Configuration tool, external interface	By communication unit						
Power supply voltage / Motive power supply	24 VDC ±10%						
Current Consumption / Motive power supply (per axis) *1	3.4 A or less *2	4.2 A or less *3	4.5 A or less *4	0.5 A or less	0.9 A or less	1.6 A or less	1.1 A or less
Brake current consumption	0.4 A or less						
Insulation Resistance	10 MΩ or more at 500 VDC						
Dielectric Strength	500 VAC for 1 minute						
Operating Ambient Temperature	0 to 40°C no freezing						
Operating Ambient Humidity	35 to 80% RH no condensation						
Storage Ambient Temperature	-10 to 50°C no freezing						
Storage ambient humidity	35 to 80% RH no condensation						
Operating atmosphere	No corrosive gas, explosive gas, or dust						
Protection Structure	IP20						
Weight	Approx. 295 g						

* Does not support synchronous control or circular interpolation.
*1 For the motive power supply, in the case of a batch wiring system, the total must be 30 A or less.
*2 4.0A or less for EJSG and 1.8A or less for G Series (rod/stopper/guided).
*3 For G Series (rod, stopper, guided type), it will be 2.0 A or less.
*4 For G Series (rod, stopper, guided type), it will be 3.1 A or less.

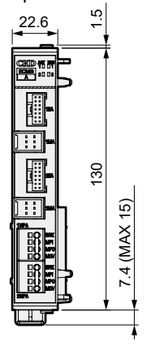
External Dimension Drawing

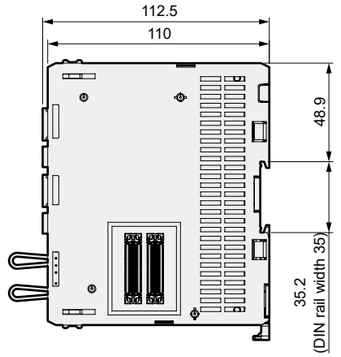
● Drive unit

1-axis specification



2-axis specification

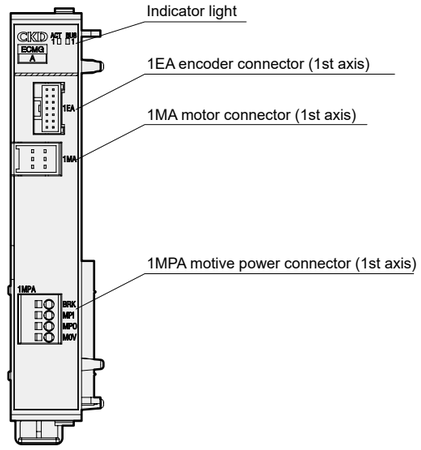




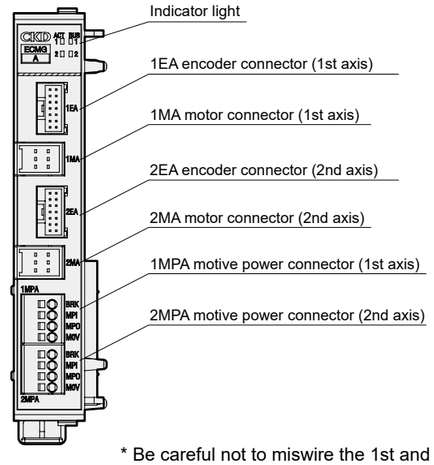
* The external dimensions of A-type and B-type are the same.

[Panel Description]

A-type 1-axis

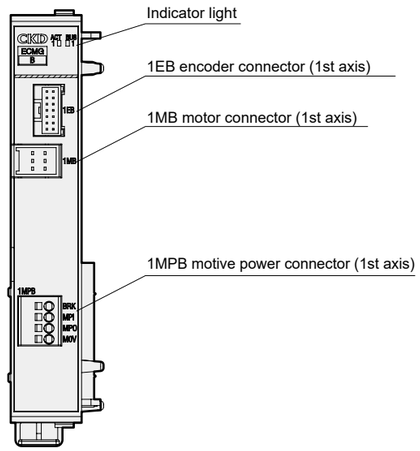


A-type 2-axis

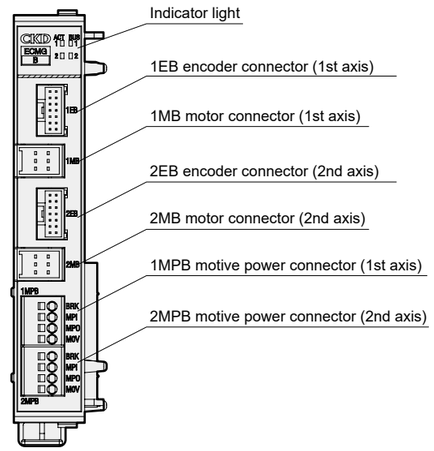


* Be careful not to miswire the 1st and 2nd axes.

B-type 1-axis



B-type 2-axis



* Be careful not to miswire the 1st and 2nd axes.

Relay cable for ECMG-DNN□30-A

● Motor cable (fixed/flexible)

* Also selectable by actuator model

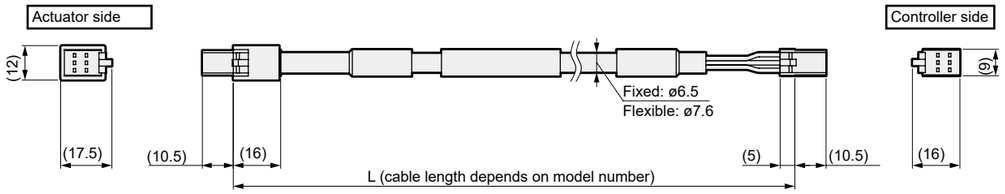
EA-CBLM 4 - S 01

❶Applicable Actuators	
4	EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL
5	EJSG-G

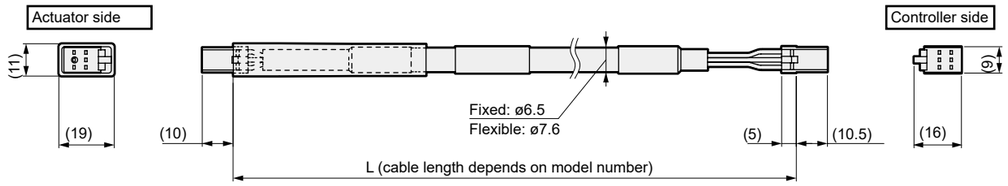
❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

● EA-CBLM4



● EA-CBLM5



* Please use all cables with a bending radius of 51 mm or more.

● Encoder cable (fixed/flexible)

* Also selectable by actuator model

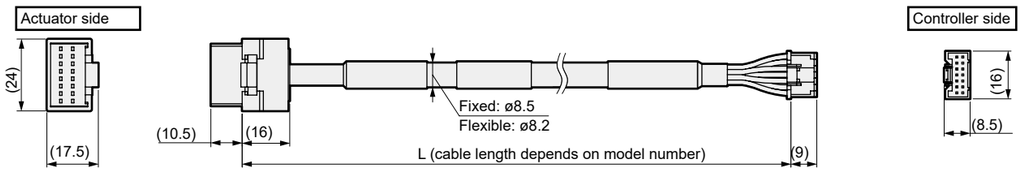
EA-CBLE 4 - S 01

❶Applicable Actuators	
4	EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL
5	EJSG-G

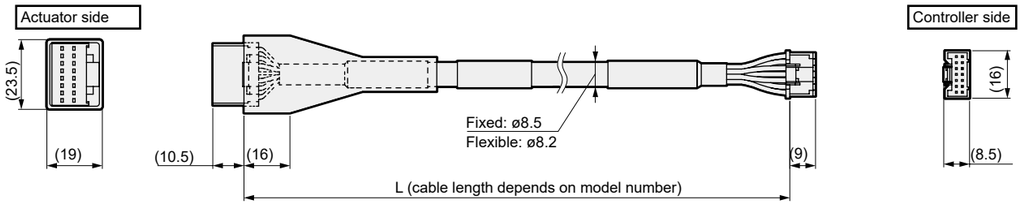
❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

● EA-CBLE4



● EA-CBLE5



* Please use all cables with a bending radius of 51 mm or more.

Relay cable for ECMG-DNN□30-B

● Motor/encoder relay cable (fixed/flexible)

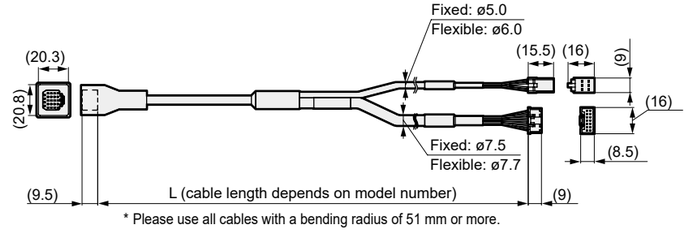
* Also selectable by actuator model

EA-CBLME 4 - S 01

❶Applicable Actuators	
4	FLCR-G, FGRC-G, FLSH-G, GCKW

❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

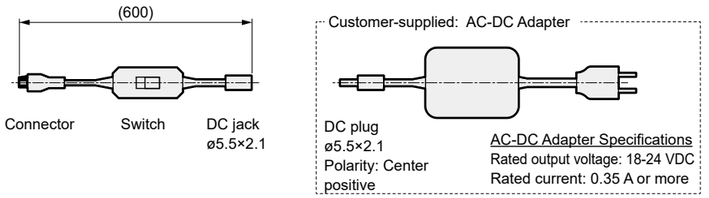


* Please use all cables with a bending radius of 51 mm or more.

Brake release unit

● FLCR brake release unit

EA-BRK-UNIT



Related Parts

● End unit

ECMG-PNNN30-EACNN

* For the external dimension drawing, please refer to P. 542.

Recommended parts

● Recommended Power Supply

Manufacturer	Model No. *1	Manufacturer model number	Input voltage	Rated current *2	Output peak current *2 *3	Parallel connection	DIN rail compatible
TDK-Lambda Corporation	–	HWS300P-24	85-264 VAC	12.5 A	42A *4	×	×
	–	HWS600P-24	85-264 VAC	25A	83A *4	○ *6	×
Cosel Co., Ltd.	EA-PWR-KHNA240F-24-N2	KHNA240F-24-N2	85-264 VAC	10 A	15 A	×	×
	EA-PWR-KHNA240F-24	KHNA240F-24	85-264 VAC	10 A	15 A	×	Yes
	–	AEA600F-24-N	85-264 VAC	17.5A *5	52.5A *5	Yes	×
	–	AEA1000F-24-N	85-264 VAC	30.0A *5	100.0A *5	Yes	×
OMRON Corporation	–	S8VK-WA96024 *7	85-264 VAC	10 A	15 A	○ *6	Yes
	–	S8VK-WA96024 *7	85-264 VAC	20 A	30 A	○ *6	Yes
	–	S8VK-WA96024 *7	170-240 VAC	40 A	60 A	○ *6	Yes

*1 Can be purchased from CKD. - (hyphenated) products cannot be purchased from CKD, so please contact each manufacturer.
*2 Derating of output power may be necessary depending on the power supply mounting method, ambient temperature, input voltage, etc. For details on the operating conditions of the power supply, please refer to the manufacturer's website.
*3 Be aware of usage restrictions due to peak current, such as DUTY restrictions. For details, please refer to the manufacturer's website.
*4 This is the current when 200 VAC is input.
*5 This is the current at 230 VAC with natural air cooling.
*6 Up to 2 units can be connected in parallel
*7 To use as a UL/cUL standard compliant product, please use this power supply.

● Other parts

Product Name	Manufacturer	Model Number
Noise filter for power supply (single-phase, 50 A)	OMRON Corporation	RSEN-2050

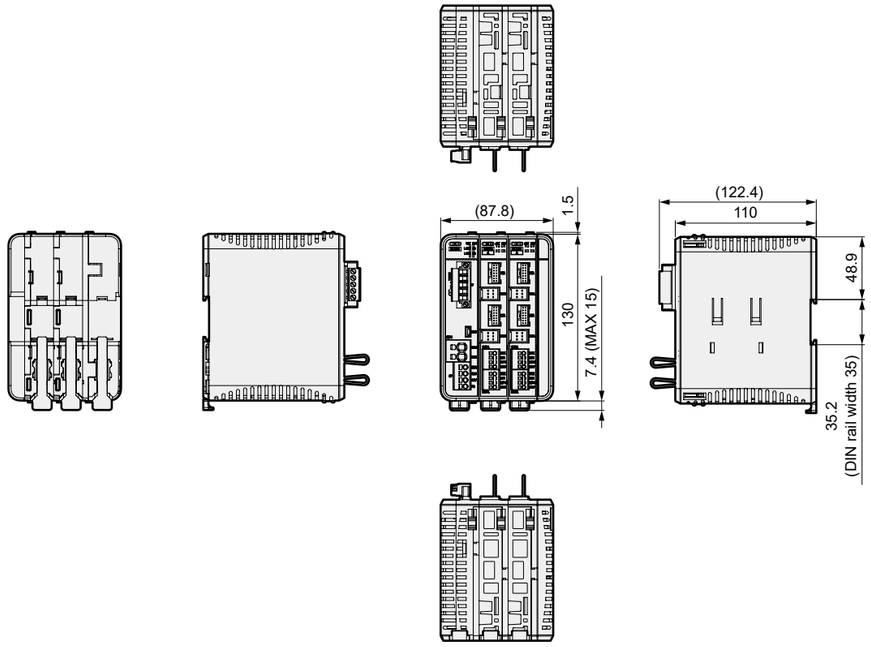
* Cannot be purchased from CKD, so please contact each manufacturer.
* For the ferrite core to be used, please refer to the instruction manual.

MEMO

Controller
ECMG
ECG
ECR
ESC4
Ending

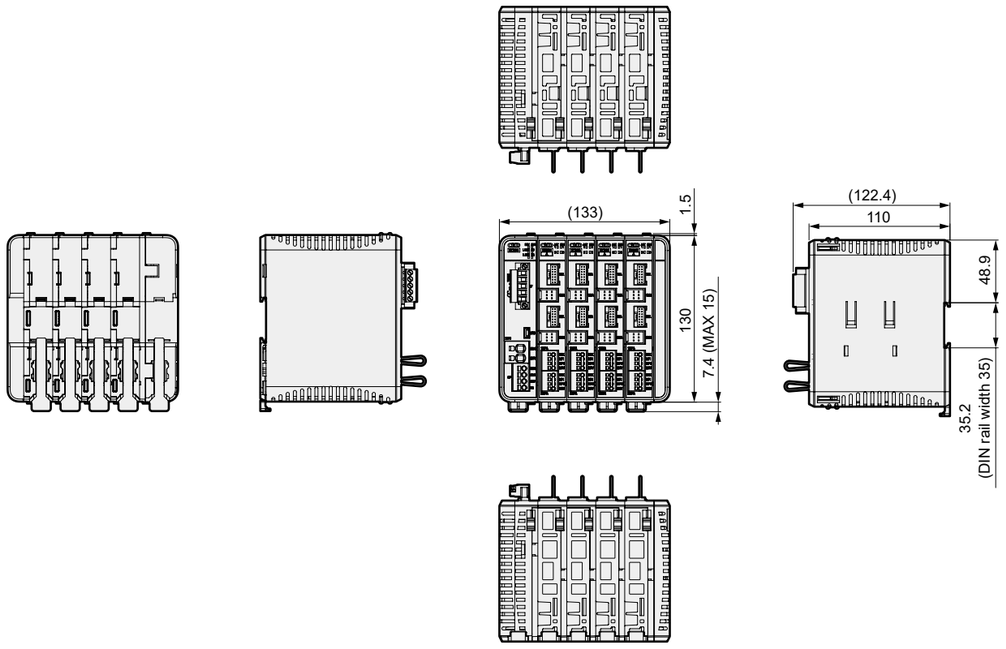
ECMG Combination External Dimension Example

[When connecting 2 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

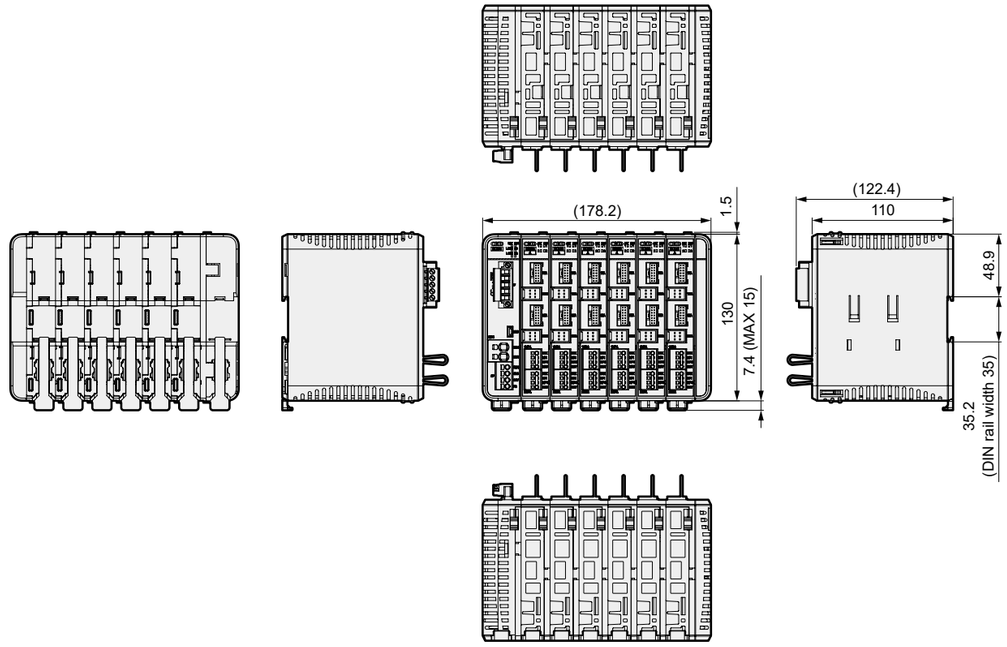
[When connecting 4 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

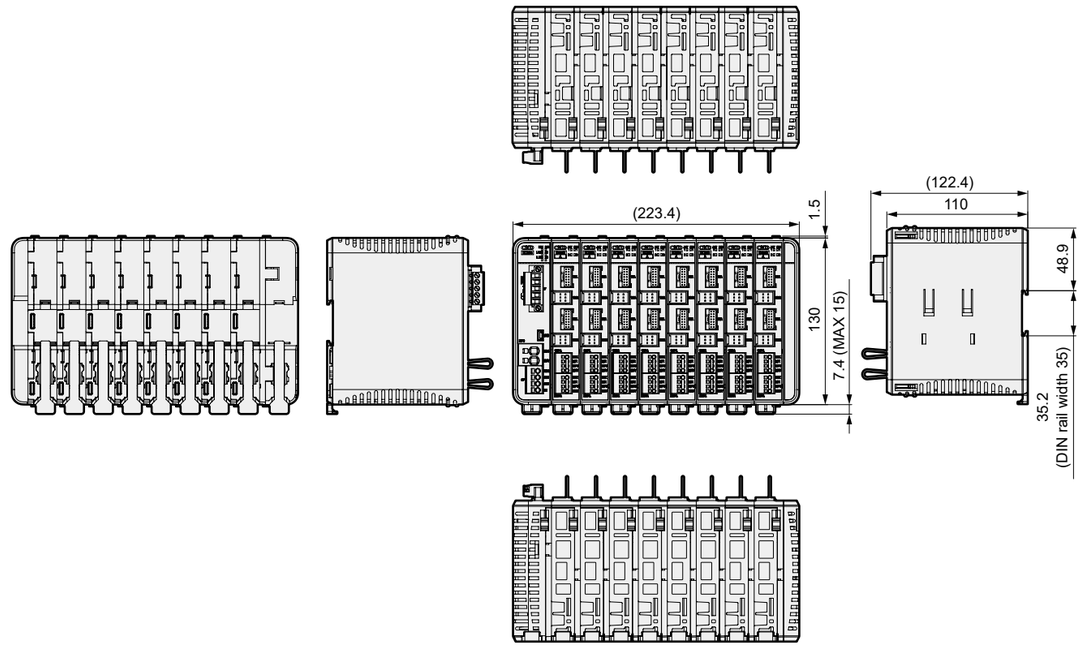
ECMG Combination External Dimension Example

[When connecting 6 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

[When connecting 8 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

STEP1 Selection of Interface

Select the communication unit interface from CC-Link, EtherCAT, and EtherNet/IP.

Interface type	Communication unit model number
CC-Link V2	ECMG-CNN□30-CLD□□
EtherCAT	ECMG-CNN□30-ECDNN
EtherNet/IP	ECMG-CNN□30-ENDNN

STEP2 Selection of Actuator and Drive Unit

Select a drive unit compatible with the selected actuator so that it fits within 8 units. (See P. 548)

Actuator model	Drive unit	
	Number of connected actuator axes	Model No.
EJSG, EBS-G, EBR-G GSSD2, GSTK, GSTG, GSTS, GSTL	2-axis specification	ECMG-DNNR30-A2DNN
	1-axis specification	ECMG-DNNR30-A1DNN
FLCR-G, FGRC-G, FLSH-G, GCKW	2-axis specification	ECMG-DNNN30-B2DNN
	1-axis specification	ECMG-DNNN30-B1DNN

STEP3 Confirmation of current consumption value (If using individual wiring for the drive unit, omit this STEP.)

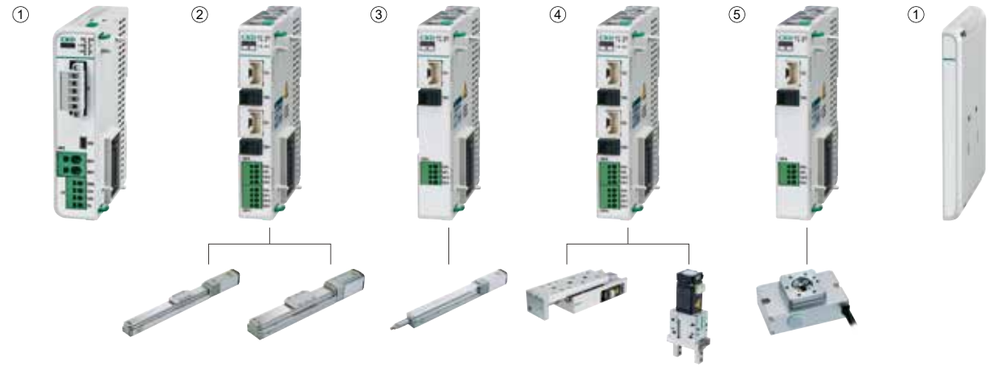
● For the motive power supply, when supplying power from the communication unit using the batch wiring method, the total motive power consumption of the following drive units must be 30 A or less. Also, when using a brake, please add the brake current (0.4 A).

· Drive unit motive power supply current consumption per axis

Model	Size	Motor Size	Current	Model	Size	Motor Size	Current	Model	Size	Motor Size	Current
EJSG EBS-G EBR-G	04	□35	3.4A *1	FLCR-G	16	□20	0.5 A	GSSD2, GSTK, GSTG, GSTS, GSTL	20	□35	1.8 A
	05	□42	4.2 A		20	□25	0.9 A		32	□42	2.0 A
	08	□56	4.5 A		25	□25L	1.6 A		50	□56	3.1 A
FLSH-G	16	□20	0.3 A	FGRC-G	10	□20	0.3 A	GCKW	16	□20	0.3 A
	20	□25	0.5 A		30	□25	0.7 A		20	□25	0.5 A
	25	□25L	0.6 A		50	□35	1.1 A		25	□35	0.6 A

*1 In the case of EJSG, it is 4.0 A.

Selection Example



	EBS-04G	EBS-08G	EBR-05G	FLCR-20G	FLSH-16G	FGRC-30G
Motive power supply capacity	3.4 A	4.5 A	4.2 A	0.3 A	0.9 A	0.7 A

Total power supply current 3.4A+4.5A+4.2A+0.3A+0.9A+0.7A = 14.0A

Total 14.0 A (total motive power supply current for batch wiring method) ≤ 30 A ... OK

STEP4 Confirmation of Power Supply Capacity

● For the control power supply, it is 0.4 A or less per unit (excluding the end unit), and the number of units×0.4 A is the maximum control current. Select a power supply so that the maximum control current does not exceed the rating of the applicable power supply.

· Max. control power current

Unit	Specifications	Model No.	Current
Communication unit	CC-Link	ECMG-CNN□30-CLD□□	0.4 A
	EtherCAT	ECMG-CNN□30-ECDNN	0.4 A
	EtherNet/IP	ECMG-CNN□30-ENDNN	0.4 A
Drive unit	A-type 2-axis	ECMG-DNNR30-A2DNN	0.4 A
	A-type 1-axis	ECMG-DNNR30-A1DNN	0.4 A
	B-type 2-axis	ECMG-DNNN30-B2DNN	0.4 A
	B-type 1-axis	ECMG-DNNN30-B1DNN	0.4 A

Control power supply current example
: For 4 axes of drive unit A-type
Communication unit+Drive unit A-type 2-axis×2 units
0.4A×3 unit = 1.2A or less

For 11 axes of drive unit A-type
A type 2-axis×5 units of communication unit+drive unit
+Drive unit A type 1-axis
0.4 A×7 units = 2.8 A or less

● For the power supply to be applied to the motive power supply, select a power supply so that the maximum motive power current of the following drive unit does not exceed the rating of the applicable power supply. Alternatively, select a power supply that supports output peak current. For recommended power supplies, please refer to P. 552. Also, when using a brake, please add the brake current (0.4 A).

· Maximum motive power current per axis of the drive unit

Model	Size	Motor Size	Current	Model	Size	Motor Size	Current	Model	Size	Motor Size	Current
EJSG EBS-G EBR-G	04	□35	12.4 A	FLCR-G	16	□20	1.0 A	GSSD2, GSTK, GSTG, GSTS, GSTL	20	□35	5.7 A
	05	□42	12.2 A		20	□25	1.5 A		32	□42	7.5 A
	08	□56	12.5 A		25	□25L	2.8 A		50	□56	4.7 A
FLSH-G	16	□20	0.4 A	FGRC-G	10	□20	0.5 A	GCKW	16	□20	0.4 A
	20	□25	0.7 A		30	□25	0.9 A		20	□25	0.7 A
	25	□25L	0.8 A		50	□35	1.5 A		25	□35	0.8 A

* The above maximum motive power current of the drive unit is the instantaneous maximum current under specific conditions within the specifications, and varies depending on the actuator, lead, motor mounting direction, motor installation direction, acceleration/deceleration, speed, etc. Please contact us for details.
* Depending on the operating environment and conditions, the actuator may require a stop time. Please contact us if the stop time is 1.0 s or less.

Special Order Product*

● Change of relay cable length

The length of the relay cable can be changed. The cable length can be changed within the range of 1 m to 10 m.

* For details on special order products, please contact our sales office.

