IAI
Quality and Innovation

GB

ROBO CYLINDER

Product Overview & Technical Reference

ERC2
RCP2
RCA
RCS2

Controller-Integrated type
001p

Slider type
ERC2 series

[Motor straight type]
SA6C/SA7C
003p

Rod type
ERC2 series

[Standard rod type]
RA6C/RA7C
007p

Slider type
019p

24-V pulse motor type

RCP2 series

[Motor coupling type]
SA5C/SA6C/SA7C
SS7C
SS8C
HS8C
021p

RCP2 series

[Motor reversing type]
SA5R/SA6R/SA7R
SS7R
SS8R
HS8R
033p

RCP2 series

[Belt drive type]
BA6/BA6U
BA7/BA7U
045p

24-V servo motor type

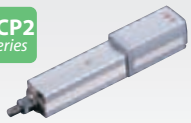
RCA series

[Motor coupling type]
SA4C/SA5C/SA6C
049p

Rod type
103p

24-V pulse motor type

RCP2 series



[Motor coupling type]
RA2C/RA3C/RA4C
RA6C
105p

RCP2 series

[High-thrust type]
RA10C
113p

RCP2 series

[Single-guide type]
RGS4C/RGS6C
115p

RCP2 series

[Double-guide type]
RGD3C/RGD4C
RGD6C
119p

200-V servo motor type

RCS2 series

[Motor coupling type]
RA4C/RA5C
153p

RCS2 series

[Built-in motor type]
RA4D
157p

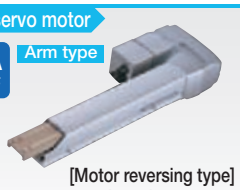
RCS2 series

[Short type]
RA7AD/RA7BD
159p

Arm type
Flat type
187p

24-V servo motor

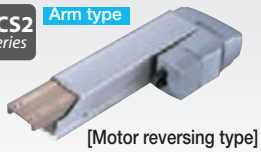
RCA series Arm type



[Motor reversing type]
A4R/A5R/A6R
189p

24-V servo motor

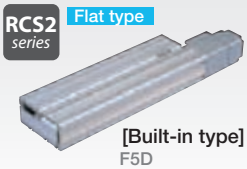
RCS2 series Arm type



[Motor reversing type]
A4R/A5R/A6R
195p

24-V servo motor

RCS2 series Flat type

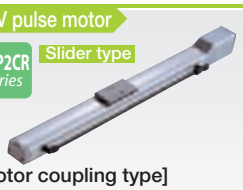


[Built-in type]
F5D
201p

Cleanroom type
229p

24-V pulse motor

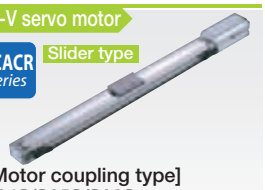
RCP2CR series Slider type



[Motor coupling type]
SA5C/SA6C
SA7C/SS7C
SS8C/HS8C
231p

24-V servo motor

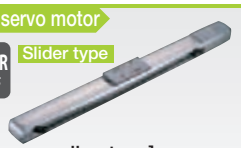
RCACR series Slider type



[Motor coupling type]
SA4C/SA5C/SA6C
[Built-in type]
SA5D/SA6D
243p

200-V servo motor

RCS2CR series Slider type



[Motor coupling type]
SA4C/SA5C/SA6C/SA7C
SS7C/SS8C
[Built-in type]
SA5D/SA6D
253p

Controller
285p

Gateway

[Gateway unit]
289p

24-VDC power supply

[24-VDC power supply]
293p

Built-in controller

ERC2 series

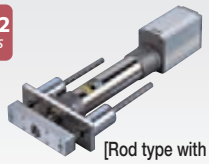
[ERC2 built-in controller]
295p

24-V pulse motor

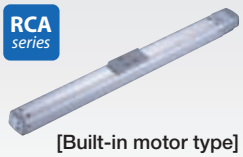
PCON

[RCP2 position controller]
305p

[Rod type with single guide]
RGS6C/RGS7C
011p



[Rod type with double guides]
RGD6C/RGD7C
015p

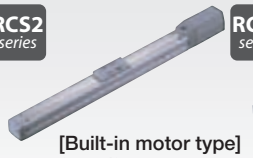


[Built-in motor type]
SA4D/SA5D/SA6D
SS4D/SS5D/SS6D
055p

[Motor reversing type]
SA4R/SA5R/SA6R
067p

200-V servo motor type

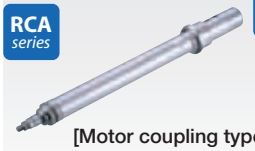
[Motor coupling type]
SA4C/SA5C/SA6C
SA7C/SS7C/SS8C
073p



[Built-in motor type]
SA4D/SA5D
SA6D
085p

[Motor reversing type]
SA4R/SA5R/SA6R
SA7R/SS7R/SS8R
091p

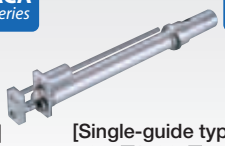
24-V pulse motor type



[Motor coupling type]
RA3C/RA4C
125p

[Built-in motor type]
RA3D/RA4D
129p

[Motor reversing type]
RA3R/RA4R
133p



[Single-guide type]
RGS3□/RGS4□
137p

[Double-guide type]
RGD3□/RGD4□
145p

[Motor reversing type]
RA4R/RA5R
163p

[Single-guide type]
RGS4□/RGS5C/RGS7□D
167p

[Double-guide type]
RGD4□/RGD5C/RGD7□D
177p

Gripper type
Rotary type
203p

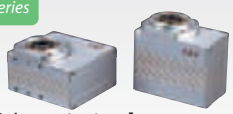
24-V pulse motor

Gripper type
[Pulse motor type]
GRS/GRM
GR3LS/GR3LM
GR3SS
GR3SM
205p

200-V servo motor

Gripper type
[Servo motor type]
GR8
217p

24-V pulse motor



Rotary type
[Pulse motor type]
RTB/RTC
219p

200-V servo motor

Rotary type
[Servo motor type]
RT6/RT6R
RT7R
223p

Dustproof /splash -proof type
269p

24-V pulse motor

Slider type
[Waterproof slider type]
SA16C
271p

Rod type
[Splash-proof rod type]
RA4C/RA6C
273p

Rod type
[Splash-proof high-thrust rod type]
RA10C
277p

24-V servo motor

Rod type
[Splash-proof rod type]
RA3C/RA4C
279p

200-V servo motor

Rod type
[Splash-proof rod type]
RA4C
283p

24-V servo motor

[RCA position controller]
315p

200-V servo motor

[RCS2 position controller]
325p

24-V pulse motor

[RCP2 program controller]
335p

200-V servo motor

[RCA program controller]
345p

200-V servo motor

[RCS2 program controller]
355p

[RCS2 program controller]
XSEL
365p

Air cylinders use air, which is a compressible fluid. Accordingly, air cylinders present several problems such as difficulty controlling the speed accurately and the cylinder operation being affected by the load. ROBO Cylinders offer many ways to solve these problems associated with air cylinders. Sample solutions are explained below.

	Problem with air cylinders	Solution offered by ROBO Cylinders
Positioning operation	**Difficult to perform positioning to multiple points** Movement between two points is the mainstream pattern of positioning operation with air cylinders. If the number of stopping points is increased to three or more, a special mechanism must be provided. Even with a special mechanism, the number of positioning points is still limited.	**Positioning operation** Desired target positions can be set with ease. Position alignment, setup change and other tasks are also easy.
Speed/ acceleration adjustment	**Difficult to fine-tune speed** Since fine-tuning of speed is difficult, the speed may be increased excessively to damage the work, or decreased excessively to affect the tact time.	**Fine-tuning of speed** Speed can be finely adjusted in 1-mm/s steps. This eliminates the possibility of work damage and also minimizes the tact time.
	Difficult to adjust acceleration/ deceleration Overshooting during downward movement or large shock at higher speed may damage the work.	**Acceleration/deceleration adjustment** Acceleration/deceleration can be set in fine steps to suppress shock and eliminate the possibility of work damage.
Speed change during movement	**Difficult to change speed during movement** Changing speed is difficult during movement. Speed is also not stable.	**Speed change during movement** Speed can be changed easily during movement. Since ROBO Cylinders adopt servo control by means of motor/ball screw drive, travel speed can be kept constant.
Push-motion operation	**Works cannot be pushed properly** If the push force is too strong, the work may be damaged. Lowering the push speed to prevent damage will affect the tact time.	**Push-motion operation** The speed is reduced before the actuator contacts the work, and the push force can be adjusted easily.
	Push force cannot be adjusted properly Push force must be adjusted constantly using a regulator (reducing valve), etc., and the adjusted force still fluctuates.	**Push force adjustment** Push force can be adjusted easily using position data, and the adjusted push force remains constant.
Zone output	**A sensor is needed to issue an output signal** To issue an output signal, a sensor must be installed at the desired position and the signal must be turned ON/OFF.	**Zone output** An area signal can be output through easy setting without using a sensor. (This signal can be used to prevent contact and for various other purposes.)

	Problem with air cylinders	Solution offered by ROBO Cylinders
Pause input	**The actuator cannot be paused** Difficult to pause the actuator during operation.	**Pause input** The pause function allows for easy deceleration/stopping and restart.
Combination	**Frequent work pickup errors** Accuracy of stopping position is poor in pick & place operation, and pickup errors occur frequently.	**Accurate positioning** Positioning deviation is eliminated because the positioning repeatability is as high as ± 0.02 mm. This reduces pickup errors.
	Height fluctuation in press-fit operation Press-fit heights fluctuate.	**Push-motion operation and zone output** Height fluctuation can be eliminated because press-fit operation is performed as push-motion operation using a zone output.
Others	**No air supply source** If no air supply source is available for the air cylinder, a compressor must be installed.	**Power supply is all you need** ROBO Cylinders can be operated with a power supply only.
	Need for air pressure adjustment Since air pressure fluctuates, constant pressure adjustment is necessary.	**No need for adjustment** Since ROBO Cylinders are driven by a motor, no adjustment is necessary. This reduces man-hours.
	High power consumption Want to cut down on power consumption to reduce the load on the environment.	**Energy-saving** ROBO Cylinders consume approx. one-tenth the power consumed by air cylinders (based on IAI's internal test).

As explained above, many of the problems associated with air cylinders can be solved through the functions of ROBO Cylinders. With ROBO Cylinders, you can achieve the following benefits:

◇ Lower percent defective ◇ Less design/assembly man-hours ◇ More environmentally friendly (energy-saving) ◇ Easy setup change ◇ Less maintenance man-hours ◇ Lower cost associated with air leak ◇ Shorter tact time ◇ No need for startup adjustment ◇ ISO 14000 compliance

Introducing ROBO Cylinders – Actuators Friendly to the Earth, Manufacturing Lines, and People

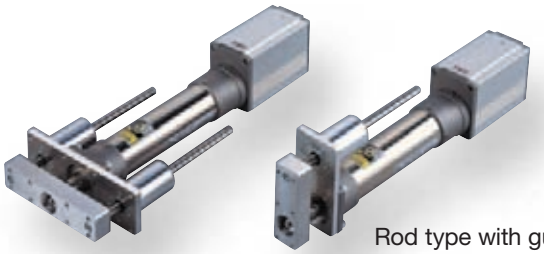
ROBO Cylinders are a family of next-generation cylinders achieving easy operation, high functionality, energy-saving and low cost. Offering a wide lineup and user-friendly features, they help you resolve various problems you are facing in system design.

ROBO Cylinders are classified into the following four series each offering different features. Select a model that best suits your system.