MEMO

Controller
ECMG
ECG
ECR
ESC4
Ending

ECG

Controller

CONTENTS

Product Introduction 562

ECG-A 565

• Connectable Actuators

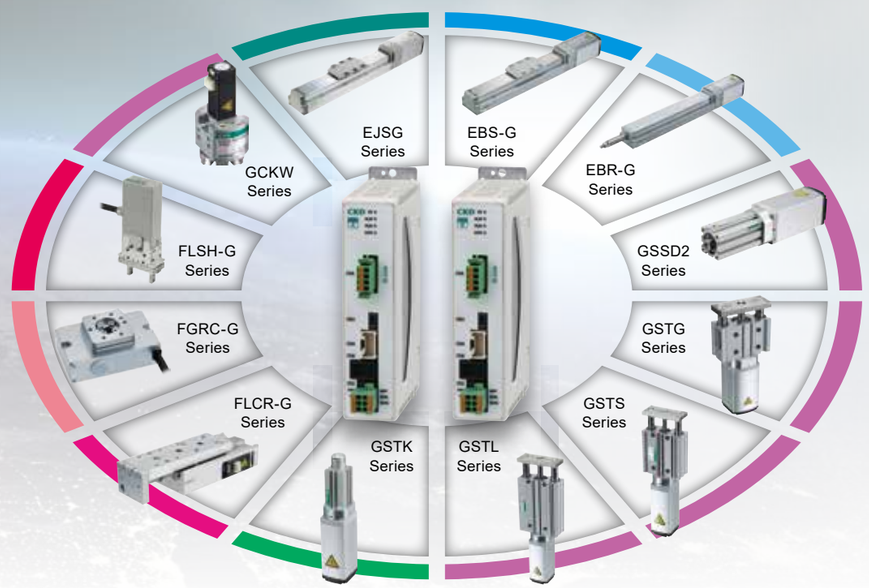
EJSG, EBS-G, EBR-G, GSSD2,
GSTK, GSTG, GSTS, GSTL

ECG-B 581

• Connectable Actuators

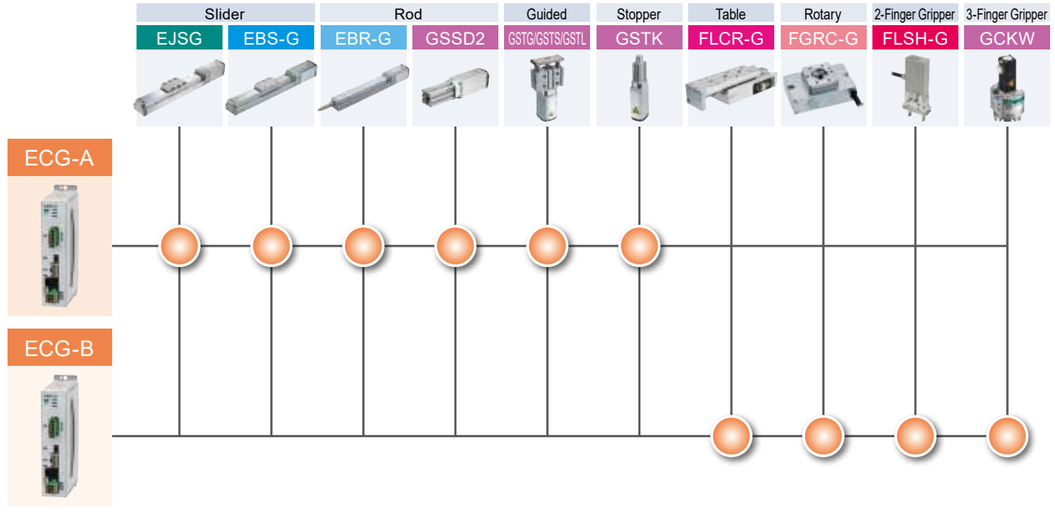
FLCR-G, FLSH-G,
FGRC-G, GCKW

Controller
ECMG
ECG
ECR
ESC4



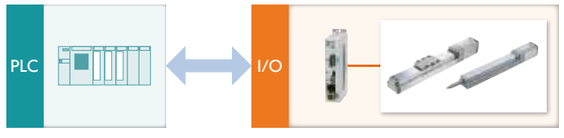
Common controller regardless of actuator model or size

List of Compatible Actuators



Compatible Interface

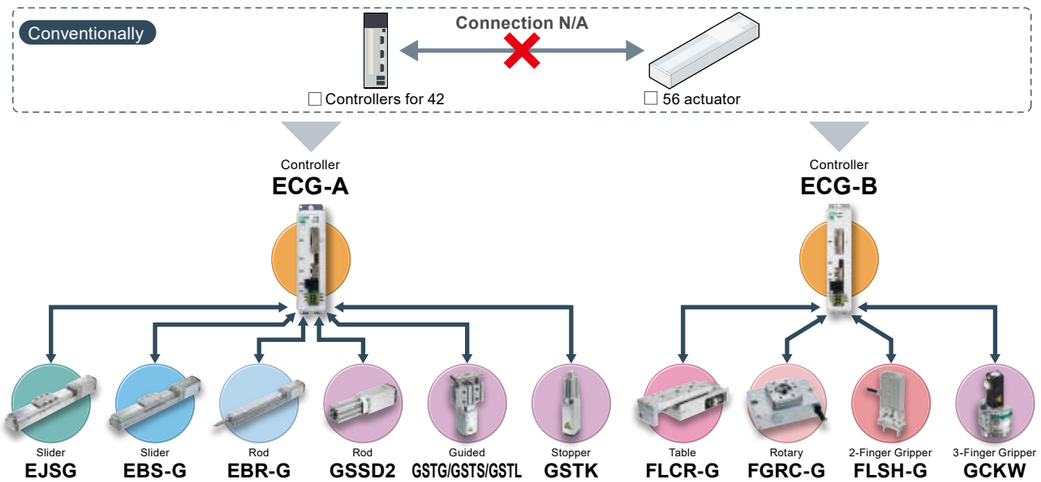
CC-Link EtherNet/IP EtherCAT IO-Link



Commonization of controllers

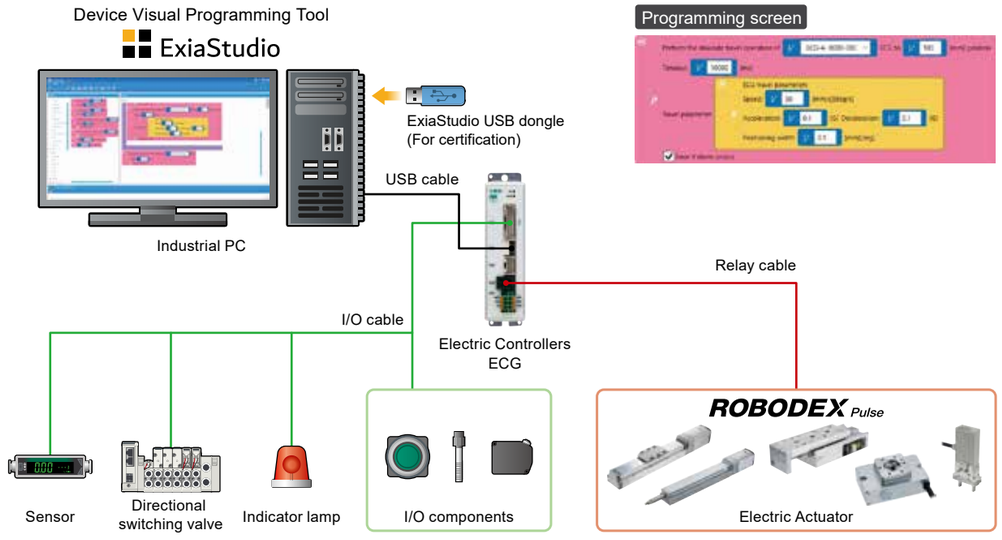
Even actuators with different models, sizes, leads, and strokes can be operated with the same controller. It is possible to significantly reduce the man-hours for selection and ordering, as well as inventory. Since it is equipped with an automatic recognition function that reads actuator information, the initial setting man-hours can also be reduced.

* The automatic recognition function is only for ECG-A



Compatible with Device Visual Programming Tool "ExiaStudio"

Compatible with "ExiaStudio", which allows for easy programming with intuitive operation without requiring specialized knowledge. Electric actuators can be easily controlled with direct values on a PC. The controller ECG can also be used as a digital I/O terminal.



Controller

ECG-A

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Controller
ECMG
ECG
ECR
ESC4

Controller

ECG-A Series

Controller for EJSG, EBS-G, EBR-G/G Series

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ECG-ANNN30 - NP A 02

❶ ❷ ❸

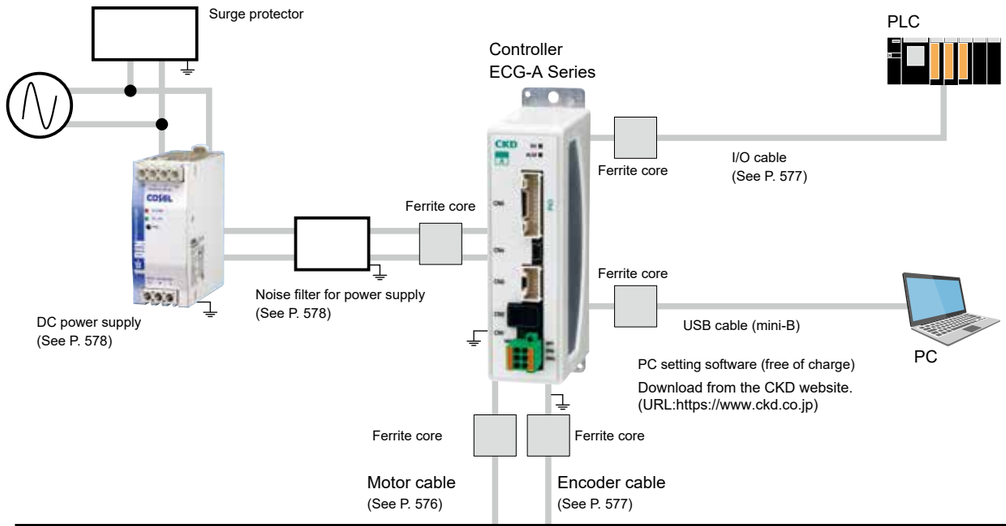
❶Interface Specifications	
NP	Parallel I/O (NPN, PNP common)
LK	IO-Link
CL	CC-Link
EC	EtherCAT
EN	EtherNet/IP

❷Mounting Method	
A	Standard mount
D	DIN rail mounting

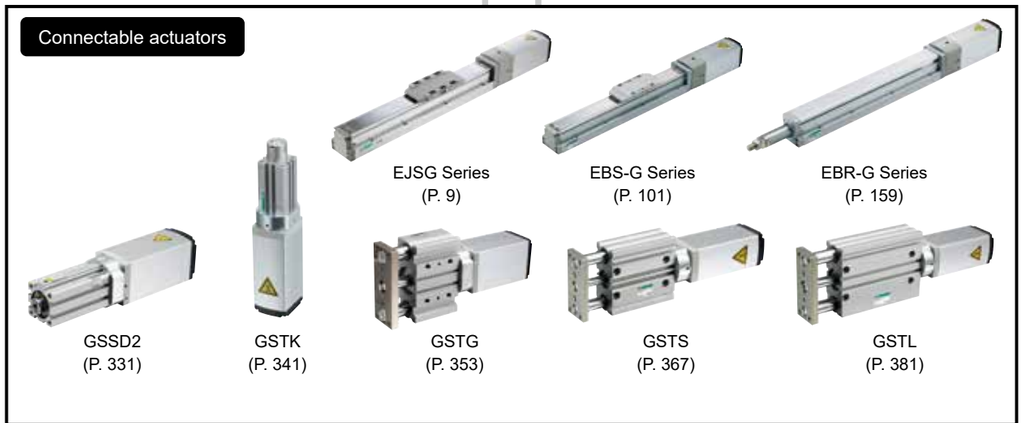
❸IO Cable Length *1	
00	None
02	2 m
03	3 m
05	5 m
10	10 m

*1 Except when selecting "Parallel I/O" for the interface specification, please select "None".

System Configuration



Connectable actuators



* For installation of noise filters, surge protectors, ferrite cores, and wiring methods, please refer to the instruction manual.

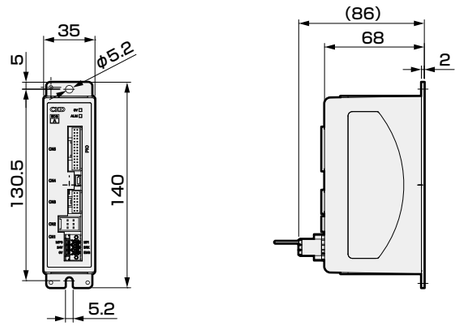
General Specifications

Item		Content		
Applicable Actuators		EJSG, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL		
Applicable Motor Size		□35	□42	□56
Configuration Tool		PC configuration software (S-Tools) Connection cable: USB cable (mini-B)		
External Interface	Parallel I/O specifications	24 VDC ±10%, max. 13 I/O points each, max. cable length 10 m		
	Field network specifications	IO-Link, CC-Link, EtherCAT, EtherNet/IP		
Indicator light		SV lamp, alarm lamp Communication status confirmation lamp (depends on each interface specification)		
Power supply voltage	Control power supply	24 VDC ±10%		
	Motive power supply	24 VDC ±10%		
Current Consumption	Control power supply	0.4 A or less		
	Motive power supply	1.7 A or less	1.9 A or less	2.8 A or less
Motor Max. Instantaneous Current		2.4 A or less	2.7 A or less	4.0 A or less
Brake current consumption		0.4 A or less		
Insulation Resistance		10 MΩ or more at 500 VDC		
Dielectric Strength		500 VAC for 1 minute		
Operating Ambient Temperature		0 to 40°C no freezing		
Operating Ambient Humidity		35 to 80% RH no condensation		
Storage Ambient Temperature		-10 to 50°C no freezing		
Storage ambient humidity		35 to 80% RH no condensation		
Operating atmosphere		No corrosive gas, explosive gas, or dust		
Protection Structure		IP20		
Weight	Parallel I/O specifications	Approx. 180 g (standard mounting), approx. 210 g (DIN rail mounting)		
	Field network specifications	Approx. 310 g (standard mounting), approx. 340 g (DIN rail mounting)		

External Dimension Drawing

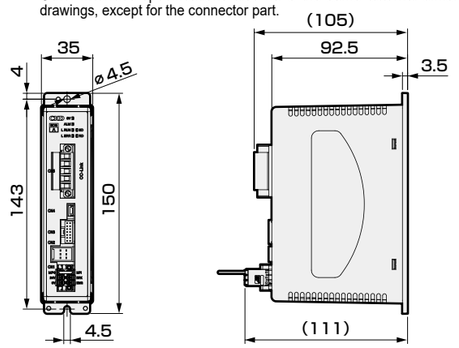
● Standard mount

ECG-ANNN30-NPA□□ (Parallel I/O specification)



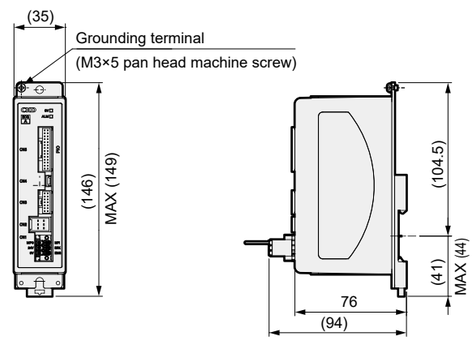
ECG-ANNN30-□□A□□ (Other)

* This figure is the external dimension drawing for the CC-Link specification. Other interface specifications also have the same external dimension drawings, except for the connector part.



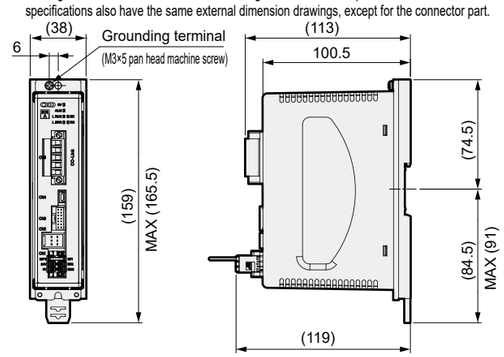
● DIN rail mounting

ECG-ANNN30-NPD□□ (Parallel I/O specification)



ECG-ANNN30-□□D□□ (Other)

* This figure is the external dimension drawing for the CC-Link specification. Other interface specifications also have the same external dimension drawings, except for the connector part.

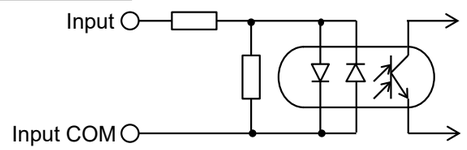


Parallel I/O (PIO) input/output circuit

Input Specifications

Item	ECG-ANNN30-NP□□
Number of input points	13 points
Input voltage	24 VDC ±10%
Input current	4 mA/point
ON-state input voltage	19 V or more
OFF-state input current	0.2 mA or less

Input circuit

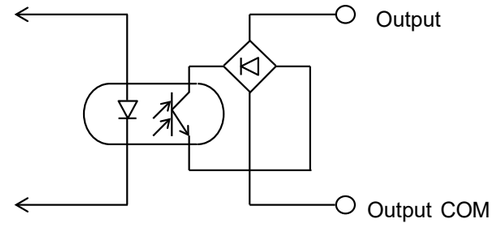


The input is non-polar.
(Input COM can be used for both+and -)

Output Specifications

Item	ECG-ANNN30-NP□□
Number of output points	13 points
Load voltage	24 VDC ±10%
Load current	20 mA or less/point
ON-state internal voltage drop	3 V or less
OFF-state leakage current	0.1 mA or less
Output short-circuit protection circuit	Yes
Connected load	PLC, etc.

Output circuit



The output is non-polar.
(Output COM can be used for both+and -)

Parallel I/O (PIO) operation mode

The controller has 5 types of operation modes.
Please set the appropriate operation mode for your application using the PC configuration software. The initial setting is "64-point mode".

Operation Mode	Number of positioning points	Overview
64-point mode	64 points	· JOG move start input Select output: · Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Simple 7-point mode	7 points	· JOG move start input Select output: · Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Double 2-position type	2 points	· SW output: 2 points Select output: · Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Double 3-position type	2 points	· SW output: 2 points Select output: · Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Single type	2 points	· SW output: 2 points Select output: · Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))

Parallel I/O (PIO) Signal Abbreviation List

Input signal

Abbreviation	Name	Abbreviation	Name
PST	Point move start	JOGM	JOG (-) move start
PSB*	Point number selection bit *	JOGP	JOG (+) move start
OST	Homing Start	P*ST	Point number * move start
SVON	Servo on	V1ST	Solenoid valve move command 1
ALMRST	Alarm Reset	V2ST	Solenoid valve move command 2
STOP	Stop	VST	Solenoid valve move command

Output signal

Abbreviation	Name	Abbreviation	Name
PEND	Point move complete	SONS	Servo ON state
PCB*	Point number confirmation bit *	ALM	Alarm
ACB*	Alarm confirmation bit *	WARN	Warning
PZONE	Point zone	READY	Ready to operate
MOVE	Moving	P*END	Point number *Move complete
ZONE1	Zone 1	SW1	Switch 1
ZONE2	Zone 2	SW2	Switch 2
OEND	Homing complete	SLMT	Soft limit over
SLMTM	Soft limit over (-)	SLMTP	Soft limit over (+)

Parallel I/O (PIO) operation mode and signal assignment

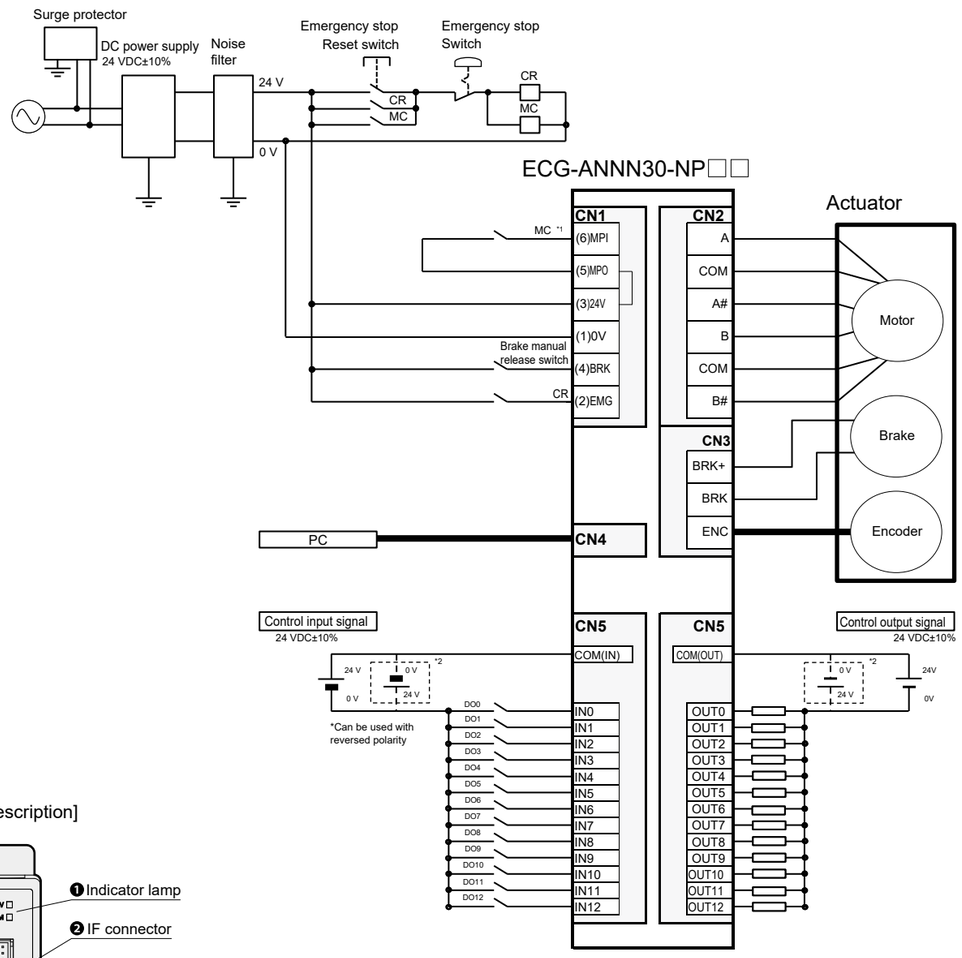
The signal assignment by operation mode is as shown in the figure below.

Operation Mode		64-point mode	Simple 7-point mode	Solenoid valve mode Double 2-position type	Solenoid valve mode Double 3-position type	Solenoid valve mode Single type
Number of positioning points		64	7	2	2	2
Input	IN0	PSB0	P1ST	V1ST	V1ST	-
	IN1	PSB1	P2ST	V2ST	V2ST	VST
	IN2	PSB2	P3ST	-	-	-
	IN3	PSB3	P4ST	-	-	-
	IN4	PSB4	P5ST	-	-	-
	IN5	PSB5	P6ST	-	-	-
	IN6	PST	P7ST	-	-	-
	IN7	JOGM	JOGM	-	-	-
	IN8	JOGP	JOGP	-	-	-
	IN9	OST	OST	OST	OST	OST
	IN10	SVON	SVON	SVON	SVON	SVON
	IN11	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST
	IN12	STOP #	STOP #	-	-	-
Output	OUT0	PCB0/ ACB0	P1END	P1END	P1END	P1END
	OUT1	PCB1/ ACB1	P2END	P2END	P2END	P2END
	OUT2	PCB2/ ACB2	P3END	-	-	-
	OUT3	PCB3/ ACB3	P4END	-	-	-
	OUT4	PCB4	P5END	SW1	SW1	SW1
	OUT5	PCB5	P6END	SW2	SW2	SW2
	OUT6	PEND	P7END	-	-	-
	OUT7	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT8	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT9	OEND	OEND	OEND	OEND	OEND
	OUT10	SONS	SONS	SONS	SONS	SONS
	OUT11	ALM#	ALM#	ALM#	ALM#	ALM#
	OUT12	READY	READY	READY	READY	READY

* # is a negative logic signal.

Parallel I/O connection diagram (ECG-ANNN30-NP)

[PIO]

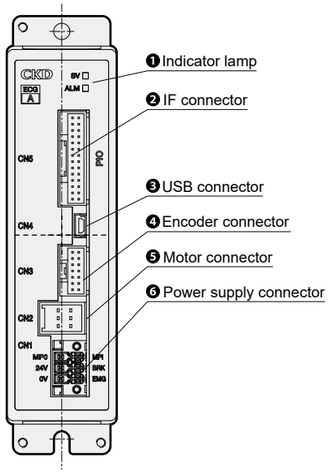


*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)

*1 A surge protector is required for CE marking compliance.

*3 It can also be used with the polarity reversed.

[Panel Description]



● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT

Description of field network operation modes

Operation Mode	Overview
PIO mode: (PIO)	Point operation can be used, and the I/O signal assignment can be changed in operation mode (PIO), similar to the parallel I/O specification. However, direct value operation, which sets the operating conditions during operation directly from the PLC, cannot be selected. In addition, parameters can be read and written, but the monitor function cannot be used. For detailed items, please refer to the table below.
Half simple direct value mode (HSDP)	This is a mode that can only be selected with a CC-Link specification controller. By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. In addition, the monitor function can be used with restrictions. However, parameters cannot be read or written. For detailed items, please refer to the table below.
Simple direct value mode: (SDP)	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.
Half direct value mode (HDP)	This is a mode that can only be selected with a CC-Link specification controller. By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC with restrictions and operated. In addition, the monitor function can be used. However, parameters cannot be read or written. For detailed items, please refer to the table below.
Full Direct Value Mode (FDP)	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.

Operation Mode		PIO	HSDP	SDP	HDP	FDP
Read/Write parameters		Available	Not available	Available	Not available	Available
Direct Value Travel Selection *1		Not selectable	Available	Available	Available	Available
Number of positioning points		64	Unlimited	Unlimited	Unlimited	Unlimited
Direct Value Travel Item *2	Target Position	-	○	○	○	○
	Positioning Width	-	-	-	○	○
	Speed	-	-	-	○	○
	Acceleration	-	-	-	●	○
	Deceleration	-	-	-	●	○
	Pushing Rate	-	-	-	○	○
	Pushing Distance	-	-	-	○	○
	Pushing Speed	-	-	-	△	○
	Gain magnification	-	-	-	*4	○
	Positioning Method	-	-	-	○	○
	Operation Method	-	-	-	○	○
	Stopping Method	-	-	-	○	○
	Acceleration/ Deceleration Method	-	-	-	○	○
Monitor Item *3	Position	-	○	○	○	○
	Speed	-	○	▲	○	○
	Current	-	○	▲	○	○
	Alarm	-	-	▲	○	○

*1: If direct value travel is not selected, it will operate with the value set in the point data. Therefore, the number of positioning points is up to 64.

*2: ○ indicates items that operate with values set from the PLC. - operates with the value set in the point data. ● indicates items that operate with values set from the PLC, but the two ● items can only be set to the same value. △ operates with the value set in the common parameters.

*3: ○ indicates items that can be monitored. - indicates items that cannot be monitored. ▲ indicates items that can be monitored by selecting them as monitor values (CC-Link and IO-Link can monitor one value at a time, while others can monitor three values simultaneously).

*4: Gain magnification is invalid.