Built-in controller type

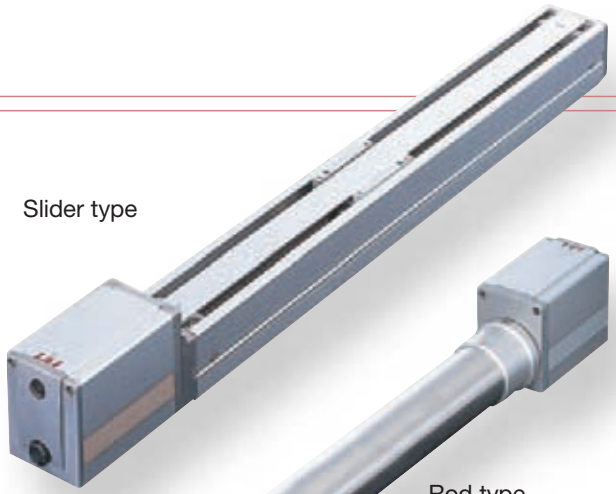
ERC2 series

A controller-integrated pulse motor cylinder realizing small footprint and easy operation



Rod type with guide

Slider type

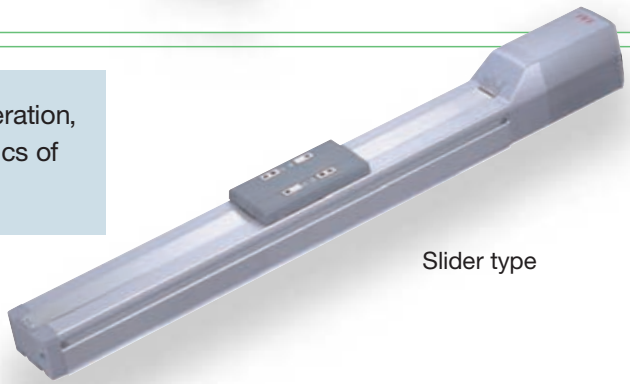


Rod type

Pulse motor type

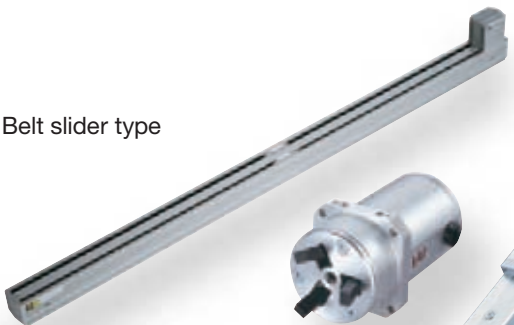
RCP2 series

A pulse-motor cylinder ideal for push-motion operation, where the high-thrust-at-low-speed characteristics of a pulse motor can be maximally utilized.



Slider type

Belt slider type



3-finger gripper

Rod type

PCON
Position controller

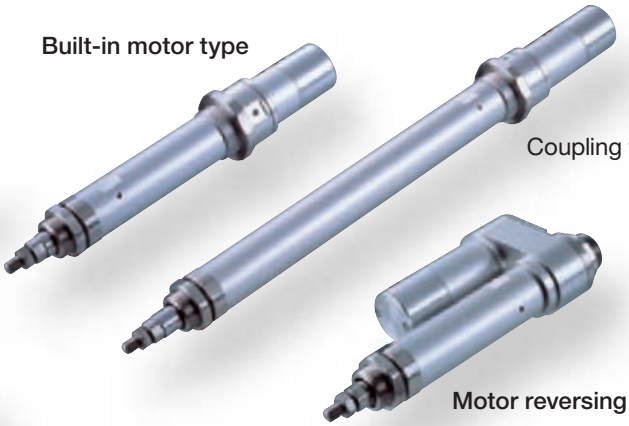
PSEL
Program controller

Servo motor (24-V motor) type

RCA series

A compact, 24-V rod-type servo cylinder close to the shape of an air cylinder

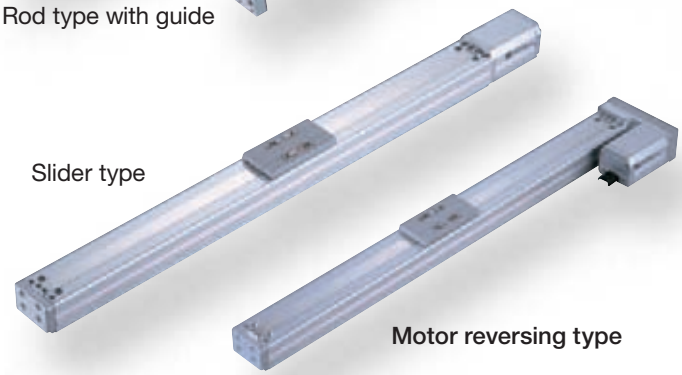
Rod type with guide



Built-in motor type

Coupling type

Motor reversing type



Slider type

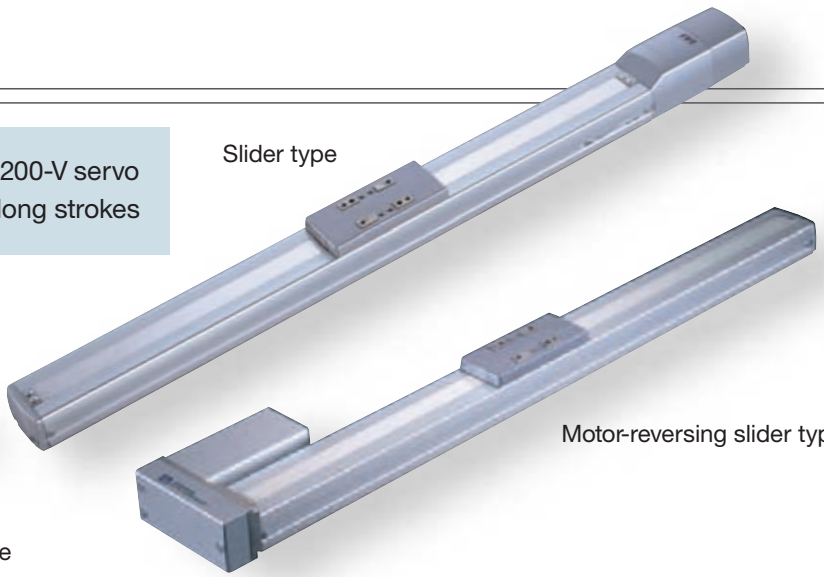
Motor reversing type

ACON
Position controller

ASEL
Program controller

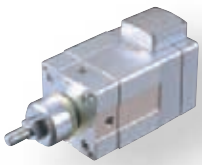
RCS2 series

A servo cylinder equipped with a 200-V servo motor to support high loads and long strokes

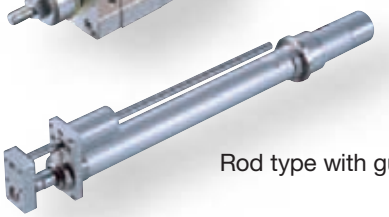


Slider type

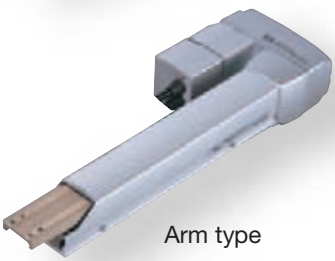
Motor-reversing slider type



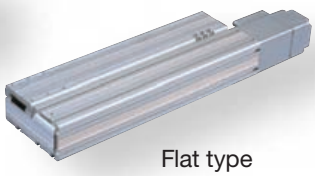
Short rod type



Rod type with guide



Arm type



Flat type

SCON
Position controller

SSEL
X-SEL
Program controller

Wide-ranging Lineup

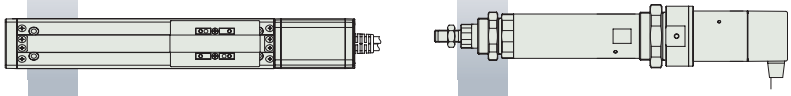
3 Actuator Types Coupling, Built-In and Motor Reversing

Three motor installation specifications are provided for both slider and rod types to ensure easy maintenance and minimize footprint. Select a desired type according to the conditions required by your specifications.

Slider type | Rod type

Coupling Specification

The motor and ball screw are connected by means of a coupling to permit easy replacement of the motor.

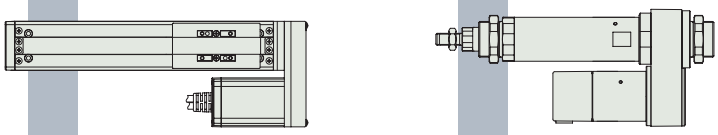


Built-In Specification

The motor and ball screw are directly connected to shorten the overall length. An ideal choice when the lengthwise space is limited.

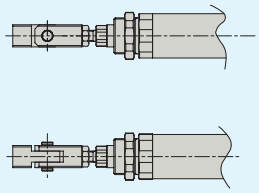
Reversing Specification

A pulley is attached to the shaft center of the ball screw to reverse the motor based on belt connection. If sufficient space is available in widthwise direction, this type offers the shortest length.

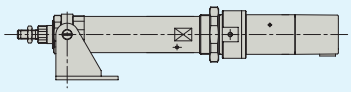


Rod Types Adopt Same Mounting Methods as Air Cylinders

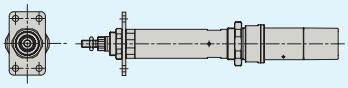
The same mounting brackets used on air cylinders, such as foot, trunnion and clevis, are available as options. Also, various mounting brackets such as knuckle joint and floating joint can be used at the tip of the rod, which makes conversion from air cylinders easy.



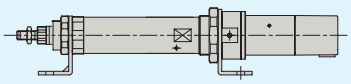
[Knuckle joint]



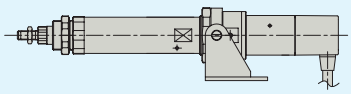
[Front trunnion]



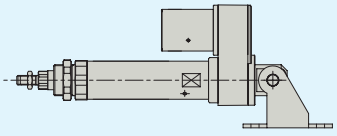
[Flange]



[Foot]



[Rear trunnion]



[Clevis]

Supporting Various Control Methods

You can choose an appropriate controller from the six controller series including the positioner controllers and program controllers for the RCP2 series (24-V pulse motor), RCA series (24-V servo motor) and RCS2 series (200-V servo motor).
Also, four control methods are supported by the PCON and ACON series, while the SCON series provides all-in-one controllers incorporating all four functions.

	Applicable actuator		
	RCP2 series 24-V pulse motor type	**RCA series** 24-V servo motor type	**RCS2 series** 24-V servo motor type
Position controller	PCON	ACON	SCON
Positioner type Up to 512 positioning points can be set. Change the settings to use the controller as a solenoid valve type or serial communication type.	 PCON-C/CG	 ACON-C/CG	
Solenoid valve type A simple control type that allows for positioning to a maximum of three points using the same control actions normally used for air cylinders with solenoid valves.	 PCON-CY	 ACON-CY	
Pulse-train input type The controller uses pulse train input, so there's no need to input positions in advance. Ideal in applications involving complex/numerous operation patterns or when speeds and other settings must be changed flexibly.	 PCON-PL/PO	 ACON-PL/PO	 SCON-C All functions are combined into one unit.
Serial communication type Connectable to DeviceNet or CC-Link via a gateway unit. The compact, low-priced controller is ideal for multi-axis configurations.	 PCON-SE	 ACON-SE	
Program controller	PSEL	ASEL	SSEL
Program type This program controller can operate up to two axes. It makes interpolation operation easy and is therefore great for coating, palletizing and other operations where two axes are combined.	 1-axis type 2-axis type PSEL-C	 1-axis type 2-axis type ASEL-C	 1-axis type 2-axis type SSEL-C

Easy Operation, High Functionality, Maintenance Free, and Energy-Saving

Various Functions with Easy Operation

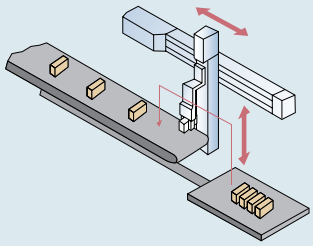
3 Operation Patterns

You can select from three operation patterns depending on the nature of your system.

[Positioning operation]

Move the load installed onto the slider or rod of the axis to perform positioning operation at a repeatability of ±0.02 mm.

<Application> Transfer works, position a camera, etc.

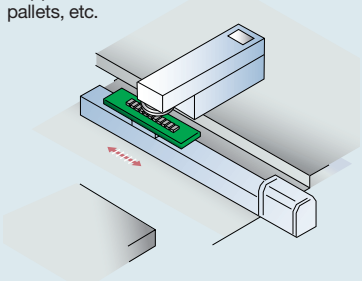


Pick & place unit

[Pitch-feed operation]

Instead of positioning operation based on coordinates determined with respect to the home, the current position is used as the origin to move the actuator by a specified distance.