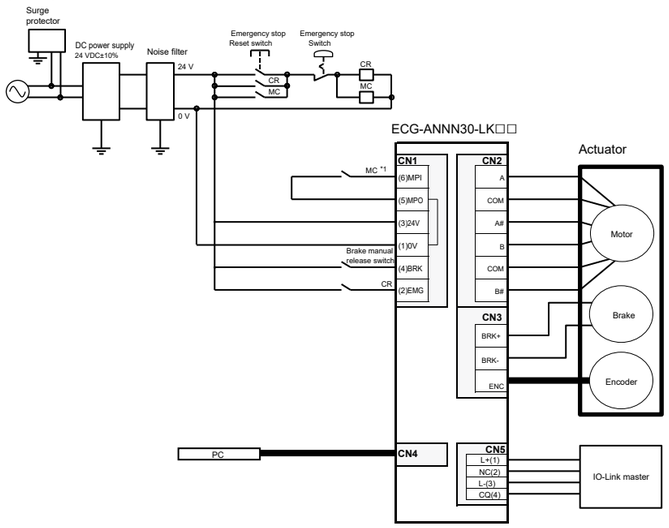
IO-Link specifications and connection diagram (ECG-ANNN30-LK□□)

[Communication Specifications]

Item	Specifications
Communication protocol version	V1.1
Transmission speed	COM3 (230.4 kbps)
Port	Class A
Process data length (input) PD(in) data length	PIO mode: 2 bytes
	Simple direct value mode: 9 bytes
	Full Direct Value Mode: 12 bytes
Process data length (output) PD(out) data length	PIO mode: 2 bytes
	Simple direct value mode: 7 bytes
	Full Direct Value Mode: 22 bytes
Minimum cycle time	PIO mode: 1 ms
	Simple direct value mode: 1.5 ms
	Full Direct Value Mode: 2.5 ms
Monitor function	Position, speed, current, alarm

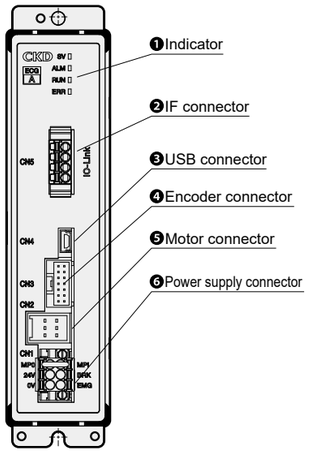
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 571.

[IO-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

PD (OUT)	bit	Full Direct Value Mode Signal name
0	7	Pause #
	6	Stop #
	5	Alarm Reset
	4	Servo ON
	3	Homing Start
	2	Point move start
	1	JOG/INCH (+) move start
	0	JOG/INCH (-) move start
1	7	INCH Selection
	6	-
	5 to 0	Point number selection bits 5 to 0
2	7 to 4	-
	3 to 1	Direction of rotation (direct value travel)
	0	Direct Value Travel Selection
3 to 6	7 to 0	Position (direct value travel)
7 to 8	7 to 0	Positioning width (direct value travel)
9 to 10	7 to 0	Speed (direct value travel)
11	7 to 0	Acceleration (direct value travel)
12	7 to 0	Deceleration (direct value travel)
13	7 to 0	Pushing rate (direct value travel)
14	7 to 0	Pushing speed (direct value travel)
15 to 18	7 to 0	Pushing distance (direct value travel)
19 to 20	7 to 0	Gain magnification (direct value travel)
21	7	Positioning method (direct value travel)
	6 to 5	Operation method (direct value travel)
	4 to 3	Acceleration/deceleration method (direct value travel)
	2 to 0	Stopping method (direct value travel)

Cyclic data from controller

PD (IN)	bit	Full Direct Value Mode Signal name
0	7	Ready to operate
	6	Warning #
	5	Alarm #
	4	Servo ON state
	3	Homing complete
	2	Point move complete
	1 to 0	-
1	7 to 6	-
	5 to 0	Point number confirmation bits 5 to 0
2	7	Soft limit over (+)
	6	Soft limit over (-)
	5	Soft limit over
	4	Zone 2
	3	Zone 1
	2	Moving
	1	Point zone
	0	Direct move state
3 to 6	7 to 0	Position (monitor value)
7 to 8	7 to 0	Speed (monitor value)
9	7 to 0	Current (monitor value)
10 to 11	7 to 0	Alarm (monitor value)

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT
IO-Link Connector	FMC1,5/4-ST-3,5-RF	PHOENIX CONTACT

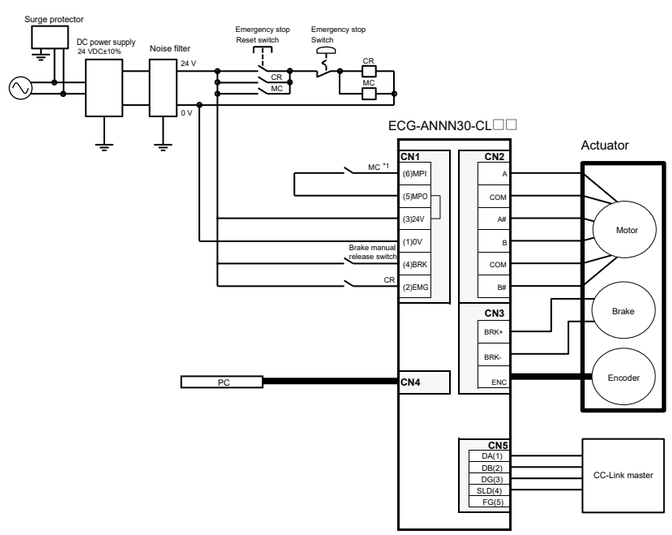
CC-Link specifications and connection diagram (ECG-ANNN30-CL□□)

[Communication Specifications]

Item	Specifications
CC-Link Version	ver. 1.10
Station type	Remote device station
Remote station number	1 to 64 (set by parameter setting)
Operation mode and number of occupied stations	PIO mode (1 station occupied)
	Half simple direct value mode (1 station occupied)
	Simple direct value mode (2 stations occupied)
	Half direct value mode (2 stations occupied)
	Full direct value mode (4 stations occupied)
Number of remote I/O points	32 points×number of occupied stations
Remote register I/O	4 words×number of occupied stations
Communication speed	10M/5M/2.5M/625k/156kbps (Select by parameter setting)
Connection cable	CC-Link Ver. 1.10 compatible cable (Shielded 3-core twisted pair cable)
Number of connected units	Up to 42 units when only remote device stations are connected
Monitor function	Position, speed, current, alarm

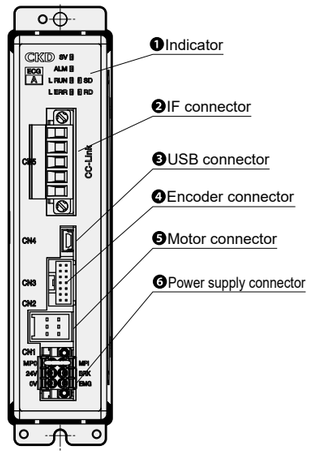
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 571.

[CC-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

Device No.	Half simple direct value mode Signal name
RYn0	Point number selection bit 0
RYn1	Point number selection bit 1
RYn2	Point number selection bit 2
RYn3	Point number selection bit 3
RYn4	Point number selection bit 4
RYn5	Point number selection bit 5
RYn6	Direct Value Travel Selection
RYn7	JOG/INCH (-) move start
RYn8	JOG/INCH (+) move start
RYn9	INCH Selection
RYnA	Point move start
RYnB	Homing Start
RYnC	Servo ON
RYnD	Alarm Reset
RYnE	Stop #
RYnF	Pause #
RY (n+1) 0 to RY (n+1) F	Unused

Device No.	Half simple direct value mode Signal name
RWw0	Position (direct value travel)
RWw1	
RWw2	-
RWw3	-

Cyclic data from controller

Device No.	Half simple direct value mode Signal name
RXn0	Point number confirmation bit 0
RXn1	Point number confirmation bit 1
RXn2	Point number confirmation bit 2
RXn3	Point number confirmation bit 3
RXn4	Point number confirmation bit 4
RXn5	Point number confirmation bit 5
RXn6	Direct value travel state
RXn7	Select output 1
RXn8	Select output 2
RXn9	-
RXnA	Point move complete
RXnB	Homing complete
RXnC	Servo ON state
RXnD	Alarm #
RXnE	Warning #
RXnF	Ready to operate
RX (n+1) 0 to RX (n+1) F	Unused

Device No.	Half simple direct value mode Signal name
RWr0	Position (monitor value)
RWr1	
RWr2	Speed (monitor value)
RWr3	Current (monitor value)

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT
CC-Link Connector	MSTB2,5/5-STF-5,08ABGYAU	PHOENIX CONTACT

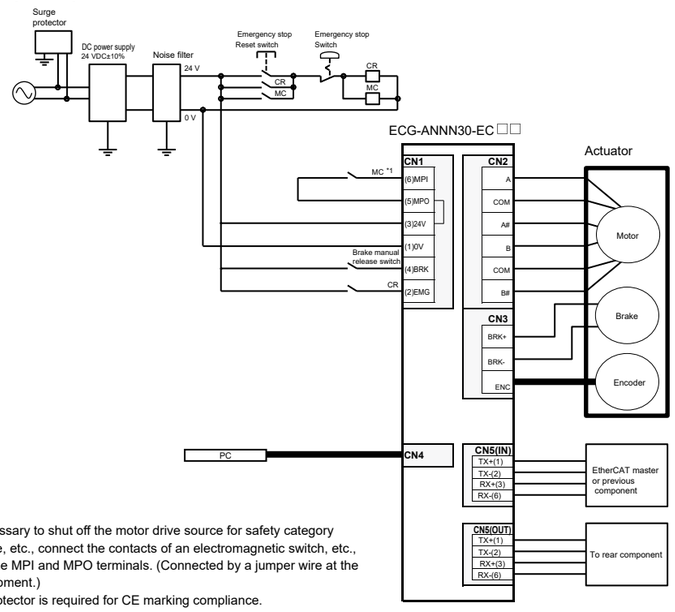
EtherCAT specifications and connection diagram (ECG-ANNN30-EC□□)

[Communication Specifications]

Item	Specifications
Communication speed	100 Mbps (Fast Ethernet, full-duplex)
Process data	Variable PDO mapping
Max. PDO Data length	RxPDO: 64 bytes TxPDO: 64 bytes
Station alias	0 to 65535 (set by parameter)
Connection cable	EtherCAT compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Node address	Master automatically assigns
Monitor function	Position, speed, current, alarm

*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 571.

[EtherCAT]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

Cyclic data from master

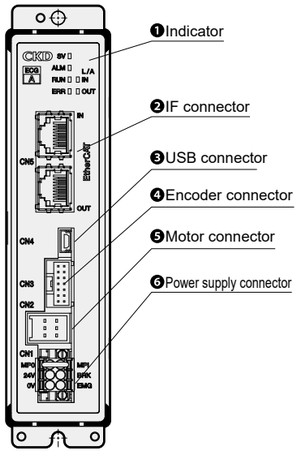
INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2001	0x01	0 to 5	Point number selection bits 0 to 5
		6	-
		7	JOG/INCH (-) move start
		8	JOG/INCH (+) move start
		9	INCH Selection
		10	Point move start
		11	Homing Start
		12	Servo ON
		13	Alarm Reset
		14	Stop #
		15	Pause #
		16 to 31	-
	0x02	0 to 3	-
		4	Data request
		5	Data R/W selection
		6 to 11	-
		12	Monitor request
		13 to 14	-
		15	Direct Value Travel Selection
		16 to 31	-
0x2003	0x01	0 to 31	Position (direct value travel)
	0x02	0 to 31	Positioning width (direct value travel)
	0x03	0 to 31	Speed (direct value travel)
	0x04	0 to 31	Acceleration (direct value travel)
	0x05	0 to 31	Deceleration (direct value travel)
	0x06	0 to 31	Pushing rate (direct value travel)
	0x07	0 to 31	Pushing speed (direct value travel)
	0x08	0 to 31	Pushing distance (direct value travel)
	0x09	0 to 31	Mode (direct value travel)
	0x0A	0 to 31	Gain magnification (direct value travel)
	0x0B	0 to 31	Write data
	0x0C	0 to 31	Data number
	0x0D	0 to 31	Monitor number 1
	0x0E	0 to 31	Monitor number 2

Cyclic data from controller

INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2005	0x01	0 to 5	Point number confirmation bits 0 to 5
		6 to 9	-
		10	Point move complete
		11	Homing complete
		12	Servo ON state
		13	Alarm #
		14	Warning #
		15	Ready to operate
		16 to 31	-
	0x02	0 to 3	Data response
		4	Data complete
		5	Data write status
		6 to 7	-
		8 to 11	Monitor response
		12	Monitor complete
		13 to 14	-
		15	Direct value travel state
		16	Point zone
		17	Moving
		18	Zone 1
		19	Zone 2
		20	Soft limit over
		21	Soft limit over (-)
		22	Soft limit over (+)
		23 to 31	-
0x2007	0x01	0 to 31	Position (monitor value)
	0x02	0 to 31	Speed (monitor value)
	0x03	0 to 31	Current (monitor value)
	0x04	0 to 31	-
	0x05	0 to 31	Alarm (monitor value)
	0x06 to 0x0A	0 to 31	-
	0x0B	0 to 31	Read data
	0x0C	0 to 31	Data (alarm)
	0x0D	0 to 31	Monitor value 1
	0x0E	0 to 31	Monitor value 2

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

[Panel Description]



● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT

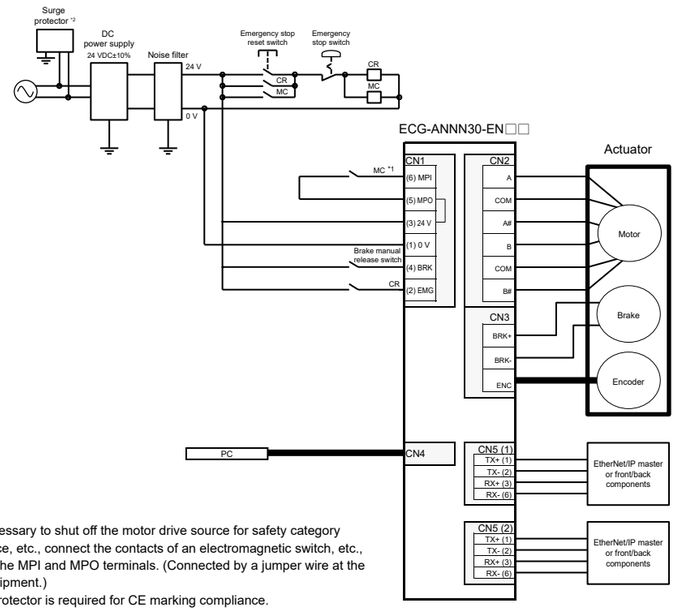
EtherNet/IP specifications and connection diagram (ECG-ANNN30-EN□□)

[Communication Specifications]

Item	Specifications
Communication protocol	EtherNet/IP
Communication speed	Automatic setting (100 Mbps/10 Mbps, full-duplex/half-duplex)
Number of occupied bytes	Input: 64 bytes/output: 64 bytes
IP address	Setting by parameter (0.0.0.0 to 255.255.255.255) via DHCP server (arbitrary address)
RPI (Packet interval)	4 ms to 10000 ms
Connection cable	EtherNet/IP compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Monitor function	Position, speed, current, alarm

*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 571.

[EtherNet/IP]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

Cyclic data from master

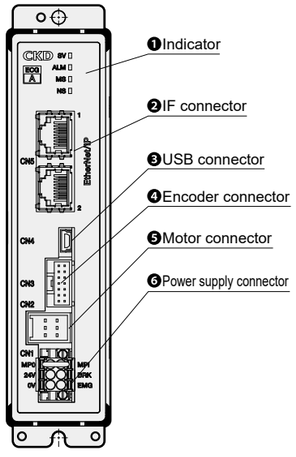
Byte	bit	Full Direct Value Mode
		Signal name
0	0 to 5	Point number selection bits 0 to 5
	6	-
	7	JOG/INCH (-) move start
1	0	JOG/INCH (+) move start
	1	INCH Selection
	2	Point move start
	3	Homing Start
	4	Servo ON
	5	Alarm Reset
	6	Stop #
	7	Pause #
2 to 3	0 to 7	-
4	0 to 3	-
	4	Data request
	5	Data R/W selection
	6 to 7	-
5	0 to 3	-
	4	Monitor request
	5 to 6	-
	7	Direct Value Travel Selection
6 to 7	0 to 7	-
8 to 11	0 to 7	Position (direct value travel)
12 to 15	0 to 7	Positioning width (direct value travel)
16 to 19	0 to 7	Speed (direct value travel)
20 to 23	0 to 7	Acceleration (direct value travel)
24 to 27	0 to 7	Deceleration (direct value travel)
28 to 31	0 to 7	Pushing rate (direct value travel)
32 to 35	0 to 7	Pushing speed (direct value travel)
36 to 39	0 to 7	Pushing distance (direct value travel)
40 to 43	0 to 7	Mode (direct value travel)
44 to 47	0 to 7	Gain magnification (direct value travel)
48 to 51	0 to 7	Write data
52 to 55	0 to 7	Data number
56 to 59	0 to 7	Monitor number 1
60 to 63	0 to 7	Monitor number 2

Cyclic data from controller

Byte	bit	Full Direct Value Mode
		Signal name
0	0 to 5	Point number confirmation bits 0 to 5
	6 to 7	-
1	0 to 1	-
	2	Point move complete
	3	Homing complete
	4	Servo ON state
	5	Alarm #
	6	Warning #
	7	Ready to operate
2 to 3	0 to 7	-
4	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to 7	-
5	0 to 3	Monitor response
	4	Monitor complete
	5 to 6	-
	7	Direct value travel state
6	0	Point zone
	1	Moving
	2	Zone 1
	3	Zone 2
	4	Soft limit over
	5	Soft limit over (-)
	6	Soft limit over (+)
	7	-
7	0 to 7	-
8 to 11	0 to 7	Position (monitor value)
12 to 15	0 to 7	Speed (monitor value)
16 to 19	0 to 7	Current (monitor value)
20 to 23	0 to 7	-
24 to 27	0 to 7	Alarm (monitor value)
28 to 47	0 to 7	-
48 to 51	0 to 7	Read data
52 to 55	0 to 7	Data (alarm)
56 to 59	0 to 7	Monitor value 1
60 to 63	0 to 7	Monitor value 2

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

[Panel Description]



● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT

Relay Cable

Motor cable model number system (ECG-A Series)

EA-CBLM 4 - S 01

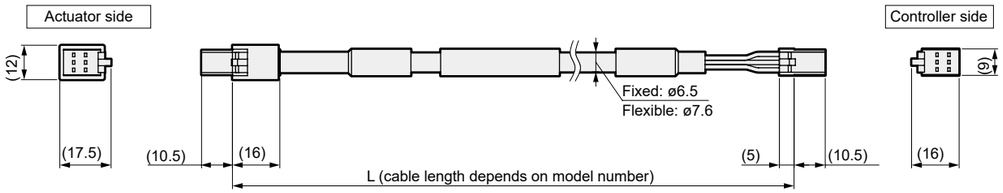
❶Cable Specifications	
4	EJSG/EJSG-C EBS-G/EBR-G GSSD2/GSTK GSTG/GSTS GSTL
5	EJSG-G

❷Cable Type	
S	Fixed cable
R	Flexible cable

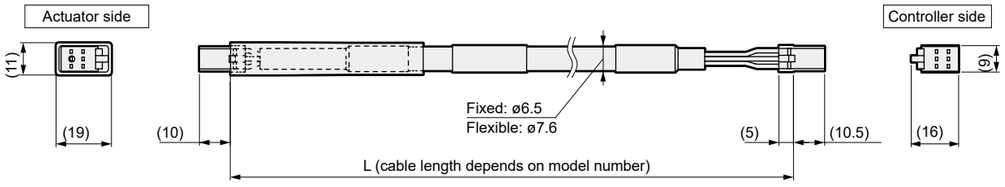
❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

Motor cable external dimensions (ECG-A series)

● EA-CBLM4 (for EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL)



● EA-CBLM5 (for EJSG-G)



* Please use all cables with a bending radius of 51 mm or more.

Relay Cable

Encoder cable model number system (ECG-A Series)

EA-CBLE 4 - S 01

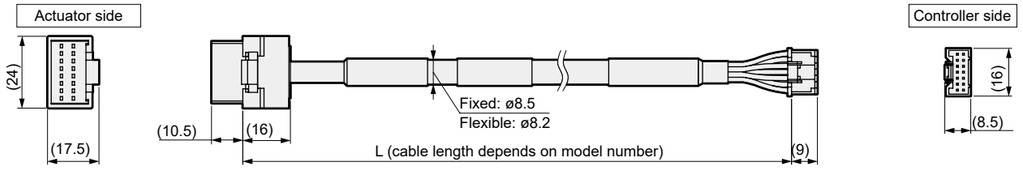
❶Cable Specifications	
4	EJSG/EJSG-C EBS-G/EBR-G GSSD2/GSTK GSTG/GSTS GSTL
5	EJSG-G

❷Cable Type	
S	Fixed cable
R	Flexible cable

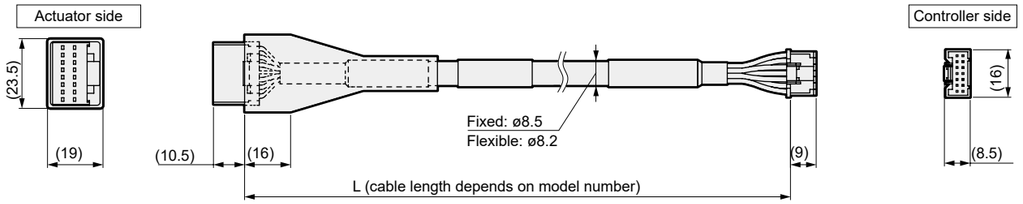
❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

Encoder cable external dimensions (ECG-A series)

● EA-CBLE4 (for EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL)



● EA-CBLE5 (for EJSG-G)



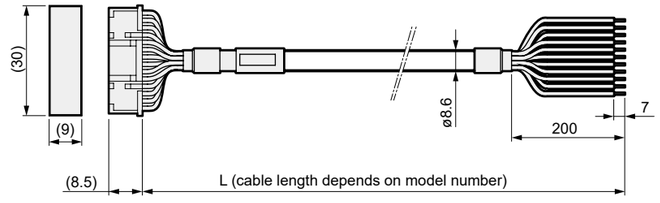
* Please use all cables with a bending radius of 51 mm or more.

I/O cable

● I/O cable

* Also selectable by parallel I/O specification controller model

EA-CBLNP2 - 02



❶Cable length	
02	2 m
03	3 m
05	5 m
10	10 m

Special Order Product*

● Change of relay cable length

The length of the relay cable can be changed.
The cable length can be changed within the range of 1 m to 10 m.

* For details on special order products, please contact our sales office.

Related parts model No. table

● Recommended Power Supply

Manufacturer	Model No. *1	Manufacturer model No.	Input voltage	Rated current *2	Output peak current *2 *3	Parallel connection	DIN rail compatible
Cosel Co., Ltd.	EA-PWR-KHNA240F-24-N2	KHNA240F-24-N2	85-264 VAC	10 A	15 A	×	×
	EA-PWR-KHNA240F-24	KHNA240F-24	85-264 VAC	10 A	15 A	×	Yes
OMRON Corporation	–	S8VK-S24024 *5	85-264 VAC	10 A	15 A	Yes *4	Yes
	–	S8VK-S48024 *5	85-264 VAC	20 A	30 A	Yes *4	Yes

*1 Can be purchased from CKD. - (hyphenated) products cannot be purchased from CKD, so please contact each manufacturer.
*2 Derating of output power may be necessary depending on the power supply mounting method, ambient temperature, input voltage, etc. For details on the operating conditions of the power supply, please refer to the manufacturer's website.
*3 Be aware of usage restrictions due to peak current, such as DUTY restrictions. For details, please refer to the manufacturer's website.
*4 Up to 2 units can be connected in parallel.
*5 To use as a UL/cUL compliant product, please use this power supply.

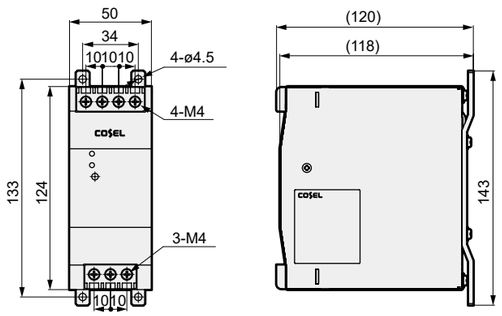
[Power Supply Specifications]

Item \ Model No.			EA-PWR-KHNA240F-24-N2 (screw mounting) EA-PWR-KHNA240F-24 (DIN rail mounting)
Manufacturer			Cosel Co., Ltd.
Manufacturer model number	Screw mounting		KHNA240F-24-N2
	DIN rail mounting		KHNA240F-24
Input voltage			85 to 264 VAC ø1 or 88 to 370 VDC
Output	Power		240 W
	Voltage/Current		24 V 10 A
	Variable voltage range		22.5 to 28.5 V
Attached functions	Overcurrent protection		Operates at 101% min of peak current
	Overvoltage protection		30.0 to 36.0 V
	Remote control		Possible
	Remote sensing		-
	Other		DC_OK display, ALARM display
Operating temperature/humidity			-25 to +70°C, 20 to 90%RH (no condensation), -40°C Bootable *
Applicable Standards	Safety standards	AC input	UL60950-1, C-UL(CSA60950-1), EN62368-1
			UL508, ANSI/ISA 12.12.01, ATEX certified, PSE compliant*
		DC input	UL60950-1, C-UL(CSA60950-1), EN62368-1
	Noise terminal voltage		Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B
	Harmonic current		IEC61000-3-2 (Class A) compliant*
Structure	External dimensions (W×H×D)		50×124×117 mm
	Weight		900 g max
	Cooling method		Natural air cooling

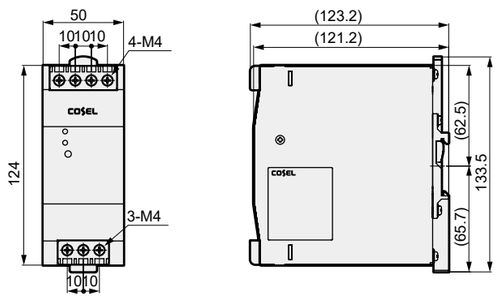
* For details, please refer to the manufacturer's website.
* CE marking and RoHS are obtained by manufacturer model number.

[External Dimension Drawing]

■ EA-PWR-KHNA240F-24-N2 (for 24 V screw mounting)



■ EA-PWR-KHNA240F-24 (for 24 V DIN rail mounting)



● Other parts

Product Name	Model No.
Noise filter for power supply (single-phase, 15 A)	AX-NSF-NF2015A-OD

* For the ferrite core to be used, please refer to the instruction manual.

MEMO

ECG-B

Controller

CONTENTS

Product Introduction	562
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Controller
ECMG
ECG
ECR
ESC4

Controller

ECG-B Series

Controller for FLCR-G, FLSH-G, FGRC-G, GCKW

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ECG-BNNN30 - NP A 02

❶ ❷ ❸

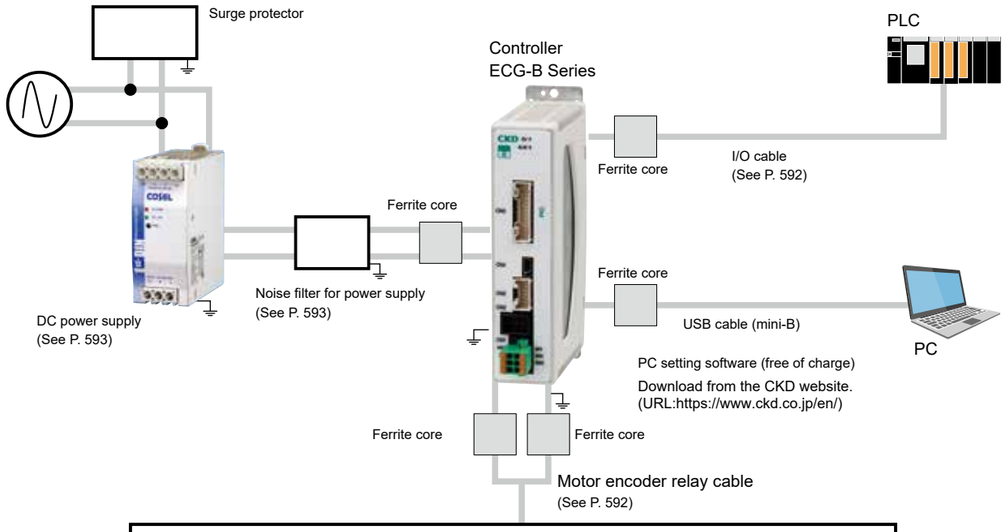
❶Interface Specifications	
NP	Parallel I/O (NPN, PNP common)
LK	IO-Link
CL	CC-Link
EC	EtherCAT
EN	EtherNet/IP

❷Mounting Method	
A	Standard mount
D	DIN rail mounting

❸IO Cable Length *1	
00	None
02	2 m
03	3 m
05	5 m
10	10 m

*1 Except when selecting "Parallel I/O" for the interface specification, please select "None".