<Application> Raise/lower a stocker, move pallets, etc.

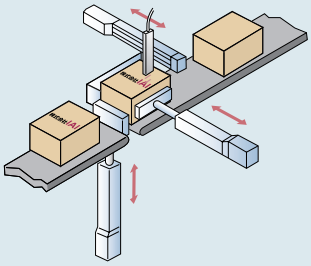


Transfer works in a marking process

[Push-motion operation]

Just as you do with an air cylinder, the rod can be maintained in a condition where it continues to push the work.

<Application> Press-fit or clamp works, etc.



Push works

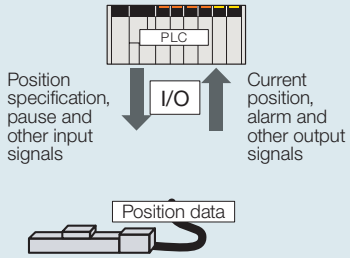
3 Positioning Methods

One of three patterns can be selected for communication from the host equipment to the controller.

[Position movement]

Just as you do with a solenoid valve, you can simply turn a signal ON/OFF to move the actuator to a specified position.

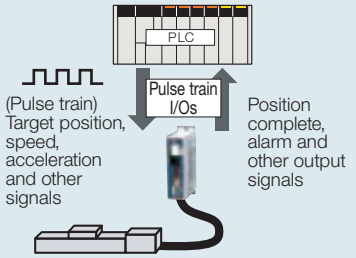
• Operated via I/O control using a PLC



[Pulse-train input]

The target position, speed and acceleration can be controlled freely without inputting the destination to the controller in advance.

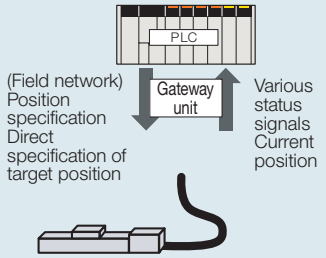
• Operated via I/O control using pulse trains received from a PLC



[Field network]

Movement commands can be issued via a network such as DeviceNet or CC-Link. You can specify a position or directly enter coordinates to move the actuator.

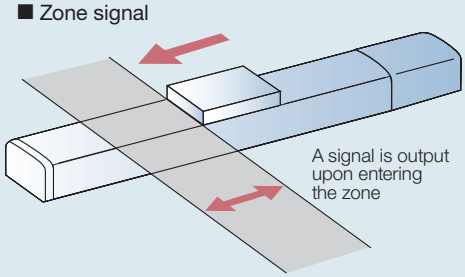
• Operated from a PLC via a network



Zone Signal Output at Desired Positions

The zone signal provides a function to output a signal when the slider has entered a desired range (zone) set between the stroke limits. This signal is effective if you wish to output a signal at a desired position during coating operation, etc. (a signal can be output for up to two zones). Also, the new P zone signal can be set for each position. Although one common output signal is used, a zone can be set for up to 256 points.

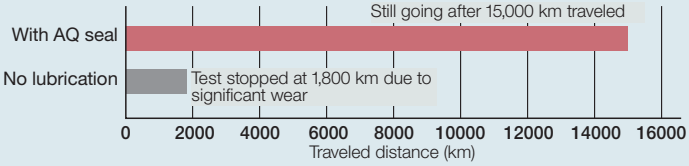
■ Zone signal



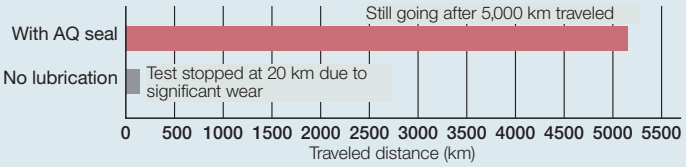
Long Maintenance-Free Period Benefits by AQ Seals

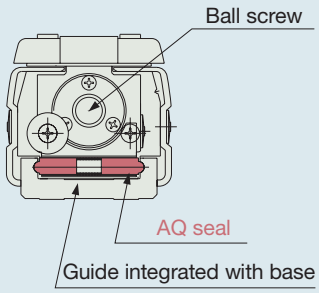
The AQ seal is a lubrication unit using a lubrication member made of resin-solidified lubricating oil. AQ seals supply lubricating oil as they are pressed against the surface of the guide and ball screw (steel-ball rolling surface). This, combined with the lubrication effect of grease, ensures a long maintenance-free period.

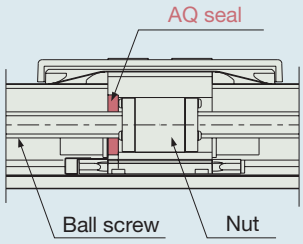
■ Service Life of Guide (with/without AQ Seal)



■ Service Life of Ball Screw (with/without AQ Seal)





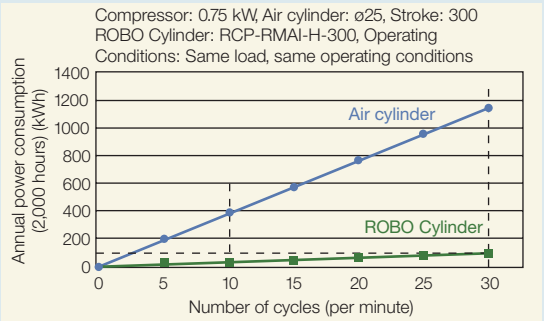


Benefits of AQ seal

- Minimize the number of cumbersome greasing operations required. (When used with grease, the actuator will remain maintenance free for 5,000 km of traveled distance or three years.)
- Effective in locations where greasing is difficult due to the structure of the system
- Environmentally friendly, since no extra grease is needed

Low Running Cost of 1/3 to 1/10 Compared to Air Cylinders

With air cylinders, a compressor is operated with electricity to generate compressed air, and generated air is supplied through a line to the air cylinder where it is then converted to linear-motion force. This mechanism is subject to significant energy loss. With ROBO Cylinders, on the other hand, revolutions of an electrical motor are mechanically converted to linear-motion force, which minimizes energy loss. The running cost (electricity bill) of a ROBO Cylinder is one-third to one-tenth the cost of an air cylinder (based on IAI's internal test).