System Configuration



Connectable actuators

FLCR-G Series (P. 225) | FGRC-G Series (P. 247) | FLSH-G Series (P. 271) | GCKW Series (P. 395)

* For installation of noise filters, surge protectors, ferrite cores, and wiring methods, please refer to the instruction manual.

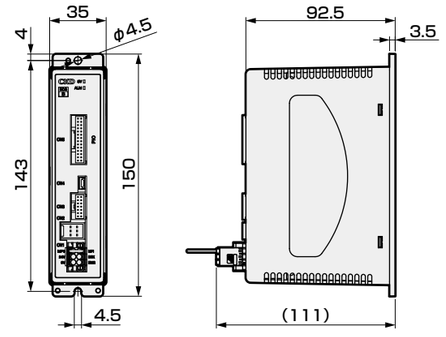
General Specifications

Item		Content			
Applicable Actuators		FLCR-G, FGRC-G, FLSH-G, GCKW			
Applicable Motor Size		□20	□25	□25L	□35
Configuration Tool		PC configuration software (S-Tools) Connection cable: USB cable (mini-B)			
External Interface	Parallel I/O specifications	24 VDC ±10%, max. 13 I/O points each, max. cable length 10 m			
	Field network specifications	IO-Link, CC-Link, EtherCAT, EtherNet/IP			
Indicator light		SV lamp, alarm lamp Communication status confirmation lamp (depends on each interface specification)			
Power supply voltage	Control power supply	24 VDC ±10%			
	Motive power supply	24 VDC ±10%			
Current Consumption	Control power supply	0.4 A or less			
	Motive power supply	1.1 A or less	2.1 A or less	3.2 A or less	3.0 A or less
Motor Max. Instantaneous Current		1.5 A or less	3.0 A or less	4.5 A or less	4.2 A or less
Insulation Resistance		10 MΩ or more at 500 VDC			
Dielectric Strength		500 VAC for 1 minute			
Operating Ambient Temperature		0 to 40°C no freezing			
Operating Ambient Humidity		35 to 80% RH no condensation			
Storage Ambient Temperature		-10 to 50°C no freezing			
Storage ambient humidity		35 to 80% RH no condensation			
Operating atmosphere		No corrosive gas, explosive gas, or dust			
Protection Structure		IP20			
Weight		Approx. 310 g (standard mounting) Approx. 340 g (DIN rail mounting)			

External Dimension Drawing

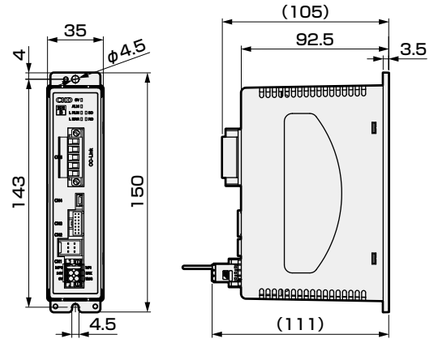
● Standard mount

ECG-BNNN30-NPA□□ (Parallel I/O specification)



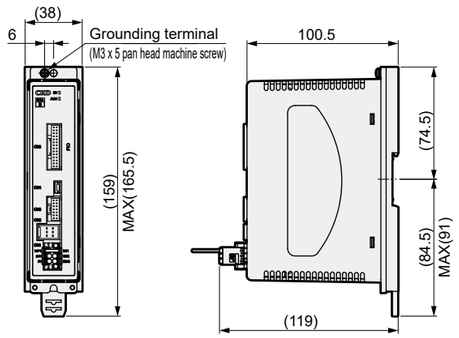
ECG-BNNN30-□□A□□ (Other)

* This figure is the external dimension drawing for the CC-Link specification. Other interface specifications also have the same external dimension drawings, except for the connector part.



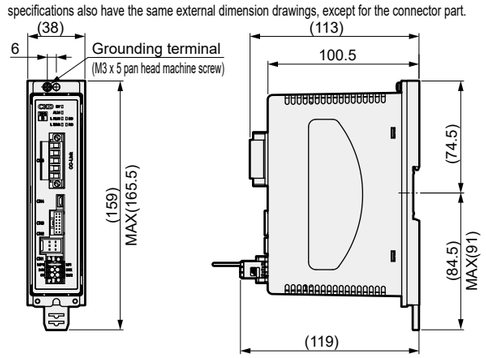
● DIN rail mounting

ECG-BNNN30-NPD□□ (Parallel I/O specification)



ECG-BNNN30-□□D□□ (Other)

* This figure is the external dimension drawing for the CC-Link specification. Other interface specifications also have the same external dimension drawings, except for the connector part.

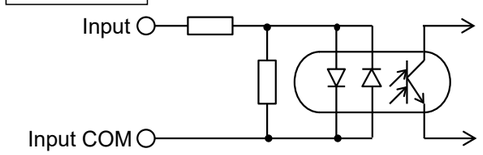


Parallel I/O (PIO) input/output circuit

Input Specifications

Item	ECG-ANNN30-NP□□
Number of input points	13 points
Input voltage	24 VDC ±10%
Input current	4 mA/point
ON-state input voltage	19 V or more
OFF-state input current	0.2 mA or less

Input circuit

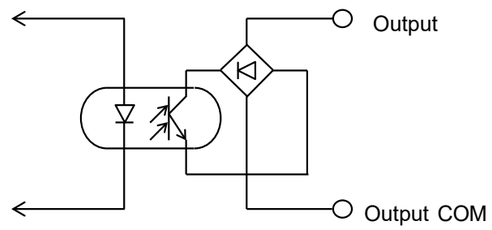


The input is non-polar.
(Input COM can be used for both+and -)

Output Specifications

Item	ECG-ANNN30-NP□□
Number of output points	13 points
Load voltage	24 VDC ±10%
Load current	20 mA or less/point
ON-state internal voltage drop	3 V or less
OFF-state leakage current	0.1 mA or less
Output short-circuit protection circuit	Yes
Connected load	PLC, etc.

Output circuit



The output is non-polar.
(Output COM can be used for both+and -)

Parallel I/O (PIO) operation mode

The controller has 5 types of operation modes.
Please set the appropriate operation mode for your application using the PC configuration software. The initial setting is "64-point mode".

Operation Mode	Number of positioning points	Overview
64-point mode	64 points	· JOG move start input · Select output: Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Simple 7-point mode	7 points	· JOG move start input · Select output: Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Double 2-position type	2 points	· SW output: 2 points · Select output: Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Double 3-position type	2 points	· SW output: 2 points · Select output: Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))
Solenoid valve mode Single type	2 points	· SW output: 2 points · Select output: Select output: 2 points (Point zone, Zone 1, Zone 2, Moving, Warning, Soft limit over, Soft limit over (-), Soft limit over (+))

Parallel I/O (PIO) Signal Abbreviation List

Input signal

Abbreviation	Name	Abbreviation	Name
PST	Point move start	JOGM	JOG (-) move start
PSB*	Point number selection bit *	JOGP	JOG (+) move start
OST	Homing Start	P*ST	Point number *Move start
SVON	Servo on	V1ST	Solenoid valve move command 1
ALMRST	Alarm Reset	V2ST	Solenoid valve move command 2
STOP	Stop	VST	Solenoid valve move command

Output signal

Abbreviation	Name	Abbreviation	Name
PEND	Point move complete	SONS	Servo ON state
PCB*	Point number confirmation bit *	ALM	Alarm
ACB*	Alarm confirmation bit *	WARN	Warning
PZONE	Point zone	READY	Ready to operate
MOVE	Moving	P*END	Point number *Move complete
ZONE1	Zone 1	SW1	Switch 1
ZONE2	Zone 2	SW2	Switch 2
OEND	Homing complete	SLMT	Soft limit over
SLMTM	Soft limit over (-)	SLMTP	Soft limit over (+)

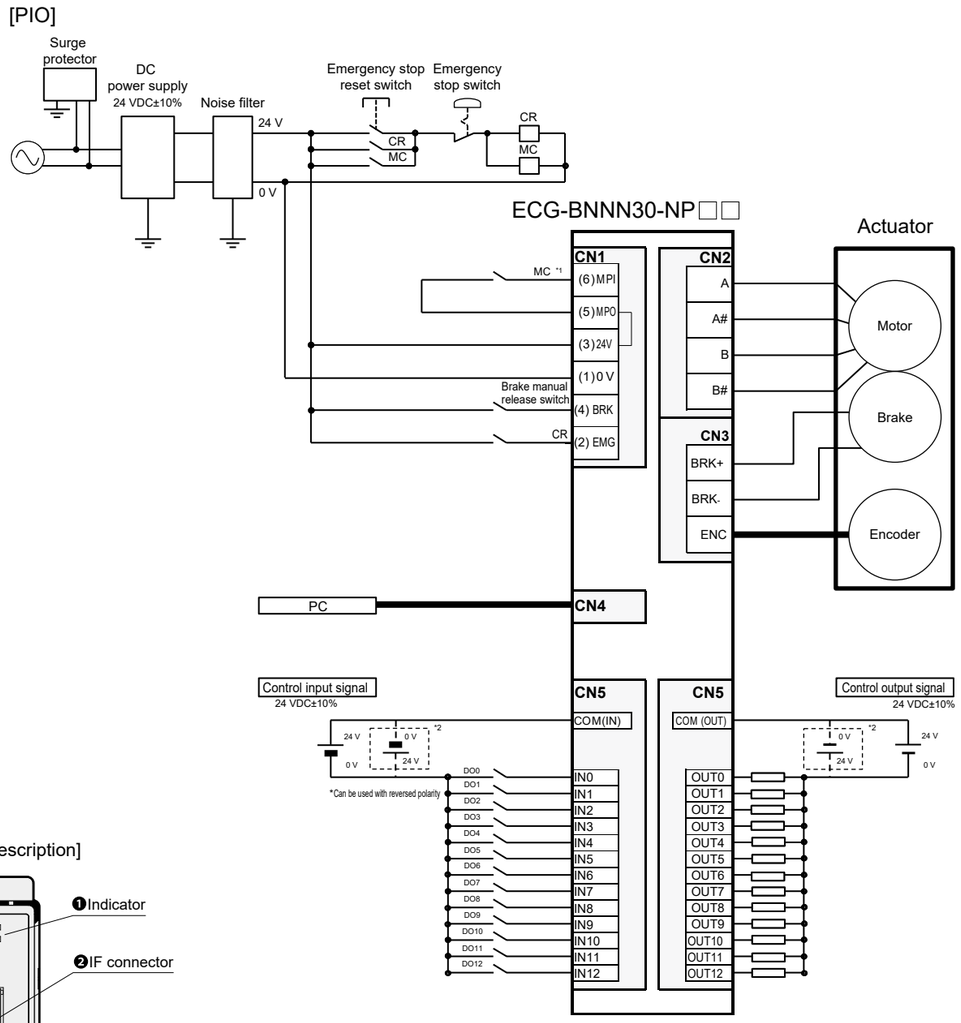
Parallel I/O (PIO) operation mode and signal assignment

The signal assignment by operation mode is as shown in the figure below.

Operation Mode		64-point mode	Simple 7-point mode	Solenoid valve mode Double 2-position type	Solenoid valve mode Double 3-position type	Solenoid valve mode Single type
Number of positioning points		64	7	2	2	2
Input	IN0	PSB0	P1ST	V1ST	V1ST	-
	IN1	PSB1	P2ST	V2ST	V2ST	VST
	IN2	PSB2	P3ST	-	-	-
	IN3	PSB3	P4ST	-	-	-
	IN4	PSB4	P5ST	-	-	-
	IN5	PSB5	P6ST	-	-	-
	IN6	PST	P7ST	-	-	-
	IN7	JOGM	JOGM	-	-	-
	IN8	JOGP	JOGP	-	-	-
	IN9	OST	OST	OST	OST	OST
	IN10	SVON	SVON	SVON	SVON	SVON
	IN11	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST
	IN12	STOP #	STOP #	-	-	-
Output	OUT0	PCB0/ ACB0	P1END	P1END	P1END	P1END
	OUT1	PCB1/ ACB1	P2END	P2END	P2END	P2END
	OUT2	PCB2/ ACB2	P3END	-	-	-
	OUT3	PCB3/ ACB3	P4END	-	-	-
	OUT4	PCB4	P5END	SW1	SW1	SW1
	OUT5	PCB5	P6END	SW2	SW2	SW2
	OUT6	PEND	P7END	-	-	-
	OUT7	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT8	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT9	OEND	OEND	OEND	OEND	OEND
	OUT10	SONS	SONS	SONS	SONS	SONS
	OUT11	ALM#	ALM#	ALM#	ALM#	ALM#
	OUT12	READY	READY	READY	READY	READY

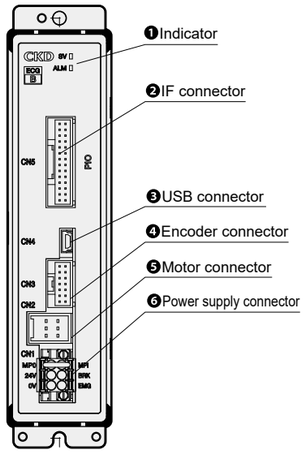
* # is a negative logic signal.

Parallel I/O connection diagram (ECG-BNNN30-NP□□)



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.
*3 It can also be used with the polarity reversed.

[Panel Description]



● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT

Description of field network operation modes

Operation Mode	Overview
PIO mode: (PIO)	Point operation can be used, and the I/O signal assignment can be changed in operation mode (PIO), similar to the parallel I/O specification. However, direct value operation, which sets the operating conditions during operation directly from the PLC, cannot be selected. In addition, parameters can be read and written, but the monitor function cannot be used. For detailed items, please refer to the table below.
Half simple direct value mode: (HSDP)	This is a mode that can only be selected with a CC-Link specification controller. By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. In addition, the monitor function can be used with restrictions. However, parameters cannot be read or written. For detailed items, please refer to the table below.
Simple direct value mode: (SDP)	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.
Half direct value mode: (HDP)	This is a mode that can only be selected with a CC-Link specification controller. By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC with restrictions and operated. In addition, the monitor function can be used. However, parameters cannot be read or written. For detailed items, please refer to the table below.
Full direct value mode: (FDP)	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.

Operation Mode		PIO	HSDP	SDP	HDP	FDP
Read/Write parameters		Available	Not available	Available	Not available	Available
Direct Value Travel Selection *1		Not selectable	Available	Available	Available	Available
Number of positioning points		64	Unlimited	Unlimited	Unlimited	Unlimited
Direct Value Travel Item *2	Target Position	-	○	○	○	○
	Positioning Width	-	-	-	○	○
	Speed	-	-	-	○	○
	Acceleration	-	-	-	●	○
	Deceleration	-	-	-	●	○
	Pushing Rate	-	-	-	○	○
	Pushing Distance	-	-	-	○	○
	Pushing Speed	-	-	-	△	○
	Gain magnification	-	-	-	*4	○
	Positioning Method	-	-	-	○	○
	Operation Method	-	-	-	○	○
	Stopping Method	-	-	-	○	○
	Acceleration/Deceleration Method	-	-	-	○	○
Monitor Item *3	Position	-	○	○	○	○
	Speed	-	○	▲	○	○
	Current	-	○	▲	○	○
	Alarm	-	-	▲	○	○

*1: If direct value travel is not selected, it will operate with the value set in the point data. Therefore, the number of positioning points is up to 64.
*2: ○ indicates items that operate with values set from the PLC. - operates with the value set in the point data.
● indicates items that operate with values set from the PLC, but the two ● items can only be set to the same value. △ operates with the value set in the common parameters.
*3: ○ indicates items that can be monitored. - indicates items that cannot be monitored.
▲ indicates items that can be monitored by selecting them as monitor values (CC-Link and IO-Link can monitor one value at a time, while others can monitor three values simultaneously).
*4: Gain magnification is invalid.

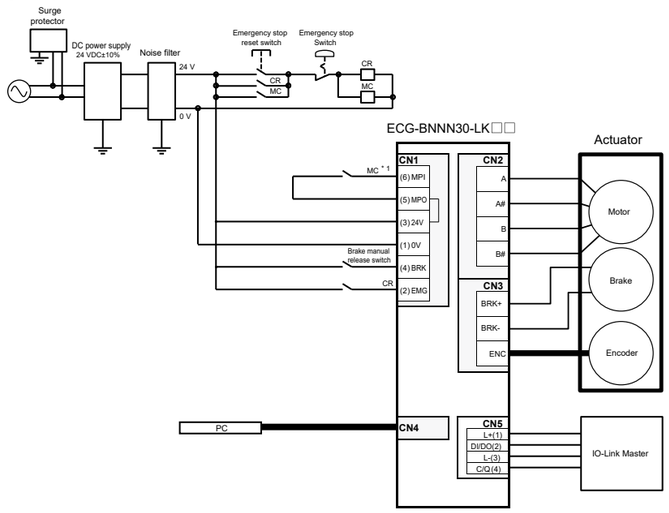
IO-Link specifications and connection diagram (ECG-BNNN30-LK□□)

[Communication Specifications]

Item	Specifications
Communication protocol version	V1.1
Transmission speed	COM3 (230.4kbps)
Port	Class A
Process data length (Input) PD (in) data length	PIO mode: 2 bytes
	Simple direct value mode: 9 bytes
	Full Direct Value Mode: 12 bytes
Process data length (Output) PD (out) data length	PIO mode: 2 bytes
	Simple direct value mode: 7 bytes
	Full Direct Value Mode: 22 bytes
Minimum cycle time	PIO mode: 1 ms
	Simple direct value mode: 1.5 ms
	Full Direct Value Mode: 2.5 ms
Monitor function	Position, speed, current, alarm

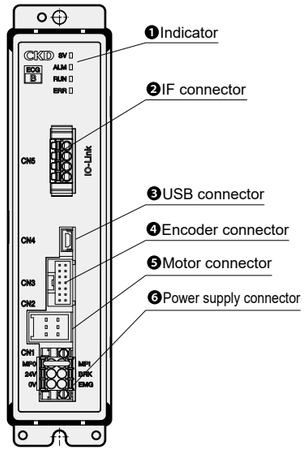
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 587.

[IO-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

PD (out)	bit	Full Direct Value Mode Signal name
0	7	Pause #
	6	Stop #
	5	Alarm Reset
	4	Servo ON
	3	Homing Start
	2	Point move start
	1	JOG/INCH (+) move start
	0	JOG/INCH (-) move start
1	7	INCH Selection
	6	-
	5 to 0	Point number selection bit 5 to 0
2	7 to 4	-
	3 to 1	Direction of rotation (direct value travel)
	0	Direct Value Travel Selection
3 to 6	7 to 0	Position (direct value travel)
7 to 8	7 to 0	Positioning width (direct value travel)
9 to 10	7 to 0	Speed (direct value travel)
11	7 to 0	Acceleration (direct value travel)
12	7 to 0	Deceleration (direct value travel)
13	7 to 0	Pushing rate (direct value travel)
14	7 to 0	Pushing speed (direct value travel)
15 to 18	7 to 0	Pushing distance (direct value travel)
19 to 20	7 to 0	Gain magnification (direct value travel)
21	7	Positioning method (direct value travel)
	6 to 5	Operation method (direct value travel)
	4 to 3	Acceleration/deceleration method (direct value travel)
	2 to 0	Stopping method (direct value travel)

Cyclic data from controller

PD (in)	bit	Full Direct Value Mode Signal name
0	7	Ready to operate
	6	Warning #
	5	Alarm #
	4	Servo ON state
	3	Homing complete
	2	Point move complete
	1 to 0	-
1	7 to 6	-
	5 to 0	Point number confirmation bit 5 to 0
2	7	Soft limit over (+)
	6	Soft limit over (-)
	5	Soft limit over
	4	Zone 2
	3	Zone 1
	2	Moving
	1	Point zone
	0	Direct move state
3 to 6	7 to 0	Position (monitor value)
7 to 8	7 to 0	Speed (monitor value)
9	7 to 0	Current (monitor value)
10 to 11	7 to 0	Alarm (monitor value)

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT
IO-Link Connector	FMC1,5/4-ST-3,5-RF	PHOENIX CONTACT

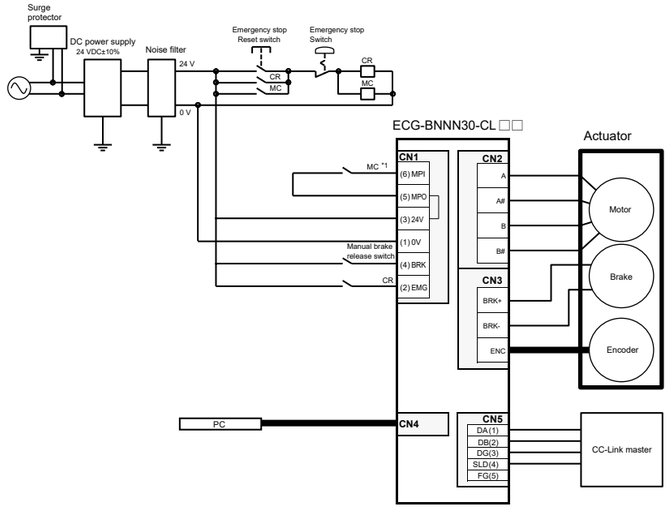
CC-Link specifications and connection diagram (ECG-BNNN30-CL□□)

[Communication Specifications]

Item	Specifications
CC-Link Version	ver. 1.10
Station type	Remote device station
Remote station number	1 to 64 (set by parameter setting)
Operation mode and number of occupied stations	PIO mode (1 station occupied)
	Half simple direct value mode (1 station occupied)
	Simple direct value mode (2 stations occupied)
	Half direct value mode (2 stations occupied)
	Full direct value mode (4 stations occupied)
Number of remote I/O points	32 points×number of occupied stations
Remote register I/O	4 words×number of occupied stations
Communication speed	10M/5M/2.5M/625k/156kbps (Select by parameter setting)
Connection cable	CC-Link Ver. 1.10 compatible cable (Shielded 3-core twisted pair cable)
Number of connected units	Up to 42 units when only remote device stations are connected
Monitor function	Position, speed, current, alarm

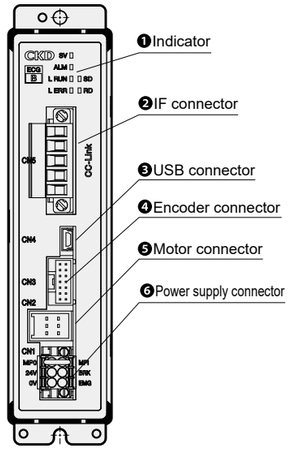
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 587.

[CC-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

Device No.	Half simple direct value mode Signal name
RYn0	Point number selection bit 0
RYn1	Point number selection bit 1
RYn2	Point number selection bit 2
RYn3	Point number selection bit 3
RYn4	Point number selection bit 4
RYn5	Point number selection bit 5
RYn6	Direct Value Travel Selection
RYn7	JOG/INCH (-) move start
RYn8	JOG/INCH (+) move start
RYn9	INCH Selection
RYnA	Point move start
RYnB	Homing Start
RYnC	Servo ON
RYnD	Alarm Reset
RYnE	Stop #
RYnF	Pause #
RY (n+1) 0 to RY (n+1) F	Unused

Device No.	Half simple direct value mode Signal name
RWw0	Position (direct value travel)
RWw1	
RWw2	-
RWw3	-

Cyclic data from controller

Device No.	Half simple direct value mode Signal name
RXn0	Point number confirmation bit 0
RXn1	Point number confirmation bit 1
RXn2	Point number confirmation bit 2
RXn3	Point number confirmation bit 3
RXn4	Point number confirmation bit 4
RXn5	Point number confirmation bit 5
RXn6	Direct value travel state
RXn7	Select output 1
RXn8	Select output 2
RXn9	-
RXnA	Point move complete
RXnB	Homing complete
RXnC	Servo ON state
RXnD	Alarm #
RXnE	Warning #
RXnF	Ready to operate
RX (n+1) 0 to RX (n+1) F	Unused

Device No.	Half simple direct value mode Signal name
RWr0	Position (monitor value)
RWr1	
RWr2	Speed (monitor value)
RWr3	Current (monitor value)

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT
CC-Link Connector	MSTB2,5/5-STF-5,08ABGYAU	PHOENIX CONTACT

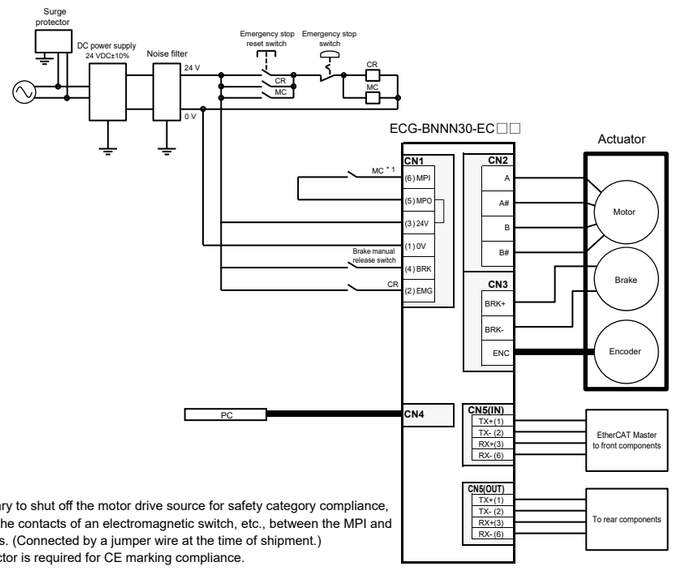
EtherCAT specifications and connection diagram (ECG-BNNN30-EC□□)

[Communication Specifications]

Item	Specifications
Communication speed	100 Mbps (Fast Ethernet, full-duplex)
Process data	Variable PDO mapping
Max. PDO data length	RxPDO: 64 bytes / TxPDO: 64 bytes
Station alias	0 to 65535 (set by parameter)
Connection cable	EtherCAT compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Node address	Master automatically assigns
Monitor function	Position, speed, current, alarm

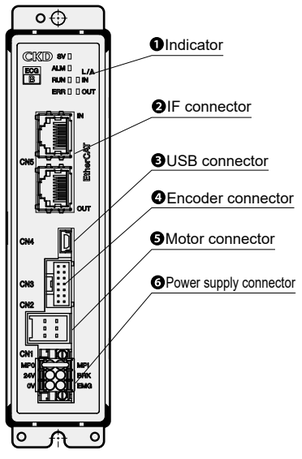
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 587.