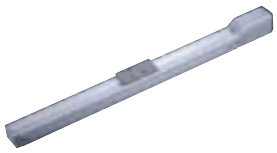
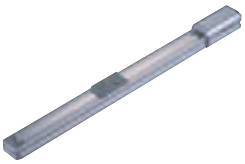
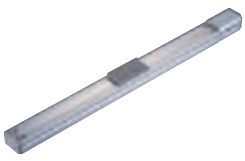
Two new functions were added to enhance the energy-saving features of ROBO Cylinders that already offer higher energy efficiency than air cylinders.

Full Servo Control Mode

In this mode, current of the pulse motor installed in the RCP2 series is reduced to one-half to one-fourth in standstill state. It provides an effective way to suppress power consumption when the motor remains standstill for a long time at a standby position.

Automatic Servo-Off Mode

Once positioning is completed, the servo will turn off automatically upon elapse of a specified time. Since holding current does not flow while the servo is off, power consumption can be reduced. (External force must not be applied while the servo is off.)

Applicable actuator								
Series	Features	Motor type	Type (reference page)	External view	Speed	Load capacity	Push force	
ERC2 *series*	An actuator with a built-in controller achieving easy operation and ultra low price	24-V pulse motor	Slider type (P3)		△	○	○	
			Rod type (P7)		△	○	○	
RCP2 *series*	Achieving both low price and high functionality by servo-controlling a pulse motor	24-V pulse motor	Slider type (P21)		△	○	◎	
			Rod type (P105)		△	○	◎	
RCA *series*	A compact, affordably priced 24-V servo motor actuator	24-V servo motor type	Slider type (P49)		○	△	△	
			Rod type (P125)		○	△	△	
RCS2 *series*	A high-output servo motor ensures high transfer capability	200-V servo motor type	Slider type (P73)		◎	◎	△	
			Rod type (P153)		◎	◎	△	

(Note 1) I/O type code of the ERC2 series

			Applicable controller					
	Item	Specification	Item	Positioner type	Solenoid valve type	Pulse-train input type	Serial communication type	Program operation type
	Stroke	50~600mm~50mm (set in 50-mm increments)	Model	NP/PN (Note 1)		—	SE (Note 1)	—
	Maximum horizontal load capacity	~20kg	Maximum number of positioning points	16 points	3 points	—	64 points	—
	Maximum vertical load capacity	~10kg	Maximum number of connected axes	1 axis		—	1 axis	—
	Maximum speed	~600mm/s	Power-supply voltage	DC24V		—	DC24V	—
	Stroke	50~300mm~50mm (set in 50-mm increments)	External view (reference page)	 (P295)		—	 (P295)	—
	Maximum horizontal load capacity	~55kg (with external guide)						
	Maximum vertical load capacity	~25kg						
	Maximum speed	~600mm/s						
	Stroke	50~1200mm~50mm (set in 50-mm increments)	Model	PCON-C/CG	PCON-CY	PCON-PL/PO	PCON-SE	PSEL
	Maximum horizontal load capacity	~55kg	Maximum number of positioning points	512 points	3 points	(—)	64 points	1500 points
	Maximum vertical load capacity	~20kg	Maximum number of connected axes	1 axis				2 axes
	Maximum speed	~1500mm/s	Power-supply voltage	DC24V				DC24V
	Stroke	50~300mm~50mm (set in 50-mm increments)	External view (reference page)	 (P305)	 (P305)	 (P305)	 (P305)	 (P335)
	Maximum horizontal load capacity	~300kg (with external guide)						
	Maximum vertical load capacity	~150kg						
	Maximum speed	~458mm/s						
	Stroke	50~600mm~50mm (set in 50-mm increments)	Model	ACON-C/CG	ACON-CY	ACON-PL/PO	ACON-SE	ASEL
	Maximum horizontal load capacity	~12kg	Maximum number of positioning points	512 points	3 points	(—)	64 points	1500 points
	Maximum vertical load capacity	~6kg	Maximum number of connected axes	1 axis				2 axes
	Maximum speed	~800mm/s	Power-supply voltage	DC24V				DC24V
	Stroke	50~300mm~50mm (set in 50-mm increments)	External view (reference page)	 (P315)	 (P315)	 (P315)	 (P315)	 (P345)
	Maximum horizontal load capacity	~18kg (with external guide)						
	Maximum vertical load capacity	~6.5kg						
	Maximum speed	~600mm/s						
	Stroke	50~1000mm~50mm (set in 50-mm increments)	Model	SCON-C				SSEL/XSEL
	Maximum horizontal load capacity	~60kg	Maximum number of positioning points	512 points		(—)	64 points	1500 points /4000 points
	Maximum vertical load capacity	~12kg	Maximum number of connected axes	1 axis				2 axes/6 axes
	Maximum speed	~1000mm/s	Power-supply voltage	AC100/200V				AC100V AC200V
	Stroke	50~300mm~50mm (set in 50-mm increments)	External view (reference page)	 (P325)				 (P355)  (P365)
	Maximum horizontal load capacity	~60kg (with external guide)						
	Maximum vertical load capacity	~19.5kg						
	Maximum speed	~800mm/s						

ERC2 / REP2

ERC2 series

An ultra-low-cost actuator with a built-in controller

Features

1 The built-in controller reduces wire to be connected.

Simply connect the dedicated cables to a PLC and a 24-VDC power supply, and the actuator is ready to go. You can also use a dedicated serial communication type with a gateway unit to easily connect to a field network.

2 No need for controller installation space, which reduces the control panel size

Since the control panel becomes smaller, you can achieve significant cost savings.

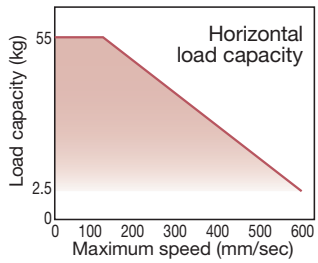
3 Ultra low price from $33,000, including a controller

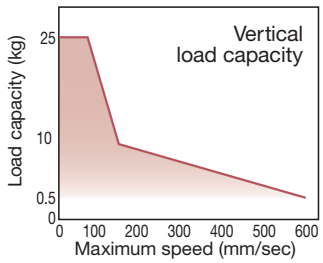
Through going rationalization of component parts led to at least 20% cost reduction over conventional models.