[EtherCAT]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

INDEX	Sub Index	bit	Full Direct Value Mode Signal name
0x2001	0x01	0 to 5	Point number selection bits 0 to 5
		6	-
		7	JOG/INCH (-) move start
		8	JOG/INCH (+) move start
		9	INCH Selection
		10	Point move start
		11	Homing Start
		12	Servo ON
		13	Alarm Reset
		14	Stop #
		15	Pause #
		16 to 31	-
	0x02	0 to 3	-
		4	Data request
		5	Data R/W selection
		6 to 11	-
		12	Monitor request
		13 to 14	-
		15	Direct Value Travel Selection
		16 to 31	-
0x2003	0x01	0 to 31	Position (direct value travel)
	0x02	0 to 31	Positioning width (direct value travel)
	0x03	0 to 31	Speed (direct value travel)
	0x04	0 to 31	Acceleration (direct value travel)
	0x05	0 to 31	Deceleration (direct value travel)
	0x06	0 to 31	Pushing rate (direct value travel)
	0x07	0 to 31	Pushing speed (direct value travel)
	0x08	0 to 31	Pushing distance (direct value travel)
	0x09	0 to 31	Mode (direct value travel)
	0x0A	0 to 31	Gain magnification (direct value travel)
	0x0B	0 to 31	Write data
	0x0C	0 to 31	Data number
	0x0D	0 to 31	Monitor number 1
	0x0E	0 to 31	Monitor number 2

Cyclic data from controller

INDEX	Sub Index	bit	Full Direct Value Mode Signal name
0x2005	0x01	0 to 5	Point number confirmation bits 0 to 5
		6 to 9	-
		10	Point move complete
		11	Homing complete
		12	Servo ON state
		13	Alarm #
		14	Warning #
		15	Ready to operate
		16 to 31	-
	0x02	0 to 3	Data response
		4	Data complete
		5	Data write status
		6 to 7	-
		8 to 11	Monitor response
		12	Monitor complete
		13 to 14	-
		15	Direct value travel state
		16	Point zone
		17	Moving
		18	Zone 1
		19	Zone 2
		20	Soft limit over
		21	Soft limit over (-)
		22	Soft limit over (+)
		23 to 31	-
0x2007	0x01	0 to 31	Position (monitor value)
	0x02	0 to 31	Speed (monitor value)
	0x03	0 to 31	Current (monitor value)
	0x04	0 to 31	-
	0x05	0 to 31	Alarm (monitor value)
	0x06 to 0x0A	0 to 31	-
	0x0B	0 to 31	Read data
	0x0C	0 to 31	Data (alarm)
	0x0D	0 to 31	Monitor value 1
	0x0E	0 to 31	Monitor value 2

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT

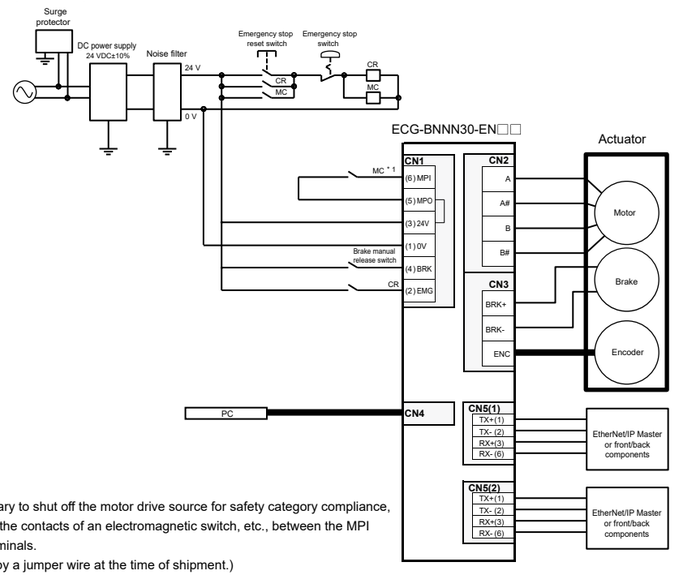
EtherNet/IP specifications and connection diagram (ECG-BNNN30-EN□□)

[Communication Specifications]

Item	Specifications
Communication protocol	EtherNet/IP
Communication speed	Automatic setting (100 Mbps/10 Mbps, full-duplex/half-duplex)
Number of occupied bytes	Input: 64 bytes/output: 64 bytes
IP address	Setting by parameter (0.0.0.0 to 255.255.255.255) Via DHCP server (any address)
RPI (Packet interval)	4 ms to 10000 ms
Connection cable	EtherNet/IP compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Monitor function	Position, speed, current, alarm

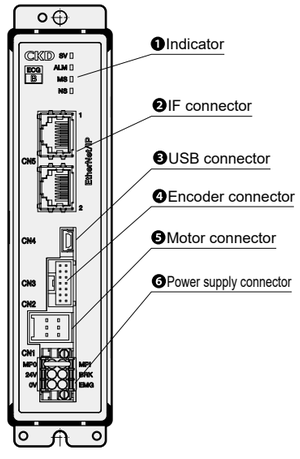
*The items that can be monitored vary depending on the operation mode. For details, please refer to P. 587.

[EtherNet/IP]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals.
(Connected by a jumper wire at the time of shipment.)
*2 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

Byte	bit	Full Direct Value Mode Signal name
0	0 to 5	Point number selection bits 0 to 5
	6	-
	7	JOG/INCH (-) move start
1	0	JOG/INCH (+) move start
	1	INCH Selection
	2	Point move start
	3	Homing Start
	4	Servo ON
	5	Alarm Reset
	6	Stop #
	7	Pause #
2 to 3	0 to 7	-
4	0 to 3	-
	4	Data request
	5	Data R/W selection
	6 to 7	-
5	0 to 3	
	4	Monitor request
	5 to 6	-
	7	Direct Value Travel Selection
6 to 7	0 to 7	-
8 to 11	0 to 7	Position (direct value travel)
12 to 15	0 to 7	Positioning width (direct value travel)
16 to 19	0 to 7	Speed (direct value travel)
20 to 23	0 to 7	Acceleration (direct value travel)
24 to 27	0 to 7	Deceleration (direct value travel)
28 to 31	0 to 7	Pushing rate (direct value travel)
32 to 35	0 to 7	Pushing speed (direct value travel)
36 to 39	0 to 7	Pushing distance (direct value travel)
40 to 43	0 to 7	Mode (direct value travel)
44 to 47	0 to 7	Gain magnification (direct value travel)
48 to 51	0 to 7	Write data
52 to 55	0 to 7	Data number
56 to 59	0 to 7	Monitor number 1
60 to 63	0 to 7	Monitor number 2

Cyclic data from controller

Byte	bit	Full Direct Value Mode Signal name
0	0 to 5	Point number confirmation bits 0 to 5
	6 to 7	-
1	0 to 1	-
	2	Point move complete
	3	Homing complete
	4	Servo ON state
	5	Alarm #
	6	Warning #
	7	Ready to operate
2 to 3	0 to 7	-
4	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to 7	-
5	0 to 3	Monitor response
	4	Monitor complete
	5 to 6	-
	7	Direct value travel state
6	0	Point zone
	1	Moving
	2	Zone 1
	3	Zone 2
	4	Soft limit over
	5	Soft limit over (-)
	6	Soft limit over (+)
	7	-
7	0 to 7	-
8 to 11	0 to 7	Position (monitor value)
12 to 15	0 to 7	Speed (monitor value)
16 to 19	0 to 7	Current (monitor value)
20 to 23	0 to 7	-
24 to 27	0 to 7	Alarm (monitor value)
28 to 47	0 to 7	-
48 to 51	0 to 7	Read data
52 to 55	0 to 7	Data (alarm)
56 to 59	0 to 7	Monitor value 1
60 to 63	0 to 7	Monitor value 2

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

● Attached items

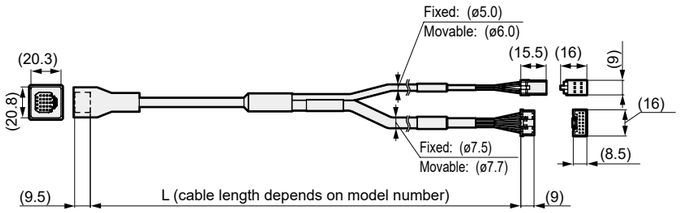
Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1.5/3-STF-3.5	PHOENIX CONTACT

Relay Cable

● Motor/encoder relay cable (fixed/flexible)

* Also selectable by actuator model

EA-CBLME4 - S 01
(1) (2)



❶Cable Type	
S	Fixed cable
R	Flexible cable

❷Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

* Please use all cables with a bending radius of 51 mm or more.

I/O cable

● I/O cable

* Also selectable by parallel I/O specification controller model

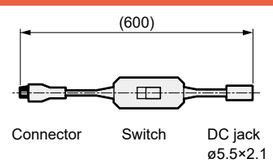
EA-CBLNP2 - 02
(1)

❶Cable length	
02	2 m
03	3 m
05	5 m
10	10 m

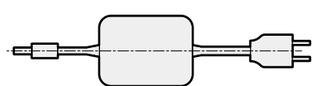
Brake release unit

● FLCR brake release unit

EA-BRK-UNIT



Customer-supplied: AC-DC Adapter



DC plug
ø5.5×2.1
Polarity: Center positive

AC-DC Adapter Specifications
Rated output voltage: 18-24 VDC
Rated current: 0.35 A or more

Special Order Product*

● Change of relay cable length

The length of the relay cable can be changed. The cable length can be changed within the range of 1 m to 10 m.

* For details on special order products, please contact our sales office.

Related parts model number table

● Recommended Power Supply

Manufacturer	Model No. *1	Manufacturer model number	Input voltage	Rated current *2	Output peak current *2 *3	Parallel connection	DIN rail compatible
Cosel Co., Ltd.	EA-PWR-KHNA240F-24-N2	KHNA240F-24-N2	85-264 VAC	10 A	15 A	×	×
	EA-PWR-KHNA240F-24	KHNA240F-24	85-264 VAC	10 A	15 A	×	Yes
OMRON Corporation	–	S8VK-S24024 *5	85-264 VAC	10 A	15 A	Yes *4	Yes
	–	S8VK-S48024 *5	85-264 VAC	20 A	30 A	Yes *4	Yes

*1 Can be purchased from CKD. - (hyphenated) products cannot be purchased from CKD, so please contact each manufacturer.
*2 Derating of output power may be necessary depending on the power supply mounting method, ambient temperature, input voltage, etc. For details on the operating conditions of the power supply, please refer to the manufacturer's website.
*3 Be aware of usage restrictions due to peak current, such as DUTY restrictions. For details, please refer to the manufacturer's website.
*4 Up to 2 units can be connected in parallel.
*5 To use as a UL/cUL compliant product, please use this power supply.

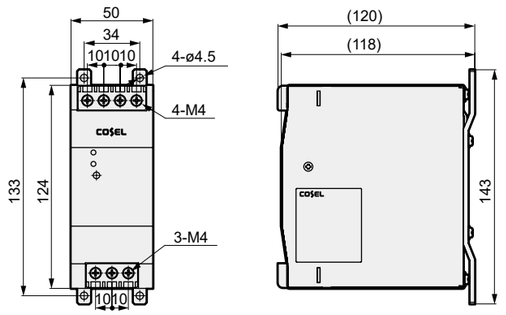
[Power Supply Specifications]

Item \ Model No.		EA-PWR-KHNA240F-24-N2 (screw mounting) EA-PWR-KHNA240F-24 (DIN rail mounting)
Manufacturer		Cosel Co., Ltd.
Manufacturer model number	Screw mounting	KHNA240F-24-N2
	DIN rail mounting	KHNA240F-24
Input voltage		85 to 264 VAC ø1 or 88 to 370 VDC
Output	Power	240 W
	Voltage/Current	24 V 10 A
	Variable voltage range	22.5 to 28.5 V
Attached functions	Overcurrent protection	Operates at 101% min of peak current
	Overvoltage protection	30.0 to 36.0 V
	Remote control	Possible
	Remote sensing	-
	Other	DC_OK display, ALARM display
Operating temperature/humidity		-25 to +70°C, 20 to 90%RH (no condensation), -40°C Bootable *
Applicable Standards	Safety standards: AC input	UL60950-1, C-UL (CSA60950-1), EN62368-1
	Safety standards: AC input	UL508, ANSI/ISA 12.12.01, ATEX certified, PSE compliant*
	Safety standards: DC input	UL60950-1, C-UL (CSA60950-1), EN62368-1
	Noise terminal voltage	Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B
	Harmonic current	IEC61000-3-2 (Class A) compliant*
Structure	External dimensions (W×H×D)	50×124×117 mm
	Weight	900 g max
	Cooling method	Natural air cooling

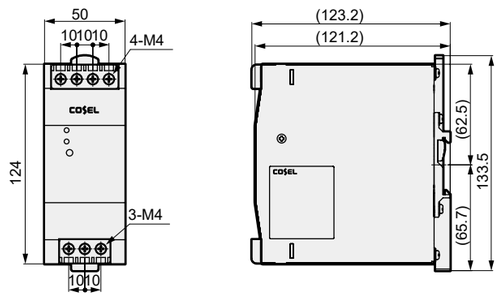
* For details, please refer to the manufacturer's website.
* CE marking and RoHS are obtained by manufacturer model number.

[External Dimension Drawing]

■ EA-PWR-KHNA240F-24-N2 (for 24V screw mounting)



■ EA-PWR-KHNA240F-24 (for 24V DIN rail mounting)



● Other parts

Product Name	Model No.
Noise filter for power supply (single-phase, 15 A)	AX-NSF-NF2015A-OD

* For the ferrite core to be used, please refer to the instruction manual.

ECR

Controller

CONTENTS

Product Introduction	596
● Specifications / Model No. Notation Method / Dimensions diagram / System configuration	598
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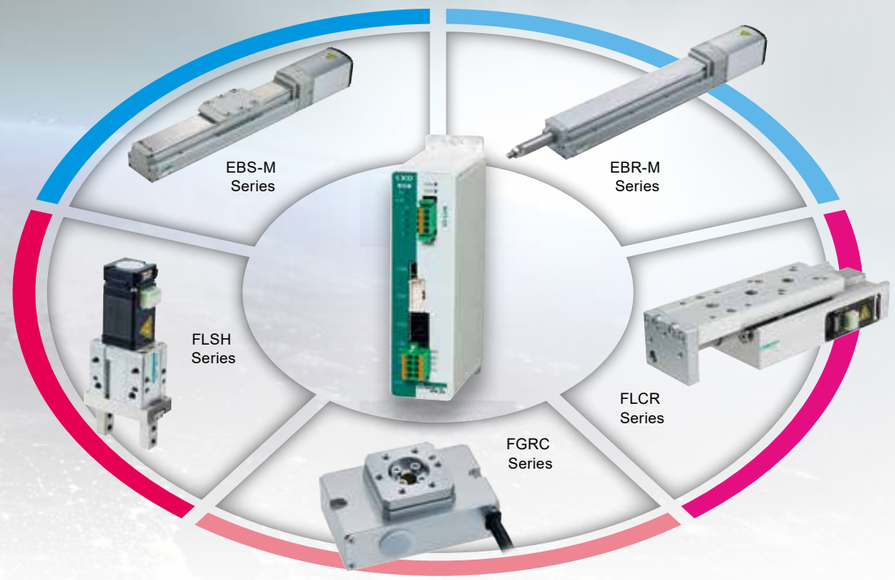
· IO-Link	604
· CC-Link	605
· EtherCAT	606
· Cable	607
· Related parts	608
⚠ Precautions for Use	626

Controller

ECMG
ECG
ECR
ESC4

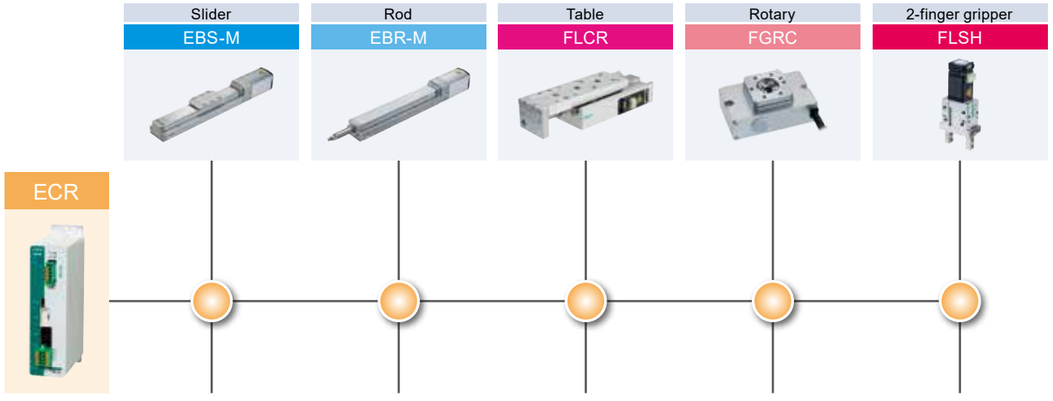
Ending

Single Axis Controller **ECR** Series



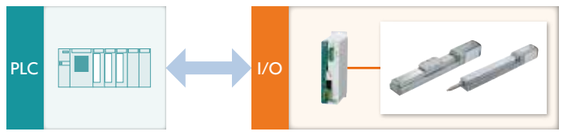
Common controller regardless of actuator model or size

List of Compatible Actuators



Compatible Interface

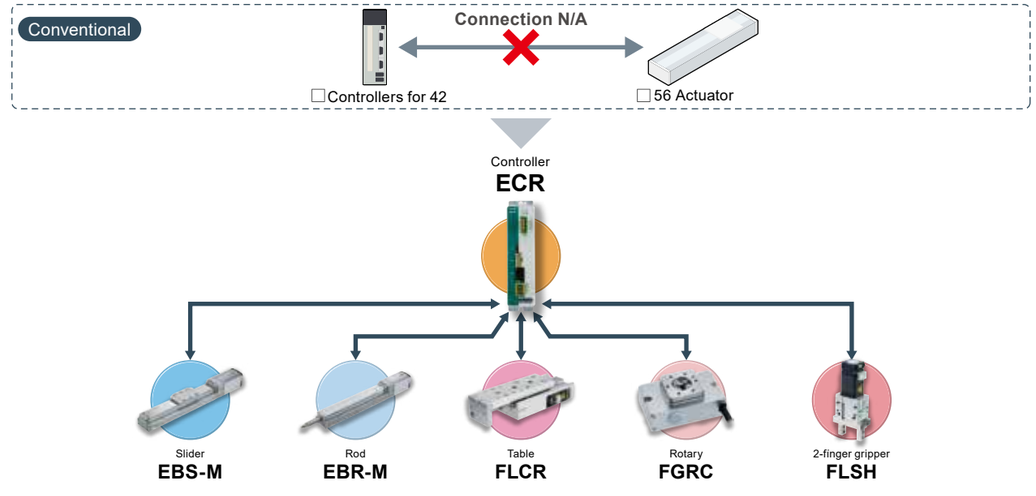
CC-Link EtherCAT IO-Link



Reduced design hours | Reduced man-hours | Reduced stock

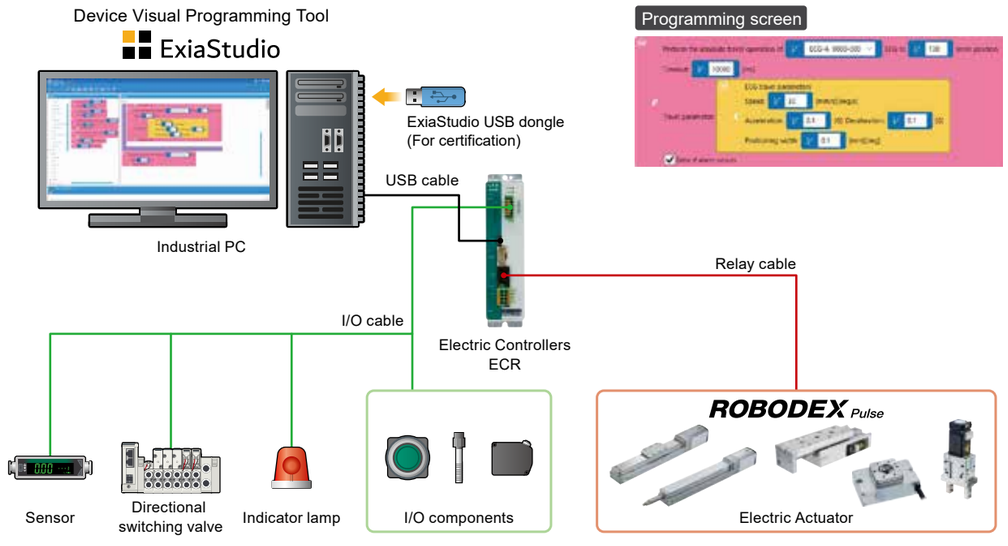
Commonization of controllers

Even actuators with different models, sizes, leads, and strokes can be operated with the same controller. It is possible to significantly reduce the man-hours for selection and ordering, as well as inventory. Since it is equipped with an automatic recognition function that reads actuator information, the initial setting man-hours can also be reduced.



Compatible with Device Visual Programming Tool "ExiaStudio"

Compatible with "ExiaStudio", which allows for easy programming with intuitive operation without requiring specialized knowledge. Electric actuators can be easily controlled with direct values on a PC. The controller ECR can also be used as a digital I/O terminal.



Controller

ECR Series

Controller for EBS-M, EBR-M, FLCR, FLSH, FGRC

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ECR-MNNN3B - NP A 02

❶ ❷ ❸

❶Interface Specifications	
NP	Parallel I/O (NPN, PNP common)
LK	IO-Link
CL	CC-Link
EC	EtherCAT

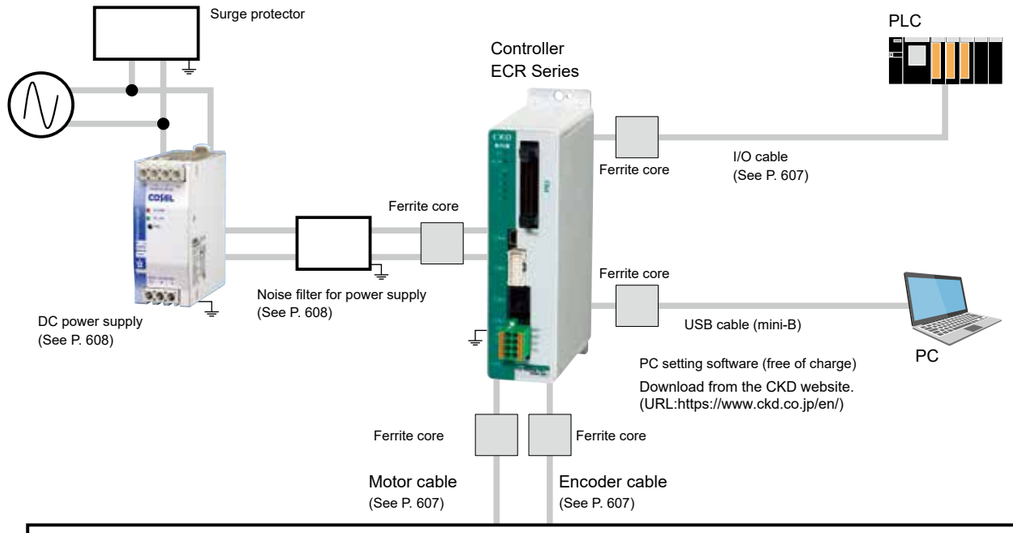
❷Mounting Method	
A	Standard mount
D	DIN rail mounting

❸IO Cable Length *1	
00	None
02	2 m
03	3 m
05	5 m
10	10 m

*1 Except when selecting "Parallel I/O" for the interface specification, please select "None".

EAR-Subject Item (product incorporating EAR99)

System Configuration



Connectable actuators

EBS-M Series
(P. 101)

EBR-M Series
(P. 159)

FLCR Series
(P. 225)

FGRC Series
(P. 247)

FLSH Series
(P. 271)

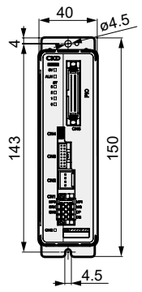
* For installation of noise filters, surge protectors, ferrite cores, and wiring methods, please refer to the instruction manual.

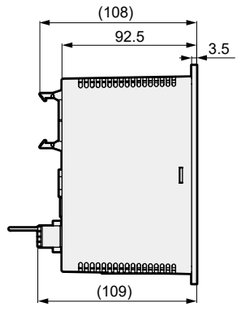
General Specifications

Item		Content						
Applicable Actuators		EBS-M, EBR-M			FLCR, FGRC, FLSH			
Applicable Motor Size		□35	□42	□56	□20	□25	□25L	□35
Configuration Tool		PC configuration software (S-Tools) Connection cable: USB cable (mini-B)						
External Interface	Parallel I/O specifications	24 VDC ±10%, max. 16 I/O points each, max. cable length 10 m						
	Field network specifications	IO-Link, CC-Link, EtherCAT						
Indicator light		Servo ON/OFF confirmation LED, alarm status confirmation LED Status confirmation LED, communication status confirmation LED (depends on each interface specification)						
Power supply voltage	Control power supply	24 VDC ±10% or 48 VDC ±10%						
	Motive power supply	24 VDC ±10% or 48 VDC ±10%						
Current Consumption	Control power supply	0.6 A or less						
	Motive power supply	2.8 A or less	3.7 A or less	6.1 A or less	1.1 A or less	2.1 A or less	3.2 A or less	3.0 A or less
Motor Max. Instantaneous Current		4.0 A or less	5.2 A or less	8.6 A or less	1.5 A or less	3.0 A or less	4.5 A or less	4.2 A or less
Brake current consumption		0.4 A or less						
Insulation Resistance		10 MΩ or more at 500 VDC						
Dielectric Strength		500 VAC for 1 minute						
Operating Ambient Temperature		0 to 40°C no freezing						
Operating Ambient Humidity		35 to 80% RH no condensation						
Storage Ambient Temperature		-10 to 50°C no freezing						
Storage ambient humidity		35 to 80% RH no condensation						
Operating atmosphere		No corrosive gas, explosive gas, or dust						
Protection Structure		IP20						
Weight		Approx. 400 g (standard mounting) Approx. 430 g (DIN rail mounting)						

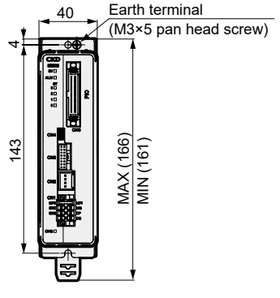
External Dimension Drawing

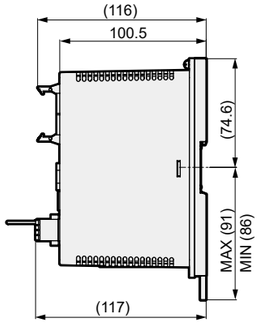
● Standard mount (ECR-MNNN3B-□A□)





● DIN rail mounting (ECR-MNNN3B-□D□)



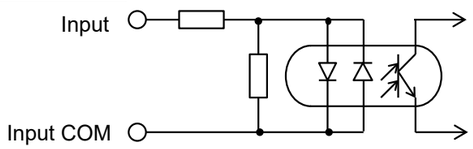


Parallel I/O (PIO) input/output circuit

Input Specifications

Item	ECR-MNNN3B-NP□□
Number of input points	16 points
Input voltage	24 VDC ±10%
Input current	3.7 mA/point
ON-state input voltage	19 V or more
OFF-state input current	0.2 mA or less

Input circuit

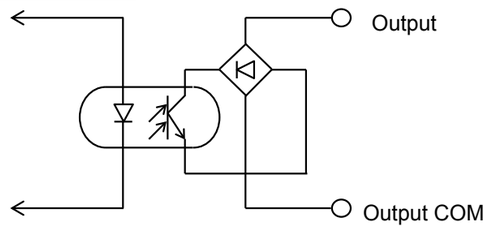


The input is non-polar.
(Input COM can be used for both+and -)

Output Specifications

Item	ECR-MNNN3B-NP□□
Number of output points	16 points
Load voltage	24 VDC ±10%
Load current	20 mA or less/point
ON-state internal voltage drop	3 V or less
OFF-state leakage current	0.1 mA or less
Output short-circuit protection circuit	Yes
Connected load	PLC, etc.