Specifications

The ERC series can be used under operating conditions inside the shaded range shown in the graphs below.

* These graphs are provided for reference only. Check the exact values of maximum speed and load capacity for each model using the correlation diagram of speed and load capacity shown on the applicable page.





Applicable controller

Built-in controller

RCP2 series

A servo actuator achieving both low price and high functionality by servo-controlling a pulse motor

Features

1 Wide variations

Various models are available for use in different applications, such as the slider type, rod type, belt drive type, high-thrust type, gripper type and rotary type.

2 Powerful push force owing to the characteristics of a pulse motor

The characteristics of a pulse motor that generates high torque at low speed are utilized to generate powerful push force with a compact body.

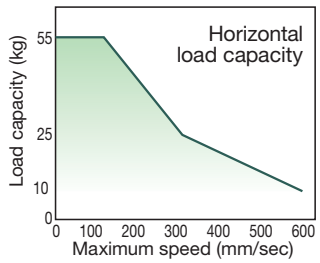
3 Supporting various control methods

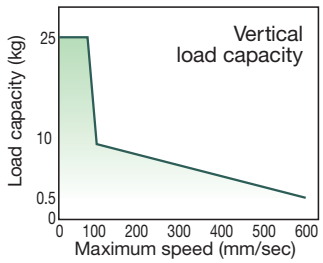
Various control actions are supported, such as the positioner mode, pulse-train input mode, serial communication mode, air-cylinder compatible mode, and program operation mode.

Specifications

The RCP2 series can be used under operating conditions inside the shaded range shown in the graphs below.

* These graphs are provided for reference only. Check the exact values of maximum speed and load capacity for each model using the correlation diagram of speed and load capacity shown on the applicable page.



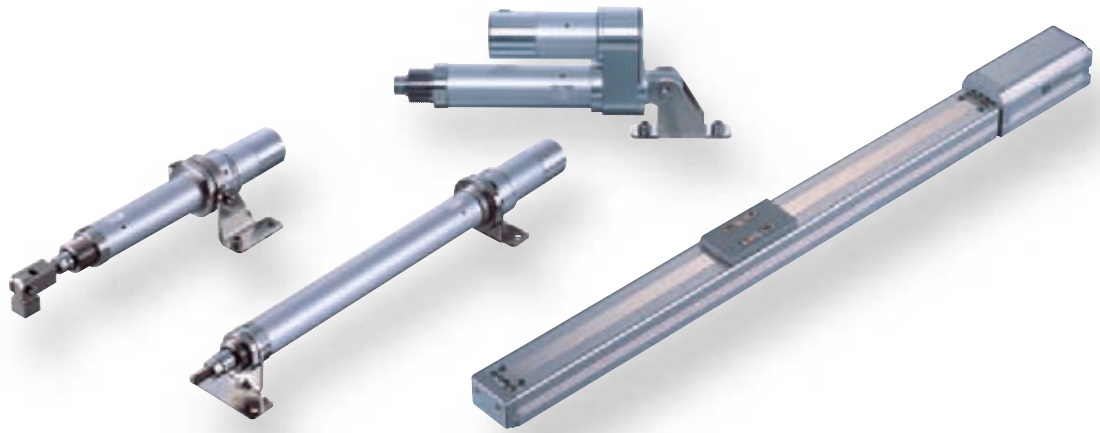


Applicable controller

External view					
Name	Positioner type	Solenoid valve type	Pulse-train input type	Serial communication type	Program operation type
Model	PCON-C	PCON-CY	PCON-PL / PO	PCON-SE	PSEL-C
Number of positioning points	Up to 512 points	3 points	(—)	64 points	1500 points
Reference page	P305				P335

RCA series

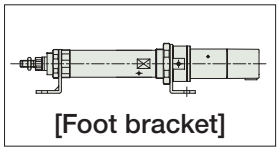
A compact actuator operating on a 24-V power supply

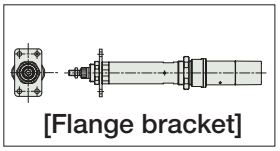


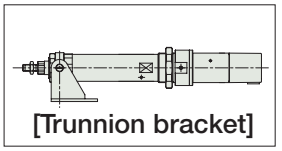
Features

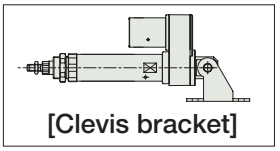
1 Same mounting brackets used on air cylinders

The same actuator mounting brackets used on air cylinders, such as foot, trunnion and clevis brackets, are available as options.


[Foot bracket]


[Flange bracket]


[Trunnion bracket]


[Clevis bracket]

2 Select a desired motor installation method from three types of coupling, built-in (direct coupling) and reversing.

Three motor installation methods are available, so you can select an optimal method based on ease of maintenance, installation space, etc.

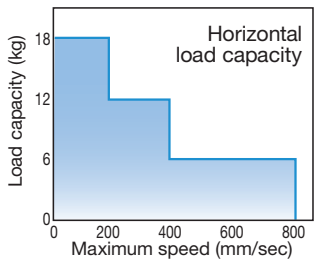
3 Home check sensor (optional)

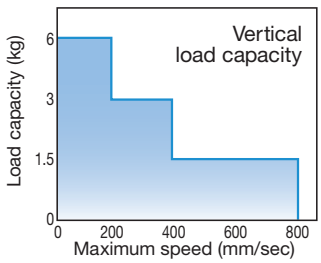
An optional sensor is available for checking if home return has completed without fail.

Specifications

The RCA series can be used under operating conditions inside the shaded range shown in the graphs below.

* The following graphs are provided for reference only. Check the exact values of maximum speed and load capacity for each model using the list on p. 19.