Output circuit



The output is non-polar.
(Output COM can be used for both+and -)

Parallel I/O (PIO) operation mode

The controller has 9 types of operation modes. Please set the appropriate operation mode for your application using the PC configuration software. The initial setting is "64-point mode".

Operation Mode	Number of positioning points	Overview
64-point mode	64 points	・Moving output ・point zone output: 1 point ・Zone output: 2 points
128-point mode	128 points	・Moving output ・Select output: ・2 points (Point zone, Zone 1, Zone 2, Moving)
256-point mode	256 points	・Select output: ・2 points (Point zone, Zone 1, Zone 2, Moving)
512-point mode	512 points	・Select output: ・1 point (Point zone, Zone 1, Zone 2, Moving)
Teach 64-point mode	64 points	・JOG (INCH) move start input ・Moving output ・Select output: ・2 points (Point zone, Zone 1, Zone 2, Moving)
Simple 7-point mode	7 points	・Moving output ・Zone output: 2 points
Solenoid valve mode Double 2-position type	2 points	・SW output: ・2 points ・Point zone output: 1 point ・Moving output ・Zone output: 2 points
Solenoid valve mode Double 3-position type	2 points	・SW output: ・2 points ・Point zone output: 1 point ・Moving output ・Zone output: 2 points
Solenoid valve mode Single type	2 points	・SW output: ・2 points ・Point zone output: 1 point ・Moving output ・Zone output: 2 points

Parallel I/O (PIO) Signal Abbreviation List

Input signal

Abbreviation	Name	Abbreviation	Name
PST	Point move start	JIM	JOG/INCH (-) move start
PSB*	Point number selection bit *	JIP	JOG/INCH (+) move start
OST	Homing Start	INCH	INCH Selection
SVON	Servo ON	P*ST	Point number * move start
ALMRST	Alarm Reset	V1ST	Solenoid valve move command 1
STOP	Stop	V2ST	Solenoid valve move command 2
PAUSE	Pause	VST	Solenoid valve move command
WRST	Start writing		
TEACH	Teach selection		

Output signal

Abbreviation	Name	Abbreviation	Name
PEND	Point move complete	ALM	Alarm
PCB*	Point number confirmation bit *	WARN	Warning
ACB*	Alarm confirmation bit *	READY	Ready to operate
PZONE	Point zone	WREND	Write complete
MOVE	Moving	TEACHS	Teach status
ZONE1	Zone 1	P*END	Point number *Move complete
ZONE2	Zone 2	SW1	Switch 1
OEND	Homing complete	SW2	Switch 2
SONS	Servo ON state		

Parallel I/O (PIO) operation mode and signal assignment

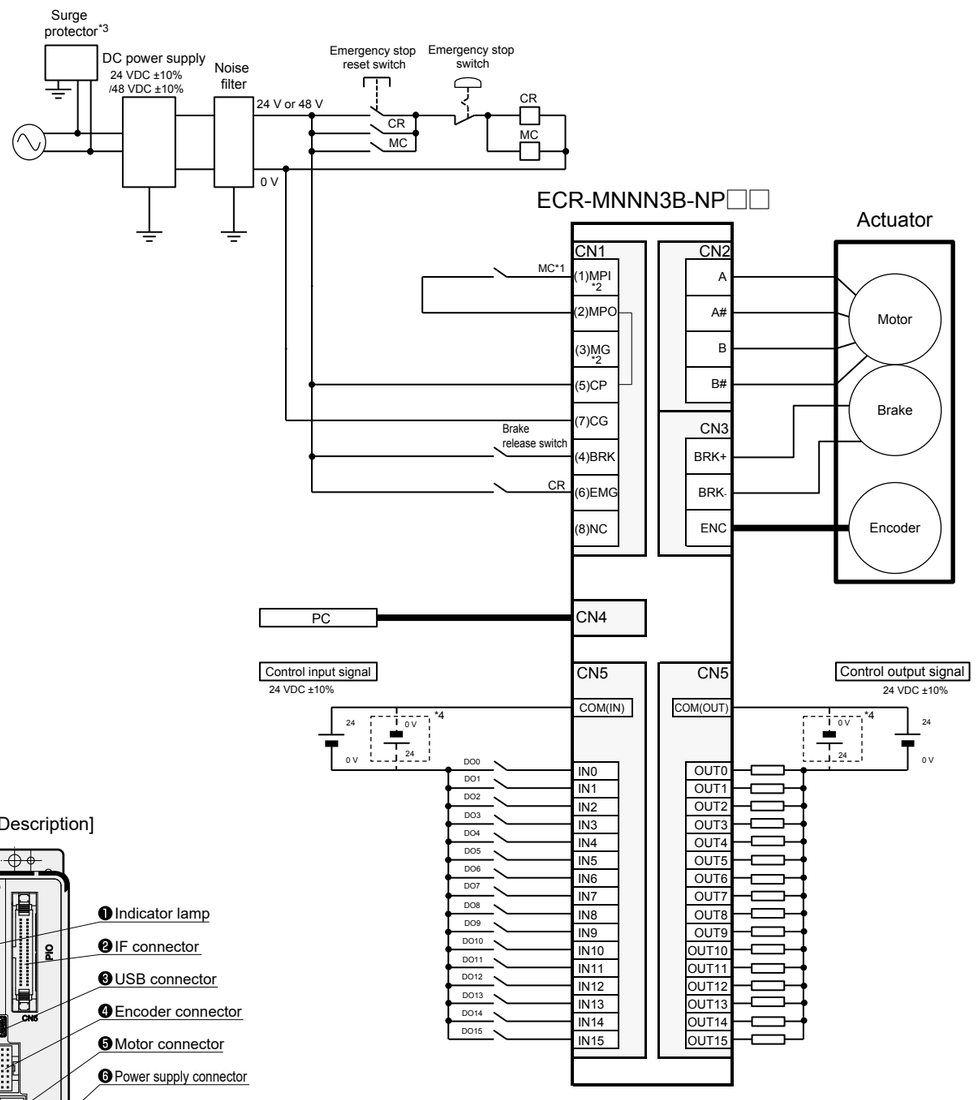
The signal assignment by operation mode is as shown in the figure below.

Operation Mode		64-point mode	128-point mode	256-point mode	512-point mode	Teach 64-point mode	Simple 7-point mode	Solenoid valve mode Double 2-position type	Solenoid valve mode Double 3-position type	Solenoid valve mode Single type
Number of positioning points		64	128	256	512	64	7	2	2	2
Input	IN0	PSB0	PSB0	PSB0	PSB0	PSB0	P1ST	V1ST	V1ST	-
	IN1	PSB1	PSB1	PSB1	PSB1	PSB1	P2ST	V2ST	V2ST	VST
	IN2	PSB2	PSB2	PSB2	PSB2	PSB2	P3ST	-	-	-
	IN3	PSB3	PSB3	PSB3	PSB3	PSB3	P4ST	-	-	-
	IN4	PSB4	PSB4	PSB4	PSB4	PSB4	P5ST	-	-	-
	IN5	PSB5	PSB5	PSB5	PSB5	PSB5	P6ST	-	-	-
	IN6	-	PSB6	PSB6	PSB6	TEACH	P7ST	-	-	-
	IN7	-	-	PSB7	PSB7	JIM	-	-	-	-
	IN8	-	-	-	PSB8	JIP	-	-	-	-
	IN9	-	-	-	-	INCH	-	-	-	-
	IN10	PST	PST	PST	PST	PST/ WRST	-	-	-	-
	IN11	OST	OST	OST	OST	OST	OST	OST	OST	OST
	IN12	SVON	SVON	SVON	SVON	SVON	SVON	SVON	SVON	SVON
	IN13	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST
	IN14	STOP #	STOP #	STOP #	STOP #	STOP #	STOP #	-	-	-
	IN15	PAUSE #	PAUSE #	PAUSE #	PAUSE #	PAUSE #	PAUSE #	-	-	-
Output	OUT0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	P1END	P1END	P1END	P1END
	OUT1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	P2END	P2END	P2END	P2END
	OUT2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	P3END	-	-	-
	OUT3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	P4END	-	-	-
	OUT4	PCB4	PCB4	PCB4	PCB4	PCB4	P5END	SW1	SW1	SW1
	OUT5	PCB5	PCB5	PCB5	PCB5	PCB5	P6END	SW2	SW2	SW2
	OUT6	PZONE	PCB6	PCB6	PCB6	TEACHS	P7END	-	-	-
	OUT7	MOVE	MOVE	PCB7	PCB7	MOVE	MOVE	MOVE	MOVE	MOVE
	OUT8	ZONE1	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PCB8	PZONE/ ZONE1/ ZONE2/ MOVE	ZONE1	ZONE1	ZONE1	ZONE1
	OUT9	ZONE2	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	ZONE2	ZONE2	ZONE2	ZONE2
	OUT10	PEND	PEND	PEND	PEND	PEND/ WREND	PZONE	PZONE	PZONE	PZONE
	OUT11	OEND	OEND	OEND	OEND	OEND	OEND	OEND	OEND	OEND
	OUT12	SONS	SONS	SONS	SONS	SONS	SONS	SONS	SONS	SONS
	OUT13	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#
	OUT14	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#
	OUT15	READY	READY	READY	READY	READY	READY	READY	READY	READY

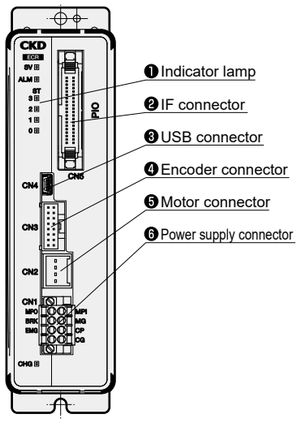
* # is a negative logic signal.

Parallel I/O connection diagram (ECR-MNNN3B-NP**)

[PIO]



[Panel Description]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 By using the MPI and MG terminals, the motor power supply and control power supply can be separated.
*3 A surge protector is required for CE marking compliance.
*4 It can also be used with the polarity reversed.

● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1,5/4-STF-3,5	PHOENIX CONTACT

Description of field network operation modes

Operation Mode	Overview
PIO mode: (PIO)	Point operation can be used, and the I/O signal assignment can be changed in operation mode (PIO), similar to the parallel I/O specification. However, direct value operation, which sets the operating conditions during operation directly from the PLC, cannot be selected. In addition, parameters cannot be read or written, and the monitor function cannot be used. For detailed items, please refer to the table below.
Simple direct value mode: (SDP)	By switching the direct value travel selection, you can select and use either the 512-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.
Full Direct Value Mode (FDP)	By switching the direct value travel selection, you can select and use either the 512-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC and operated. In addition, parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.

Operation Mode		PIO	SDP	FDP
Read/Write parameters		Not available	Available	Available
Direct Value Travel Selection *1		Not selectable	1	1
Number of positioning points		512	Unlimited	Unlimited
Direct Value Travel Item *2	Target Position	-	○	○
	Positioning Width	-	-	○
	Speed	-	-	○
	Acceleration	-	-	○
	Deceleration	-	-	○
	Pushing Rate	-	-	○
	Pushing Distance	-	-	○
	Pushing Speed	-	-	○
	Positioning Method	-	-	○
	Operation Method	-	-	○
	Stopping Method	-	-	○
	Acceleration/ Deceleration Method	-	-	○
Monitor Item *3	Position	-	○	○
	Speed	-	△	▲
	Current	-	△	▲
	Alarm	-	△	▲

*1: If the direct value travel selection is 0, it will operate with the value set in the point data. Therefore, the number of positioning points is up to 512.
*2: ○ indicates the Item operated with the value set by the PLC. - operates with the value set in the point data.
*3: ○ indicates items that can always be monitored on all networks. - indicates items that cannot be monitored.
△ indicates items that can be monitored by selecting from △ (only one item) for IO-Link and CC-Link, and simultaneously for EtherCAT.
▲ indicates items that can be monitored by selecting from ▲ (only one item) for IO-Link, and simultaneously for CC-Link and EtherCAT.

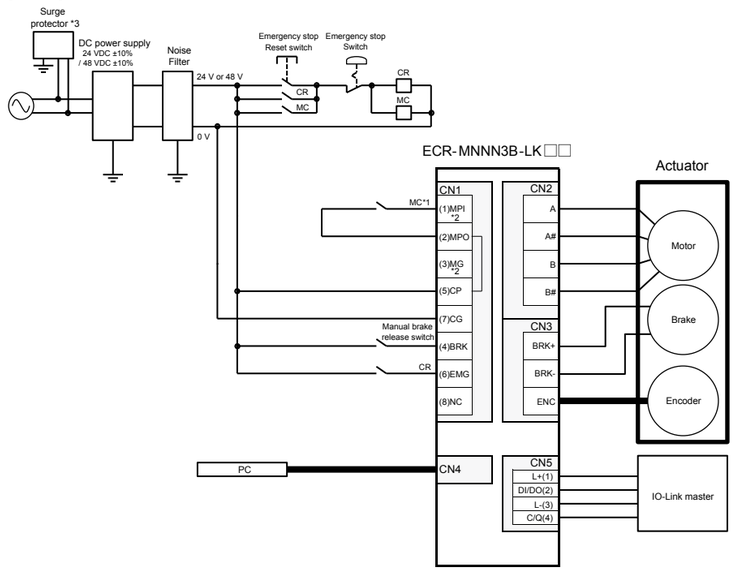
IO-Link specifications and connection diagram (ECR-MNNN3B-LK□□)

[Communication Specifications]

Item	Specifications
Communication protocol version	V1.1
Transmission speed	COM3 (230.4kbps)
Port	Class A
Process data length Input PD (in) data length	PIO mode: 2 bytes
	Simple direct value mode: 9 bytes
	Full Direct Value Mode: 9 bytes
Process data length (Output) PD (out) data length	PIO mode: 2 bytes
	Simple direct value mode: 7 bytes
	Full Direct Value Mode: 22 bytes
Minimum cycle time	PIO mode: 1 ms
	Simple direct value mode: 2 ms
	Full Direct Value Mode: 2.5 ms
Monitor function	Position, speed, current, alarm

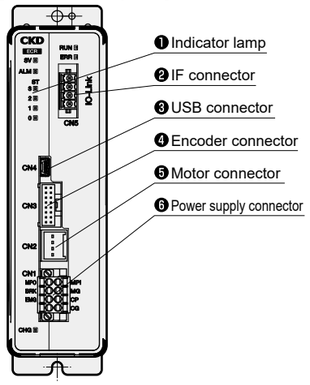
* The items that can be monitored vary depending on the mode. For details, please refer to P. 603.

[IO-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 By using the MPI and MG terminals, the motor power supply and control power supply can be separated.
*3 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

PD (OUT)	bit	Full Direct Value Mode Signal name
0	7	Pause #
	6	Stop #
	5	Alarm Reset
	4	Servo ON
	3	Homing Start
	2	Point move start
	1	-
	0	Point number selection bit 8
1	7 to 0	Point number selection bits 7 to 0
2	7	-
	6	-
	5 to 4	Direction of rotation
	3 to 1	Monitor number
	0	Direct Value Travel Selection
3 to 6	7 to 0	Position
7 to 8	7 to 0	Positioning Width
9 to 10	7 to 0	Speed
11	7 to 0	Acceleration
12	7 to 0	Deceleration
13	7 to 0	Pushing Rate
14	7 to 0	Pushing Speed
15 to 18	7 to 0	Pushing Distance
19 to 20	7 to 0	Gain magnification
21	7	Positioning Method
	6 to 5	Operation Method
	4 to 3	Acceleration/Deceleration Method
	2 to 0	Stopping Method

Cyclic data from controller

PD (IN)	bit	Full Direct Value Mode Signal name
0	7	Ready to operate
	6	Warning #
	5	Alarm #
	4	Servo ON state
	3	Homing complete
	2	Point move complete
	1	-
	0	Point number confirmation bit 8
1	7 to 0	Point number confirmation bits 7 to 0
2	7 to 5	-
	4	Zone 2
	3	Zone 1
	2	Moving
	1	Point zone
	0	Direct move state
3 to 6	7 to 0	Position (monitor value)
7 to 8	7 to 0	Monitor value

* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1,5/4-STF-3,5	PHOENIX CONTACT
IO-Link Connector	FMC1,5/4-ST-3,5-RF	PHOENIX CONTACT

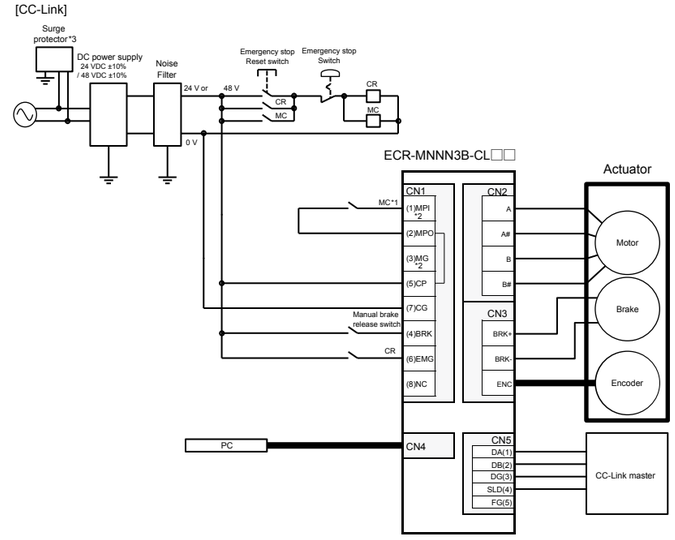
CC-Link specifications and connection diagram (ECR-MNNN3B-CL□□)

[Communication Specifications]

Item	Specifications
CC-Link Version	ver. 1.10
Station type	Remote device station
Remote station number	1 to 64 (set by parameter setting)
Operation mode and number of occupied stations	PIO mode (1 station occupied)
	Simple direct value mode (2 stations occupied)
	Full direct value mode (4 stations occupied)
Number of remote I/O points	PIO mode: 32 points
	Simple direct value mode: 64 points each
	Full Direct Value Mode: 128 points each
Remote register I/O	PIO mode: 4 words each
	Simple direct value mode: 8 words each
	Full Direct Value Mode: 16 words each
Communication speed	10M/5M/2.5M/625k/156kbps (Select by parameter setting)
Connection cable	CC-Link Ver. 1.10 compatible cable (Shielded 3-core twisted pair cable)
Number of connected units	Up to 42 units when only remote device stations are connected
Monitor function	Position, speed, current, alarm

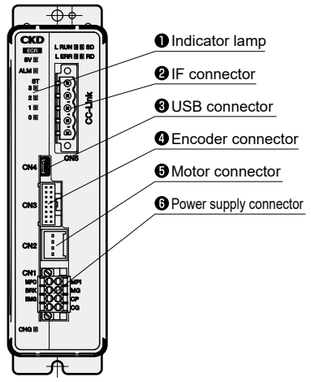
* The items that can be monitored vary depending on the mode. For details, please refer to P. 603.

[CC-Link]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 By using the MPI and MG terminals, the motor power supply and control power supply can be separated.
*3 A surge protector is required for CE marking compliance.

[Panel Description]



Cyclic data from master

Device No.	Full Direct Value Mode Signal name
RYn0 to RYnF	PIO input signal (Compliant with parallel I/O signal assignment)
RY (n+1) 0 to RY (n+1) 3	-
RY (n+1) 4	Data request
RY (n+1) 5	Data R/W selection
RY (n+1) 6 to RY (n+1) B	-
RY (n+1) C	Monitor request
RY (n+1) D	-
RY (n+1) E	
RY (n+1) F	Direct Value Travel Selection
RY (n+2) 0 to RY (n+7) 9	-
RY (n+7) A	Error reset request flag
RY (n+7) B to RY (n+7) F	-

* For other operation modes, please refer to the instruction manual.

Cyclic data from controller

Device No.	Full Direct Value Mode Signal name
RXn0 to RXnF	PIO output signal (Compliant with parallel I/O signal assignment)
RX (n+1) 0 to RX (n+1) 3	Data response
RX (n+1) 4	Data complete
RX (n+1) 5	Data write status
RX (n+1) 6	-
RX (n+1) 7	
RX (n+1) 8 to RX (n+1) B	Monitor response
RX (n+1) C	Monitor complete
RX (n+1) D	-
RX (n+1) E	
RX (n+1) F	Direct value travel state
RX (n+2) 0	Point zone
RX (n+2) 1	Moving
RX (n+2) 2	Zone 1
RX (n+2) 3	Zone 2
RX (n+2) 4 to RX (n+7) 9	-
RX (n+7) A	Error status flag
RX (n+7) B	Remote Ready flag
RX (n+7) C to RX (n+7) F	-

● Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1,5/4-STF-3,5	PHOENIX CONTACT
CC-Link Connector	MSTB2,5/5-STF-5,08ABGYAU	PHOENIX CONTACT

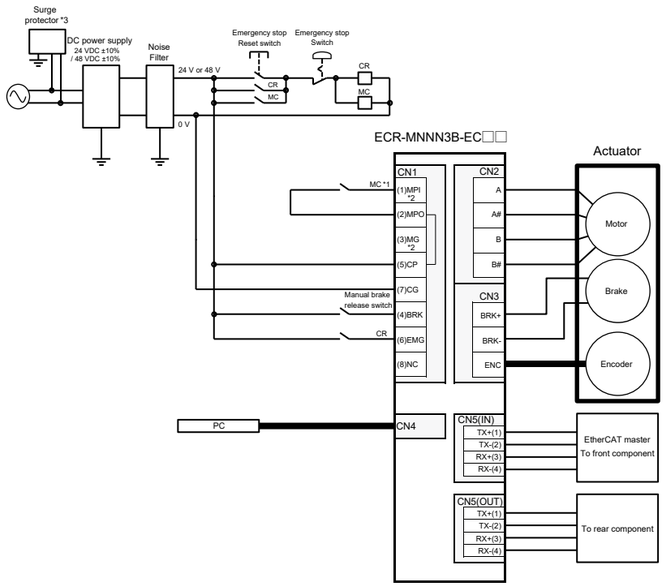
EtherCAT specifications and connection diagram (ECR-MNNN3B-EC□□)

[Communication Specifications]

Item	Specifications
Communication speed	100 Mbps (Fast Ethernet, full-duplex)
Process data	Variable PDO mapping
Max. PDO data length	RxPDO: 64 bytes / TxPDO: 64 bytes
Station alias	0 to 65535 (set by parameter)
Connection cable	EtherCAT compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Node address	Master automatically assigns
Monitor function	Position, speed, current, alarm

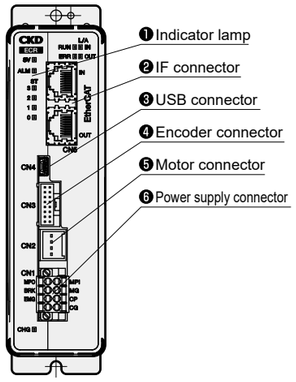
* The items that can be monitored vary depending on the mode. For details, please refer to P. 603.

[EtherCAT]



*1 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (Connected by a jumper wire at the time of shipment.)
*2 By using the MPI and MG terminals, the motor power supply and control power supply can be separated.
*3 A surge protector is required for CE marking compliance.

[Panel Description]



Process data from master

INDEX	Sub Index	bit	Full Direct Value Mode Signal name
0x2001	0x01	0 to 15	PIO input signal (Compliant with parallel I/O signal assignment)
		16 to 31	-
	0x02	0 to 3	-
		4	Data request
		5	Data R/W selection
		6 to 11	-
		12	Monitor request
		13	-
		14	-
		15	Direct Value Travel Selection
		16 to 31	-

* For other operation modes, please refer to the instruction manual.

Process data from controller

INDEX	Sub Index	bit	Full Direct Value Mode Signal name
0x2005	0x01	0 to 15	PIO output signal (Compliant with parallel I/O signal assignment)
		16 to 31	-
	0x02	0 to 3	Data response
		4	Data complete
		5	Data write status
		6	-
		7	-
		8 to 11	Monitor response
		12	Monitor complete
		13	-
		14	-
		15	Direct value travel state
		16	Point zone
		17	Moving
		18	Zone 1
		19	Zone 2
		20 to 31	-

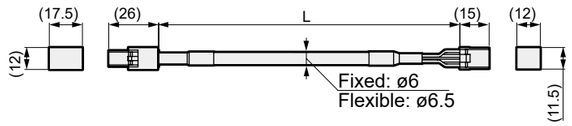
Attached items

Product Name	Manufacturer model number	Manufacturer name
Power connector	DFMC1,5/4-STF-3,5	PHOENIX CONTACT

Relay Cable

Motor cable (fixed/flexible)

* Also selectable by actuator model



* Please use all cables with a bending radius of 63 mm or more.

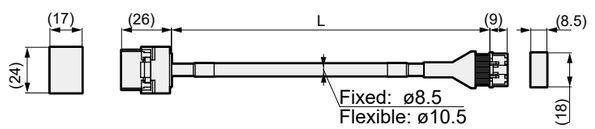
EA-CBLM1 - S 01
❶ ❷

❶Cable Type	
S	Fixed cable
R	Flexible cable

❷Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

Encoder cable (fixed/flexible)

* Also selectable by actuator model



* Please use all cables with a bending radius of 63 mm or more.

EA-CBLE1 - S 01
❶ ❷

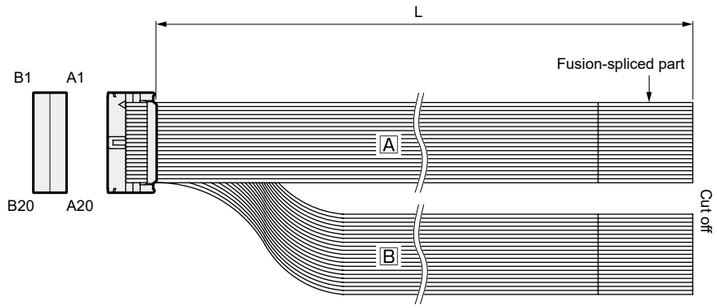
❶Cable Type	
S	Fixed cable
R	Flexible cable

❷Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

I/O cable

I/O cable

* Also selectable by parallel I/O specification controller model



EA-CBLNP1 - 02
❶

❶Cable length	
02	2 m
03	3 m
05	5 m
10	10 m

Related parts model number table

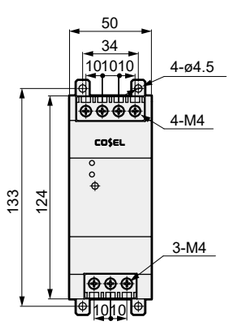
● DC Power Supply

Item \ Model No.		EA-PWR-KHNA240F-24-N2 (screw mounting) / EA-PWR-KHNA240F-24 (DIN rail mounting)	EA-PWR-KHNA480F-48-N2 (screw mounting) / EA-PWR-KHNA480F-48 (DIN rail mounting)
Manufacturer		Cosel Co., Ltd.	
Manufacturer model number	Screw mounting	KHNA240F-24-N2	KHNA480F-48-N2
	DIN rail mounting	KHNA240F-24	KHNA480F-48
Input voltage		85 to 264 VAC ø1 or 88 to 370 VDC	85 to 264 VAC ø1 or 88 to 350 VDC
Output	Power	240 W	480 W
	Voltage/Current	24 V 10 A	48 V 10 A
	Variable voltage range	22.5 to 28.5 V	45.0 to 55.2 V
Attached functions	Overcurrent protection	Operates at 101% min of peak current	
	Overvoltage protection	30.0 to 36.0 V	57.6 to 67.2 V
	Remote control	Possible	
	Remote sensing	-	
	Other	DC_OK display, ALARM display	
Operating temperature/humidity		-25 to +70°C, 20 to 90%RH (no condensation), -40°C Bootable *	
Applicable Standards	Safety standards AC input	UL60950-1, C-UL(CSA60950-1), EN62368-1	
		UL508, ANSI/ISA 12.12.01, ATEX certified, PSE compliant*	
	Safety standards DC input	UL60950-1, C-UL(CSA60950-1), EN62368-1	
	Noise terminal voltage	Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B	
	Harmonic current	IEC61000-3-2 (Class A) compliant*	
Structure	External dimensions (W×H×D)	50×124×117 mm	70×124×117 mm
	Weight	900 g max	1,200 g max
	Cooling method	Natural air cooling	

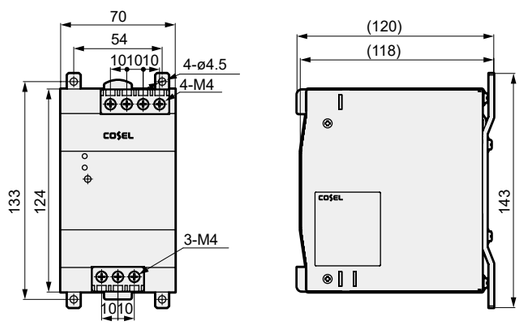
* For details, please refer to the manufacturer's website.
* CE marking and RoHS are obtained by manufacturer model number.

Names of Parts and External Dimension Drawings

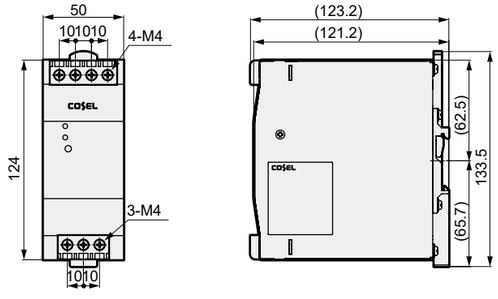
● EA-PWR-KHNA240F-24-N2 (for 24 V screw mounting)



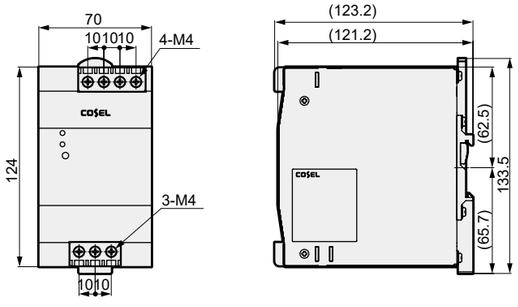
● EA-PWR-KHNA480F-48-N2 (for 48 V screw mounting)



● EA-PWR-KHNA240F-24 (for 24 V DIN rail mounting)



● EA-PWR-KHNA480F-48 (for 48 V DIN rail mounting)



● Other parts

Product Name	Model No.
Noise filter for power supply (single-phase, 15 A)	AX-NSF-NF2015A-OD

* For the ferrite core to be used, please refer to the instruction manual.

MEMO

ESC4

Controller

CONTENTS

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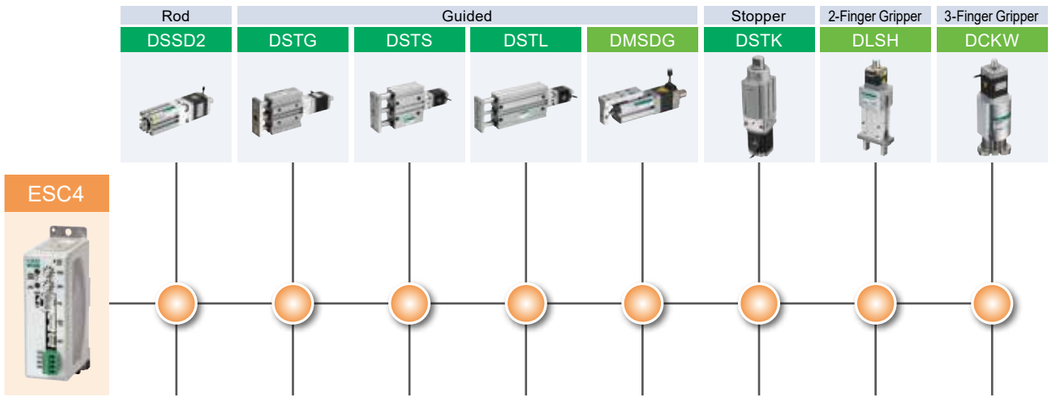
● Specifications / Model No. Notation Method / Dimensions diagram / System configuration	614
· Parallel I/O (PIO)	616
· Cable	618
· Related parts	619
⚠ Precautions for Use	626

Controller
ECMG
ECG
ECR
ESC4

Single Axis Controller ESC4 Series

A dedicated controller that pursues simplicity

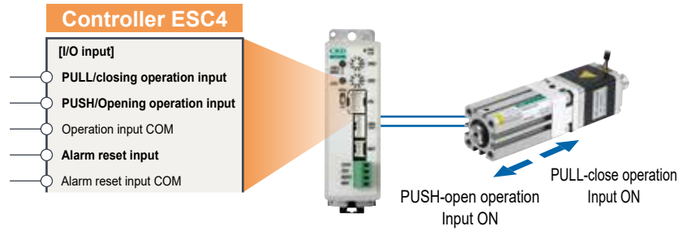
List of Compatible Actuators



Can operate with signals from 3 input points

Easy Controls | Reduced man-hours

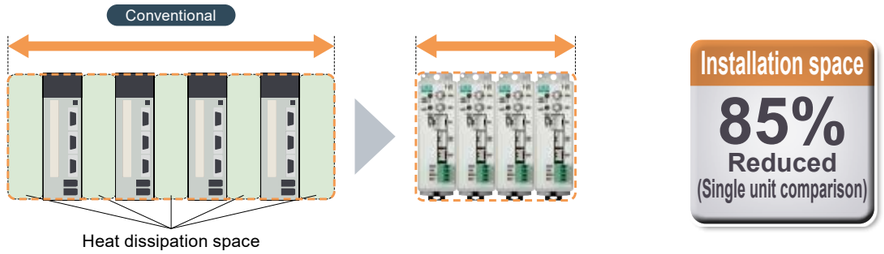
No program is required, and it can be operated with simple wiring. No special tools are required, and it can be used with the same feeling as air equipment, so setting man-hours can be reduced.



Compact, can be installed adjacently

Space saving

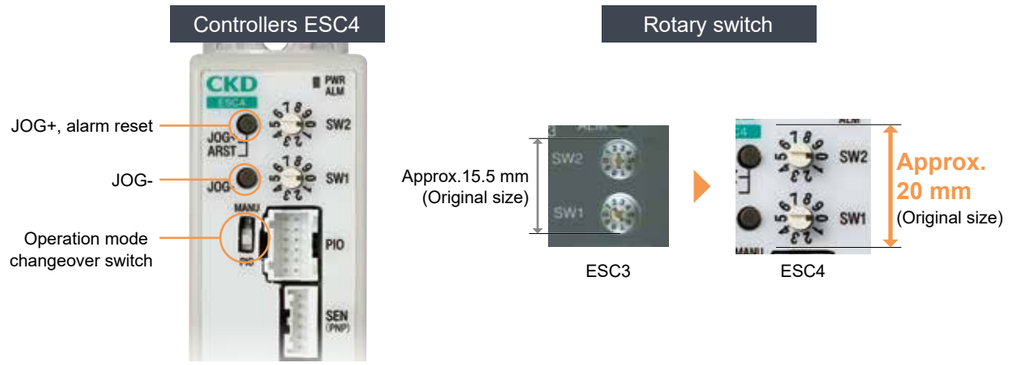
Since heat is dissipated from the top and bottom surfaces, no heat dissipation space is required on the sides. Therefore, controllers can be installed adjacently. In addition, since it is the smallest size controller in the ROBODEX series, it is possible to reduce the footprint.



Improved manual operability

Easy adjustment

Manual operability has been improved compared to conventional products. An operation mode has been added, and JOG operation and alarm reset can be operated manually. The visibility of the rotary switch has also been improved.



Controller

ESC4 Series

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ESC4 - D P - 01 20 - 06 100

❶ Controller Mounting Method

D	DIN rail mounting
P	Panel mount

❷ Model Group

01	DSSD2
02	DSTK
03	DSTG
04	DSTS
05	DSTL
06	DMSDG
07	DLSH
08	DCKW

❸ Actuator size

08	8
16	16
20	20
32	32
50	50

❹ Actuator lead *2

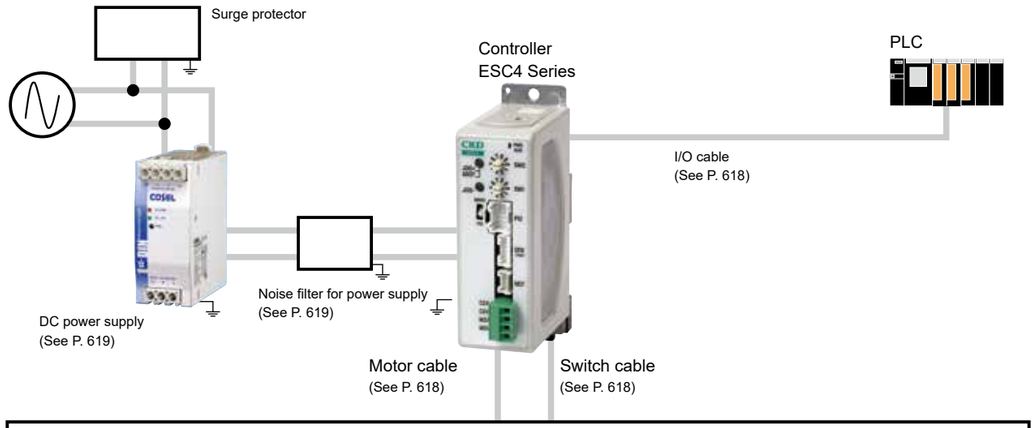
NN	None
06	6 mm
09	9 mm
12	12 mm

❺ Actuator stroke *3

NNN	None
010	10 mm
020	20 mm
025	25 mm
030	30 mm
050	50 mm
075	75 mm
100	100 mm
150	150 mm
200	200 mm

*1 Also selectable by actuator model.
*2 When selecting model group 06 (DMSDG), 07 (DLSH), or 08 (DCKW), please select “Blank".
*3 When selecting model group 07 (DLSH) or 08 (DCKW), please select “Blank".

System Configuration



Connectable actuators

DSSD2 (P. 417)

DSTK (P. 427)

DSTG (P. 439)

DSTS (P. 453)

DSTL (P. 467)

DMSDG (P. 485)

DLSH (P. 499)

DCKW (P. 509)

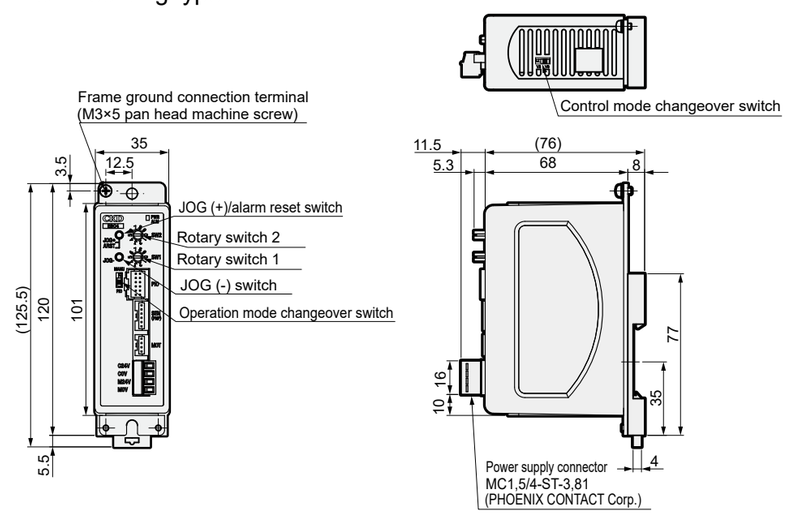
* For installation of noise filters, surge protectors, and wiring methods, please refer to the instruction manual.

General Specifications

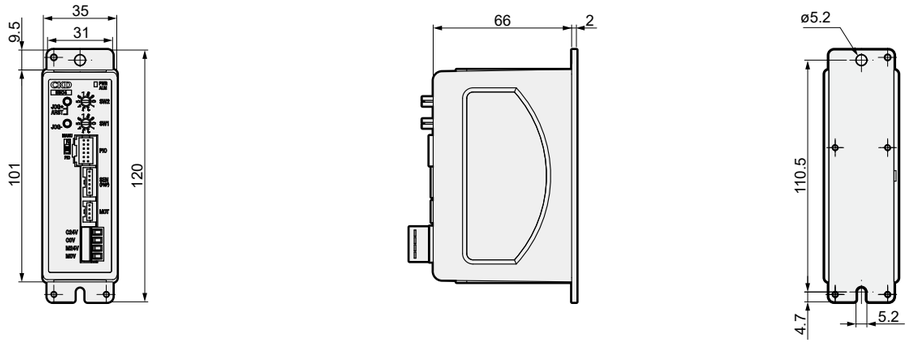
Item		Content				
Applicable Actuators		DSSD2, DSTK, DSTG, DSTS, DSTL, DMSDG, DLSH, DCKW				
Applicable Motor Size		□20	□28	□35	□42	□56
Configuration Tool		Rotary switch 1, rotary switch 2, control mode switch, operation mode switch, JOG (+)/alarm reset switch, JOG (-) switch				
External Interface		24 VDC ±10%, 3 input points, 3 output points, max. cable length 10 m				
Indicator light		Green lit: Motor energized, flashing green: Motor de-energized, or in manual operation mode Red lit Alarm condition (system error), flashing red (operation error)				
Power supply voltage	Control power supply	24 VDC ±10%				
	Motive power supply	24 VDC ±10%				
Current Consumption	Control power supply	100 mA or less				
	Motive power supply	0.8 A or less	2 A or less	3 A or less	3 A or less	3 A or less
Insulation Resistance		10 MΩ or more at 500 VDC				
Dielectric Strength		500 VAC for 1 minute				
Operating Ambient Temperature		0 to 40°C no freezing				
Operating Ambient Humidity		35 to 85% RH no condensation				
Storage Ambient Temperature		-10 to 50°C no freezing				
Storage ambient humidity		35 to 85% RH no condensation				
Operating atmosphere		No corrosive gas, explosive gas, or dust				
Protection Structure		IP20				
Weight		Approx. 180 g				

External Dimension Drawing

● DIN rail mounting type



● Panel mounting type

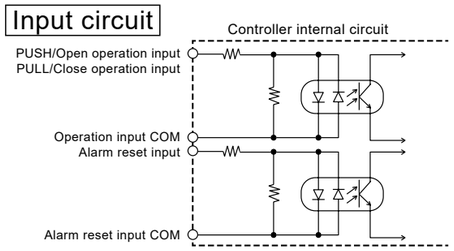


Parallel I/O (PIO) input/output circuit

Input Specifications

Item	ESC4
Number of input points	3 points
Input voltage	24 VDC ±10%
Input current	4 mA/point
ON-state input current	3 mA or more
OFF-state input current	0.5 mA or less

Input circuit

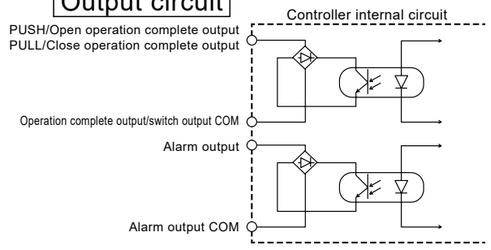


The input is non-polar. (Input COM can be used for both+and -)

Output Specifications

Item	ESC4
Number of output points	3 points
Load voltage	24 VDC ±10%
Load current	9 mA/point
ON-state internal voltage drop	6 V or less
OFF-state leakage current	10 μA
Output short-circuit protection circuit	Yes
Connected load	PLC, etc.

Output circuit



The output is non-polar. (Output COM can be used for both+and -)

Rotary switch setting

Model	Switch 1	Switch 2
DSSD2	PULL speed	PUSH speed
DSTK		
DSTG		
DSTS		
DSTL		
DMSDG	PUSH & PULL speed	Pushing Force
DLSH	Opening/closing speed	Gripping Force
DCKW		

Control mode switch setting

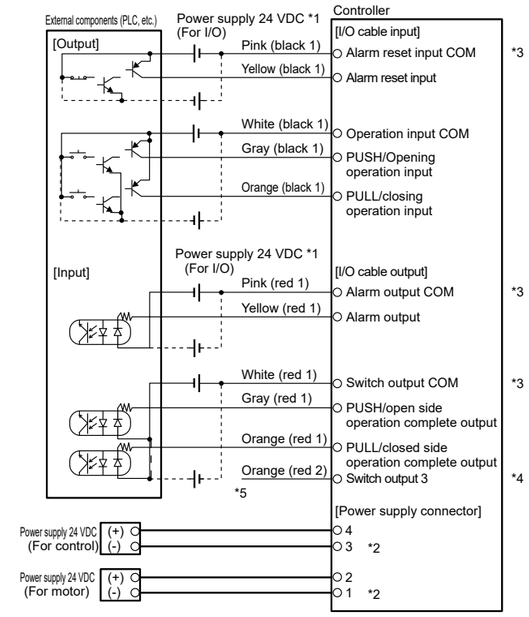
Code	Control mode	Overview
V2	Solenoid valve mode double 2-position	This is a mode equivalent to the 2 positions of a solenoid valve. Moves between 2 points by turning ON the operation input (edge input).
V3	Solenoid valve mode double 3-position	This is a mode equivalent to the 3 positions of a solenoid valve. Moves between 2 points by turning ON the operation input (level input).

Operation mode switch setting

Code	Operation Mode	Overview
MANU	Manual	This is a mode in which the actuator is moved with the JOG (+) and JOG (-) switches on the front of the controller. It is used for trial runs and adjusting the position of the cylinder switch. In this operation mode, input signals from the PLC are not accepted. When an alarm occurs, the JOG (+) switch can be used as an alarm reset switch.
PIO	PIO	This is a mode in which the actuator is moved by an input signal from the PLC. In this operation mode, the JOG (+)/alarm reset switch and JOG (-) switch on the front of the controller are not accepted.

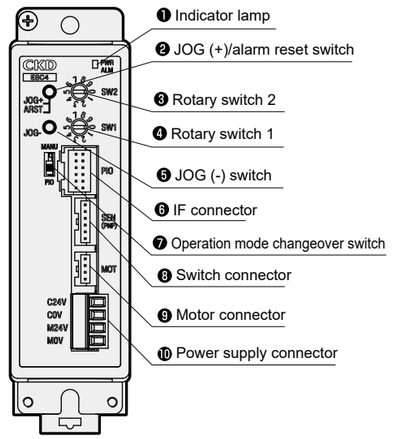
Parallel I/O (PIO) Connection Diagram

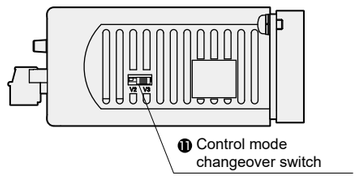
Basic configuration



*1) The polarity of the I/O power supply should be determined by the specifications of the external equipment.
*2) The control power supply (-) and the motive power supply (-) are connected internally.
*3) Each COM is not connected internally. Be sure to wire them.
*4) Switch output 3 is unused, so do not connect anything to it. Also, please perform insulation treatment.
*5) The ( ) in the cable color indicates the color and number of dots on the cable.

[Panel Description]





● Attached items

Power connector (included with controller)

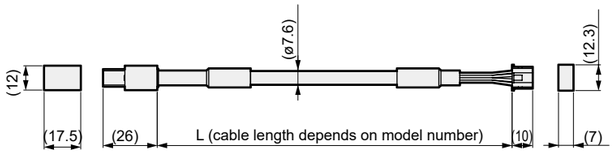
Model No.: MC1,5/4-ST-3,81 (manufactured by PHOENIX CONTACT)
Electric wire size: 0.14 to 1.5 mm² / 28 to 16 AWG
Stripped wire length: 7 mm
Tightening Torque: 0.22 to 0.25 N·m

Pin number	Signal name	Name
1	M0V	Motive power supply (-)
2	M24V	Motive power supply (+)
3	C0V	Control power supply (-)
4	C24V	Control power supply (+)

Relay Cable

● Motor relay cable

* Also selectable by actuator model
* This is a flexible cable
* Can be used with either ESC3 or ESC4.

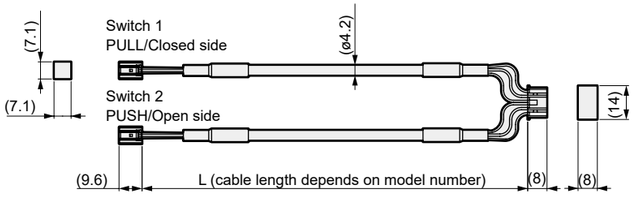


ESC3 - M2 - R ❶

❶Cable Length	
1	1 m
3	3 m
5	5 m
X	10 m

● Switch relay cable

* Also selectable by actuator model
* This is a flexible cable
* Can be used with either ESC3 or ESC4.

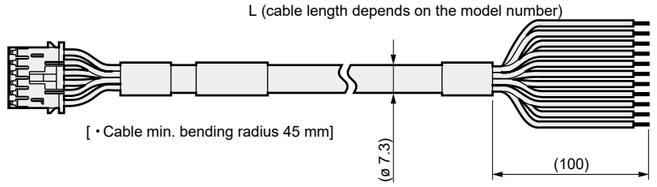


ESC3 - S2 - R ❶

❶Cable Length	
1	1 m
3	3 m
5	5 m
X	10 m

● I/O cable

* Also selectable by actuator model
* Can be used with either ESC3 or ESC4.



ESC3 - NP2 - ❶

❶Cable Length	
1	1 m
3	3 m
5	5 m
X	10 m

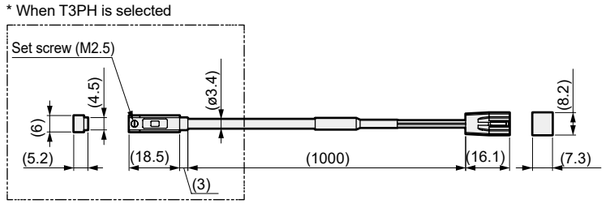
● Cylinder switch cable

* Also selectable by actuator model
* For compatible switch types, please refer to the specifications P. for each actuator.
* Can be used with either ESC3 or ESC4.

ESC3 - SW - T3PH ❶

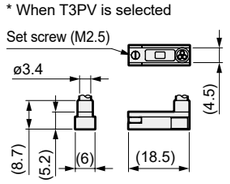
❶Switch type	
T3PH	T-type straight type
T3PV	T-type L-shape type
F3PH	F-type straight type
F3PV	F-type L-shape type

* When T3PH is selected

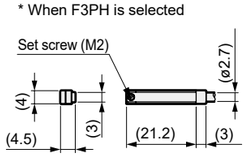


By selecting the switch model number, the dotted line part will be as follows.

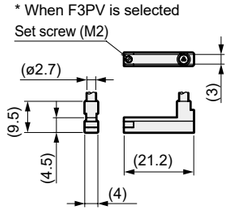
* When T3PV is selected



* When F3PH is selected



* When F3PV is selected



Related parts model number table

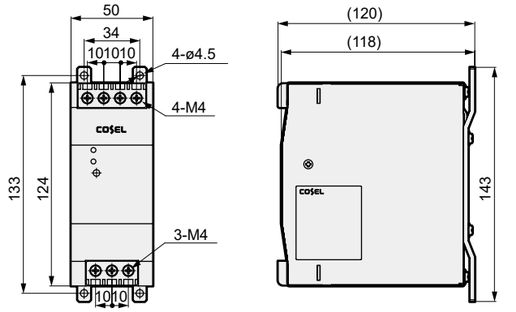
● DC Power Supply

Item		Model No. EA-PWR-KHNA240F-24-N2 (screw mounting) EA-PWR-KHNA240F-24 (DIN rail mounting)
Manufacturer		Cosel Co., Ltd.
Manufacturer model number	Screw mounting	KHNA240F-24-N2
	DIN rail mounting	KHNA240F-24
Input voltage		85 to 264 VAC ø1 or 88 to 370 VDC
Output	Power	240 W
	Voltage/Current	24 V 10 A
	Variable voltage range	22.5 to 28.5 V
Attached functions	Overcurrent protection	Operates at 101% min of peak current
	Overvoltage protection	30.0 to 36.0 V
	Remote control	Possible
	Remote sensing	-
	Other	DC_OK display, ALARM display
Operating temperature/humidity		-25 to +70°C, 20 to 90%RH (no condensation), -40°C Bootable *
Applicable Standards	Safety standards AC input	UL60950-1, C-UL (CSA60950-1), EN62368-1
	Safety standards DC input	UL508, ANSI/ISA 12.12.01, ATEX certified, PSE compliant*
	Noise terminal voltage	UL60950-1, C-UL (CSA60950-1), EN62368-1
	Harmonic current	Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B
Structure	External dimensions (W×H×D)	IEC61000-3-2 (Class A) compliant*
	Weight	50×124×117 mm
	Cooling method	900 g max
		Natural air cooling

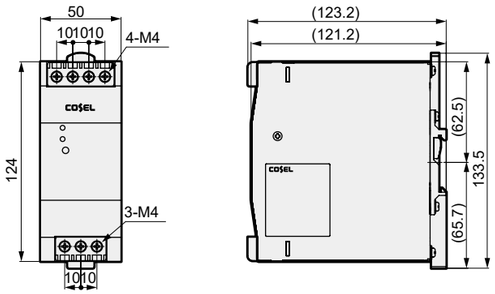
* For details, please refer to the manufacturer's website.
* CE marking and RoHS are obtained by manufacturer model number.

Names of Parts and External Dimension Drawings

● EA-PWR-KHNA240F-24-N2 (for 24 V screw mounting)



● EA-PWR-KHNA240F-24 (for 24 V DIN rail mounting)



● Other parts

Product Name	Model No.
Noise filter for power supply (single-phase, 15 A)	AX-NSF-NF2015A-0D

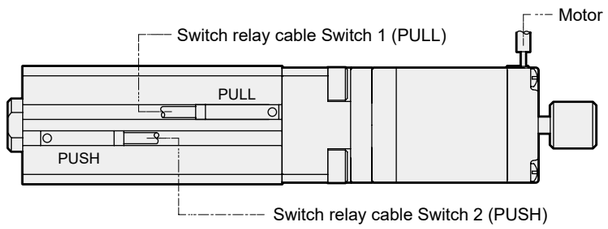
* For the ferrite core to be used, please refer to the instruction manual.

How to Use Electric Actuator D Series

DSSD2, DSTK, DSTG, DSTS, DSTL Series

STEP1 Wiring

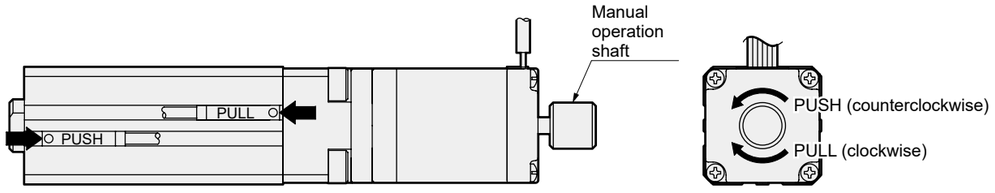
Connect the actuator and controller cables, and turn on the control power with the motive power OFF.



* Slide the cylinder switch and confirm that it lights up.
* Please wire the switch relay cable according to the number on the cylinder switch cable.
  1: Switch 1 (PULL) 2: Switch 2 (PUSH)

STEP2 Cylinder switch position adjustment

With the motive power OFF, rotate the manual operation shaft and move the actuator's movable part to any position. When the motive power is turned on, JOG operation can be performed to any position with the JOG (+) and JOG (-) switches. Pressing the JOG (+) switch moves it in the PUSH direction, and pressing the JOG (-) switch moves it in the PULL direction. Slide the cylinder switch from outside the operating range and fix it where the LED lights up. Please do this for both PUSH and PULL.



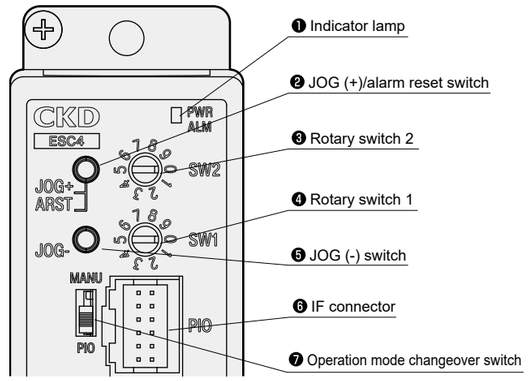
* The actuator detects the rising edge of the cylinder switch and decelerates to a stop. Please set the position of the cylinder switch, taking into account the deceleration stop distance.
* Please set the PULL and PUSH positions of the cylinder switch correctly. If the mounting position is reversed, it will cause a malfunction.
* Please confirm that both cylinder switches are lit. Operating it without the light on will cause a malfunction.
* The lighting range of the cylinder switch changes slightly due to the influence of temperature, etc. Please fix the cylinder switch at a position with a margin for the stroke. There is a risk of colliding with the mechanical end and the motor losing synchronism.
* Do not apply excessive torque to the manual operation shaft. This can cause damage or malfunction.

STEP3 Trial run

After turning on the motive power, turn on the operation input signal and operate the actuator. If it is different from the desired position, adjust the position of the cylinder switch. Switch the controller's rotary switch with a flat-blade screwdriver, etc., and adjust the operating speed of the actuator.

[PUSH, PULL speed setting] (mm/s)

Switch Setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	23	15	30	15	30
1	23	35	23	47	21	47
2	32	48	32	63	28	63
3	40	60	40	80	34	80
4	48	73	48	97	40	97
5	57	85	57	113	47	113
6	65	98	65	130	53	130
7	73	110	73	147	59	147
8	82	123	82	163	66	163
9	90	135	90	180	72	144



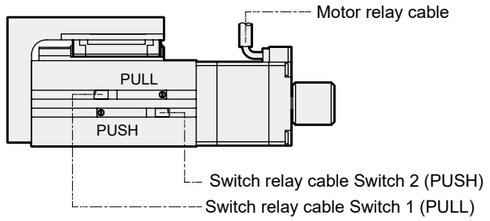
* The speed setting is a guideline. Even with the same setting, errors will occur with the actual numbers due to switch adjustment, power supply voltage, individual differences in motors, variations in mechanical efficiency, and temperature.
* For details, please refer to the instruction manual.
* Does not support pushing operation.

How to Use Electric Actuator D Series

DMSDG Series

STEP1 Wiring

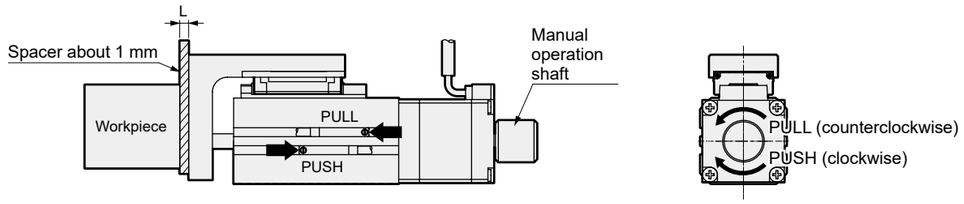
Connect the actuator and controller cables, and turn on the control power with the motive power OFF.



* Slide the cylinder switch and confirm that it lights up.
* Please wire the switch relay cable according to the number on the cylinder switch cable.
  1: Switch 1 (PULL) 2: Switch 2 (PUSH)

STEP2 Cylinder switch position adjustment

Please insert a spacer of about 1 mm between the table and the workpiece. Rotate the manual operation shaft and lightly press the table against the workpiece and spacer. Slide the PUSH side cylinder switch from outside the operating range and fix it where the LED lights up. Rotate the manual operation knob and move it to any position on the PULL side. After moving, slide the PULL side cylinder switch from outside the operating range and fix it where the LED lights up.



* Please set the PULL and PUSH positions of the cylinder switch correctly. If the mounting position is reversed, it will cause a malfunction.
* After pushing against the workpiece, do not turn the manual operation shaft with excessive force. This can cause a failure.
* Please confirm that both cylinder switches are lit. Operating it without the light on will cause a malfunction.
* Pushing operation is only possible during PUSH. Pushing during PULL is not supported.
* The recommended pushing position is the center of the stroke. For details, please refer to the instruction manual.
* The lighting range of the cylinder switch changes slightly due to the influence of temperature, workpiece dimensional errors, etc. Please confirm that the LED lights up in the pushed state.
* Do not apply excessive torque to the manual operation shaft. This can cause damage or malfunction.

STEP3 Trial run

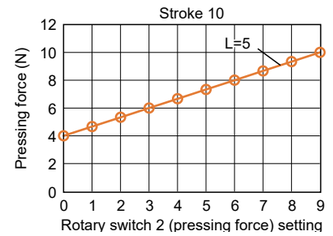
Turn on the motive power, turn on the operation input signal, and operate the actuator. Switch the controller's rotary switch to adjust the pushing force and PULL & PUSH speed.

[PULL & PUSH speed setting] (mm/s)

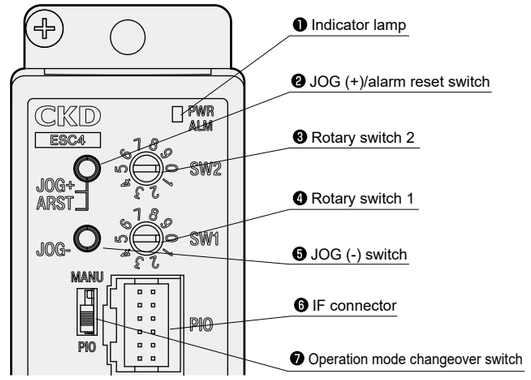
Size	Switch 1 setting									
	0	1	2	3	4	5	6	7	8	9
08	8	13	17	22	27	31	36	40	45	50
16	13	20	27	34	41	48	55	62	69	77

[Pushing Force Setting]

(Ex.: DMSDG-08)



* For other sizes, please refer to P. 487.



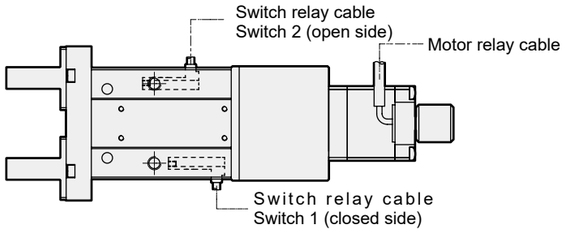
* The speed setting and pushing force setting are for reference only. Even with the same setting, errors will occur with the actual numbers due to switch adjustment, power supply voltage, individual differences in motors, variations in mechanical efficiency, and temperature.
* For details, please refer to the instruction manual.
* If pushing or gripping operations are performed near the stroke end, the motor may lose synchronism, causing a humming noise or reverse operation. In that case, move the pushing or gripping position near the center of the stroke, or reduce the pushing or gripping setting.

How to Use Electric Actuator D Series

DLSH, DCKW Series

STEP1 Wiring

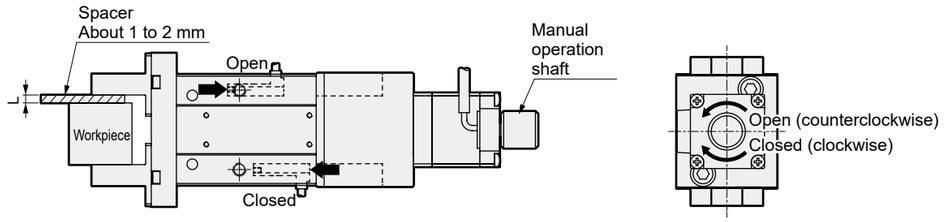
Connect the actuator and controller cables, and turn on the control power with the motive power OFF.



* Slide the cylinder switch and confirm that it lights up.
* Please wire the switch relay cable according to the number on the cylinder switch cable.
  1: Switch 1 (closed side) 2: Switch 2 (open side)

STEP2 Cylinder switch position adjustment

Please insert a spacer of about 1 mm for DLSH and about 0.5 mm for DCKW between the finger and the workpiece. Rotate the manual operation shaft to lightly grip the workpiece and spacer. Slide the closed side cylinder switch from outside the operating range and fix it where the LED lights up. Rotate the manual operation shaft and move it to any position on the open side. After moving, slide the open side cylinder switch from outside the operating range and fix it where the LED lights up.



* Please set the open/closed position of the cylinder switch correctly. If the mounting position is reversed, it will cause a malfunction.
* After gripping the workpiece, do not turn the manual operation knob with excessive force. This can cause a failure.
* Please confirm that both cylinder switches are lit. Operating it without the light on will cause a malfunction.
* This product is for external gripping. It does not support internal gripping.
* The recommended gripping position is the center of the stroke. For details, please refer to the instruction manual.
* The lighting range of the cylinder switch changes slightly due to the influence of temperature, workpiece dimensional errors, etc. Please confirm that the LED lights up in the gripped state.
* Do not apply excessive torque to the manual operation shaft. This can cause damage or malfunction.

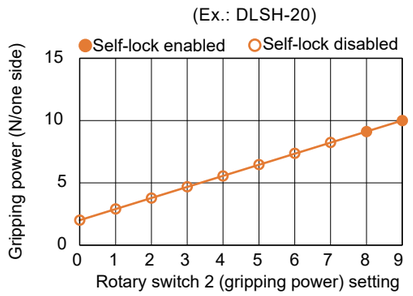
STEP3 Trial run

Turn on the motive power, turn on the operation input signal, and operate the actuator. Switch the controller's rotary switch to adjust the gripping force and opening/closing speed.

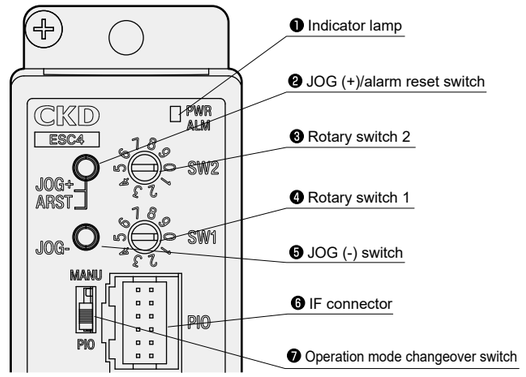
[Opening/Closing Speed Setting] (mm/s)

Size	Switch 1 setting									
	0	1	2	3	4	5	6	7	8	9
20	11	21	32	42	53	63	74	84	95	105
32	15	30	45	60	75	90	105	120	135	150

[Gripping Force Setting]



*Refer to pages 502, 510 and 512 for other models and sizes.



* The speed setting and gripping force setting are for reference only.Even with the same setting, errors will occur with the actual numbers due to switch adjustment, power supply voltage, individual differences in motors, variations in mechanical efficiency, and temperature.
* For details, please refer to the instruction manual.
* If pushing or gripping operations are performed near the stroke end, the motor may lose synchronism, causing a humming noise or reverse operation. In that case, move the pushing or gripping position near the center of the stroke, or reduce the pushing or gripping setting.

To Use This Product Safely

Be sure to read this before use.
For general information on electric actuators, please see Intro 17.

Individual Precautions: Controller for Electric Actuators ECMG, ECG, ECR, ESC4 Series

During Design and Selection

1. Common

Danger

■ Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■ Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■ When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

■ Be sure to use a DC stabilized power supply (48 VDC ±10% or 24 VDC ±10%) for the motive power supply and control power supply of the ECR Series.
Direct connection to an AC power supply can cause fire, bursting, damage, etc.

■ Be sure to use a DC stabilized power supply (24 VDC ±10%) for the I/O circuit power supply and the motive power supply/control power supply of the ECMG, ECG, and ESC4 Series.
Direct connection to an AC power supply can cause fire, bursting, damage, etc.

■ Please use only a 24 VDC power supply for the ECMG, ECG, and ESC4 Series.
Using a 48V power supply may cause the controller to malfunction.

Warning

■ Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 80% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■ The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C (10°C to 40°C for EBS-G and EBR-G), Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■ Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Do not use in places with impact or vibration.

Caution

■ Clearly state the maintenance conditions in the equipment's instruction manual.
Depending on the usage status, usage environment, and maintenance, the functions of this product may be significantly degraded, and safety may not be ensured. If maintenance is performed correctly, the product functions can be fully demonstrated.

■ The product is manufactured in accordance with various standards. Never disassemble or modify.

■ Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■ Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■ Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply with sufficient capacity for the number of products installed.
If there is not enough capacity, it may malfunction.

Control power supply:
Please select a power supply so that the rated output current of the applicable power supply is 0.4 A×the number of units or more. (Excluding end units)

Motive power supply:
Please select a power supply so that the rated output current or output peak current of the applicable power supply is greater than or equal to the maximum motive power current (see the specifications P. for each model).

■ Fixed cables cannot be used for applications involving repeated bending, so please use a flexible cable for use in locations involving repeated bending.

■ Please use the fixed/flexible cable with a bending radius of 51 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ Please check if the actuator's software version is compatible with ECMG. For details, please refer to the instruction manual.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

Standard-Compliant Products, ISO

Listed Page

CE Marking Ending 2

RoHS Compliance Ending 4

ISO9001/ISO14001 Certification Acquisition Ending 6

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
Pressure Equipment Directive (2014/68/EU)	Safety regarding the hazards of fluid energy possessed by pressure equipment	■ When certain conditions are exceeded within pressure equipment
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

Developing eco-friendly products,It's a theme of CKD.

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.

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.

MEMO

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	(SV)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	(SV)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	(SV)Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4F4/5/6/7□0E	(SV)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	(SV)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	(SV)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	(SV)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	RJ-016AA
AHB	Air-Hydro Booster	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-016AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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
BHA-FC	Mechanical Gripper	RJ-006AA

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Model No.	Model Name	Catalog No./Page
B		
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	RJ-003AA
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	Low Profile 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	509
DLSH	Electric Actuator with Motor Specification D Series 2-Finger Gripper Type	499
DMSDG	Electric Actuator with Motor Specification D Series Compact Guided Type	485
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	417
DSTG	Electric Actuator with Motor Specification D Series Guided Type	439
DSTK	Electric Actuator with Motor Specification D Series Stopper Type	427
DSTL	Electric Actuator with Motor Specification D Series Guided Type	467
DSTS	Electric Actuator with Motor Specification D Series Guided Type	453
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
EBS-L	Electric Actuator Motorless Specification Slider	RJ-015AA
EBS-G, -M	Electric Actuator Motorless Specification Slider	101
EBR-L	Electric Actuator Motorless Specification Slider	RJ-015AA
EBR-G, -M	Electric actuator Motor specification Slider	159
ECG	Electric Actuator Motorless Specification Rod	561
ECMG	Single Axis Controller for Electric Actuator	535
ECR	Single Axis Controller for Electric Actuator	595
ECS	Multi Axis Controllers for Electric Actuators	RJ-015AA
ECV	Single Axis Controller for Electric Actuator	RJ-015AA
EH	Electric Actuator Motorless Specification Slider type (belt drive/low dust specifications)	RJ-007AA
EKS-L	Fiber Tube Clean-room Type (For push-in fitting)	RJ-015AA
EKS-M	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	CC-1457AA
EMB21, 41, 51	Electric Actuator with Motor Specification Slider Type	RJ-013AA
EJSG	Metal-free 2-Port Solenoid Valve	1
ESC4	Electric Actuator with Motor Specification Slider Type	611
ESM	Single Axis Controller for Electric Actuator	RJ-015AA
ETS	Electric Shuttle Mover (Belt Driven)	RJ-015AA
ETV	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	RJ-015AA
EV2100V, 2109V	Electric Actuator Motorless Specification Slider Type (Belt Driven)	RJ-007AA
EVR	Electro-Pneumatic Regulator/ Solenoid Valve Type Vacuum Compatible	RJ-007AA
EVD	Electro-Pneumatic Regulator/ Solenoid Valve Type Medium Flow	RJ-007AA
EVL	Electric Vacuum Valves	RJ-007AA
EVS2	Digital Electro-Pneumatic Regulator	RJ-007AA
EVT	Low Pressure Electro-Pneumatic Regulator	RJ-007AA
EXA	Pilot Operated 2-Port Solenoid Valve for Compressed Air	RJ-013AA

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Model No.	Model Name	Catalog No./Page
E		
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F2, 3V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F3PH/V	Cylinder Switch/PNP Output Type Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-003AA
FCH	Flat Cylinder Compact Demi/ Single Acting, Retracting Type	RJ-003AA
FCK	Shock Absorber, Adjustable Type	RJ-005AA
FCM	Compact Flow Controller Rapiflow	RJ-008AA
FCS	Flat Cylinder Compact Demi/ Single Acting, Push Type	RJ-003AA
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)	295
FGRC	Electric Actuator with Motor F Series Rotary Type	247
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 Specification F Series Table Type	225
FLS	Ultra Compact Joint/ Extension	RJ-007AA
FLSH	Electric Actuator with Motor Specification F Series 2-Finger Gripper Type	271
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 Specification G Series 3-Finger Gripper	395
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

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G		
GNAB□	Air Operated 2-Port Valve Manifold (Compact Cylinder Valve)	RJ-013AA
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 Specification G Series Rod Type	331
GSTG	Electric Actuator with Motor Specification G Series Guided Type	353
GSTK	Electric Actuator with Motor Specification G Series Stopper Type	341
GSTL	Electric Actuator with Motor Specification G Series Guided Type	381
GSTS	Electric Actuator with Motor Specification G Series Guided Type	367
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
H0Y	Cylinder Switch/2-Color Indicator, Reed	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	Wide 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	Low Profile Parallel Gripper	RJ-006AA
HLB	Low Profile Parallel Gripper	RJ-006AA
HLC	Low Profile Long Stroke Parallel Gripper	RJ-006AA
HLD	Ultra Thin Parallel Gripper	RJ-006AA
HLF2	Low Profile Long Stroke Gripper	RJ-006AA
HMD	Low Profile Wide Angle Gripper	RJ-006AA
HMC-HP1	Wide Parallel Gripper	RJ-006AA
HMF	Compact Wide Parallel Gripper	RJ-006AA
HMFB	Large Wide 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	(SV)Manual Valve/Miniature	RJ-012AA
HMVE	(SV)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	(SV)Manual Valve/Standard	RJ-012AA
HSVE	(SV)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	RJ-016AA
IAVB	Vacuum Pressure Control System	RJ-016AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K2, 3 V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K3P V/H	Cylinder Switch/PNP Output Type, Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K5V/H	Cylinder Switch/No Indication, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-016AA
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	Low Profile Long Stroke Gripper	RJ-006AA
LSTM-HP2	Low Profile 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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M2, 3WV	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M3GA1 / 2 / 3	(IM)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	(WR)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	(MN)Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA

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Model No.	Model Name	Catalog No./Page
M		
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
M3GE1/2□ 0EX	Ⓜ 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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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
M4GD1/2/3/4□ 0EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4GD1/2/3/4□ 0EX	Ⓜ 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
M4GE1/2/3/4□ 0EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
M4GE1/2/3/4□ 0EX	Ⓜ 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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-003AA
MDV	Compact Direct Cylinder	CC-905AA
MEB2/ MEG2	Metal-free 2-Port Solenoid Valve	CC-1055AA
MEVT	Low Profile Electro-Pneumatic Regulator/Wiring-saving Manifold Type	RJ-007AA
MGD	Manual Valve for Process Gas	RJ-016AA
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	Ⓜ, 6M Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GA1/2	Ⓦ, 6M Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GAX12	Ⓦ, Ⓧ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GB1/2	Ⓜ, 6M Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GB1/2	Ⓦ, 6M Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GD1/2	Ⓜ, 6M Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GD1/2	Ⓦ, 6M Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GDX12	Ⓦ, Ⓧ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GE1/2	Ⓜ, 6M Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GE1/2	Ⓦ, 6M 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	Ⓜ/6M Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GA1/2	Ⓦ/6M Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GAX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GB1/2	Ⓜ/6M Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GB1/2	Ⓦ/6M Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GBX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GD1/2	Ⓜ/6M Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GD1/2	Ⓦ/6M Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GDX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GE1/2	Ⓜ/6M Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GE1/2	Ⓦ/6M Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GEX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4KB1/2	6M 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	RJ-003AA

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Model No.	Model Name	Catalog No./Page
M		
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	RJ-016AA
MVC	Compact Cylinder with Vacuum Pad/Double Acting, Single Rod Type	RJ-005AA
MW3GA2	(M)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MW3GA2	(WR)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MW4GA2	(M)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GA2	(WR)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GB2	(M)Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB2	(WR)Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	(M)Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	(WR)Pilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GZ2	(M)Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ2	(WR)Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	(M)Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	(WR)Pilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4000, 8000	Oil Mist Filter/Outdoor Series 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□	(SM)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	RJ-016AA
OMC2	Sequential Controller for Pulse Jet Valve (Pulse Jet Controller)	RJ-013AA
P		
P1100-W	Reed Switch, Contact Type Compact Mechanical Pressure Switch	RJ-007AA
P4000-W	Mechanical Pressure Switch/Standard White Series	RJ-007AA
P4100-W	Reed Switch, Contact Type Compact Mechanical Pressure Switch	RJ-007AA
P512□	(SV)Pilot Operated 2-Port Valve/Pilot Type	RJ-012AA
P513□	(SV)Pilot Operated 3-Port Valve/Pilot Type	RJ-012AA
P5142	(SV)Pilot Operated 5-Port Valve/Pilot Type	RJ-012AA
P8100-W	Reed Switch, Contact Type Compact Mechanical 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	Pilot Operated 2-Port Air Operated Valve for Dust Collector	RJ-013AA
PD3	Pilot Operated 2-Port Air Operated Valve for Dust Collector	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	RJ-016AA
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	(SV)Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ①	RJ-012AA
PV5G	(SV)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

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
P		
PZU	Sub-base/Input Block/Relay Type Sub-base	RJ-007AA
Q		
QEL	Quick Exhaust Valve	RJ-007AA
QEV2	Quick Exhaust Valve	RJ-007AA
R		
R0, 3, 4, 6	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
R1, 2	Cylinder Switch/1-Color Indicator, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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-002AA, 003AA, 004AA, 005AA, 006AA
SKDC	Contact Protection Circuit Box (For DC Circuit)	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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	RJ-003AA
SSD2	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
SSD-LN	With Linear Norm Sensor	RJ-005AA
SSG	Guided Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
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 Type)/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	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T0Y	Cylinder Switch/Reed 2-wire for Magnetic Environments	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T1 V/H	Cylinder Switch/1-Color Indicator, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2 V/H R	Cylinder Switch/Flexible Shielded Cable Type, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2, 3 V/H/C	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2, 3YL V/H	Cylinder Switch/Solid State 2/3-wire for Cutting Oil	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2J V/H	Cylinder Switch/Off-delay Type, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2YD(T)	Cylinder Switch/Solid State 2-wire for Strong Magnetic Fields	RJ-002AA, 003AA, 004AA, 005AA, 006AA

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Model No.	Model Name	Catalog No./Page
T		
T2WL V/H	Cylinder Switch/Improved Water Resistance, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T3P V/H	Cylinder Switch/PNP Output Type, Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T5V/H/C	Cylinder Switch/No Indication, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T8 V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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 Fall 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	High Corrosion Resistance Ultra Compact Direct Acting 2-Port Solenoid Valve for Medical Equipment	CC-1055AA
UMG1	High Corrosion Resistance Ultra Compact Direct Acting 3-Port Solenoid Valve for Medical Equipment	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/Compact Reed 2-wire for Strong Magnetic Fields	RJ-002AA, 003AA, 004AA, 005AA, 006AA
V1000, 3000-W	Residual Pressure Exhaust Valve/Standard White Series	RJ-007AA
V3010, 6010-W	Residual Pressure Exhaust Valve with Keyhole, Keyhole, OSA Compliant	RJ-007AA
V3301, 3321-W	Slow Start Valve	RJ-007AA
VFA1000 to 4000	Vacuum Filter	RJ-010AA
VG	Vacuum Generator	RJ-016AA
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
VSRL	Vacuum Related Equipment/ Ring Blow Type Vacuum Generator	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 Flow Sensor for Liquids Flurex	RJ-008AA
WFK3000	Karman Vortex Flow Sensor for Water 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

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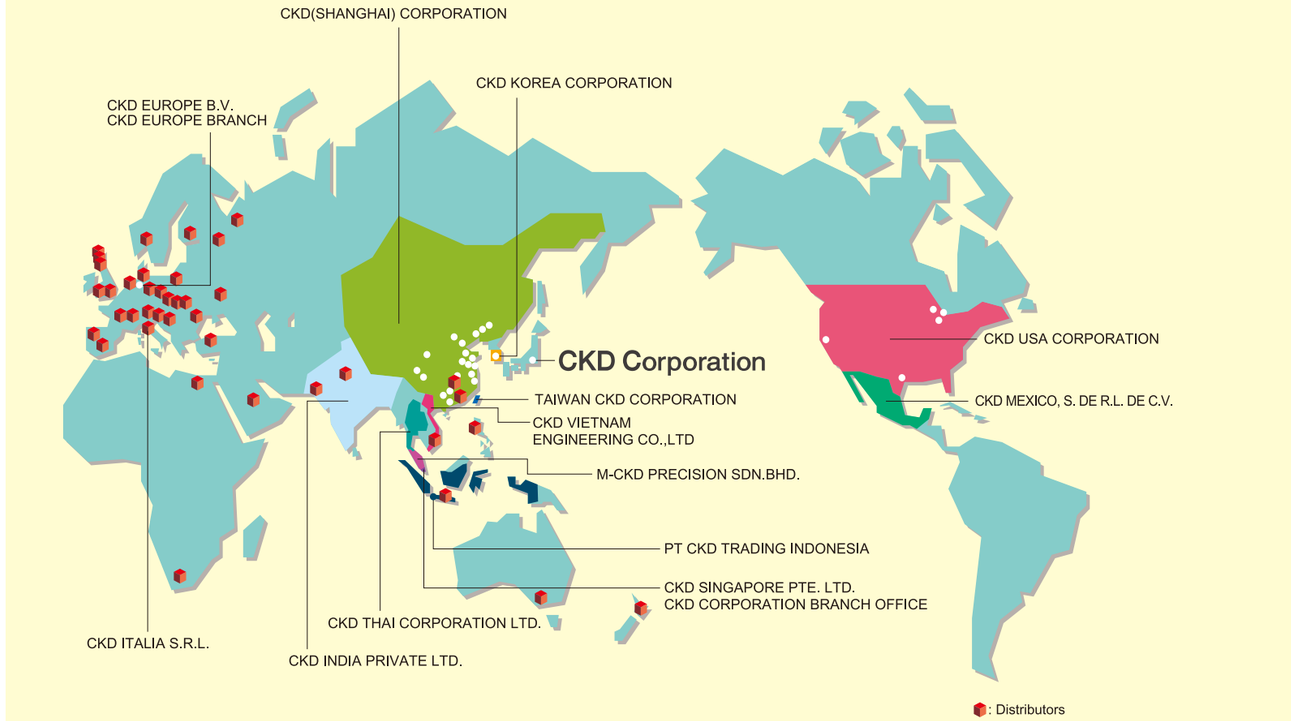

CKD Corporation

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)
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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
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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
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