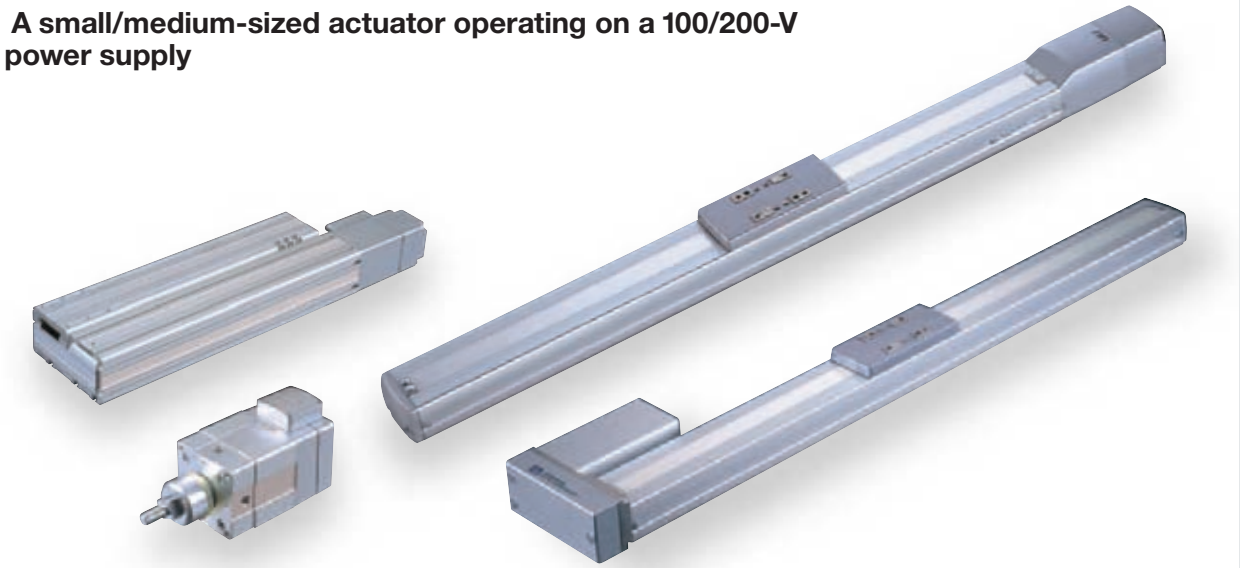


Applicable controller

External view					
Name	Positioner type	Solenoid valve type	Pulse-train input type	Serial communication type	Program operation type
Model	ACON-C	ACON-CY	ACON-PL / PO	ACON-SE	ASEL-C
Number of positioning points	Up to 512 points	3 points	(—)	64 points	1500 points
Reference page	P315				P345

RCS2 series

A small/medium-sized actuator operating on a 100/200-V power supply



Features

1 Maximum speed of 1,000 mm/s, maximum load capacity of 60 kg, and maximum stroke of 1,000 mm

The built-in 200-V servo motor enables high-speed transfer of fairly heavy works.

2 Supporting a combination of three or more axes if a XSEL controller is used

Use a XSEL controller capable of controlling up to six axes, to operate multi-axis configurations as well as systems combining single-axis/cartesian robots.

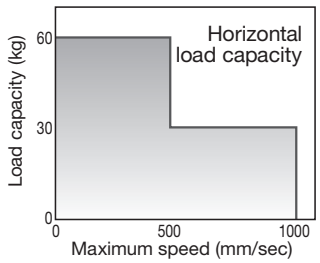
3 Select a desired motor installation method from three types of coupling, built-in (direct coupling) and reversing (except for certain models).

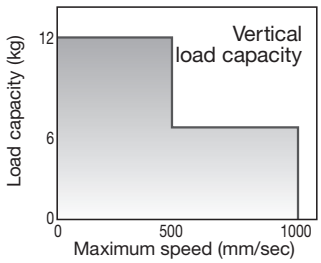
Three motor installation methods are available, so you can select an optimal method based on ease of maintenance, installation space, etc.

Specifications

The RCS2 series can be used under operating conditions inside the shaded range shown in the graphs below.

* The following graphs are provided for reference only. Check the exact values of maximum speed and load capacity for each model using the list on p. 19.





Applicable controller

External view						
Name	Positioner type	Solenoid valve type	Pulse-train input type	Serial communication type	Program operation type	Program operation type
Model	SCON-C				SSEL-C	X-SEL-☐
Number of positioning points	Up to 512 points	7 points	(—)	64 points	1500 points	4000 points
Reference page	P325				P355	P365

Follow the standard steps below to select your ROBO Cylinder.

1

Using the chart shown to the right, select a model that meet the conditions closest to what you require by examining the following items in this order:
[1] Actuator shape
[2] Direction/application
[3] Type selection
[4] Refer to the corresponding page in the specification list.

2

In the specification list, models in each series (ERC2/RCP2/RCA/RCS2) are listed by type. Check the following items:
[1] Speed (calculated from the travel time)
[2] Load capacity (transferable weight)
[3] Push force/thrust
[4] Controller power supply (24 VDC/100 VAC/200 VAC)
If the selected model satisfies the required specifications, go to the applicable page.

3

Check the operating conditions on that page showing the detailed specifications, external dimensions and controller information regarding the selected model.
Take note that with the ERC2 and RCP2 series, the load capacity will decrease as the speed increases because of the characteristics of the pulse motor installed in the actuator. Check the graph to see if both the desired speed and load capacity are satisfied.

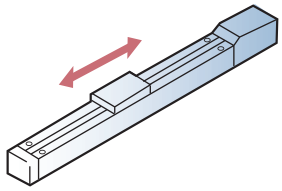
4

If you cannot find a model meeting your conditions or should you have any question, feel free to contact IAI.

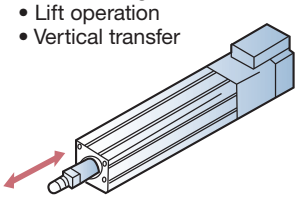
1 Select the actuator shape

Select the slider type or rod type in accordance with your specific application.

The slider type is used for...
- Positioning jigs and works
- Transferring products



The rod type is used for...
- Pushing works
- Press-fitting
- Lift operation
- Vertical transfer



2 Direction/application

Select whether the actuator will be used horizontally or vertically for the slide type, or whether it will be used in push-motion operation or transfer operation for the rod type.

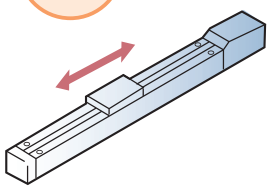
3 Type selection

Use the graphs below to select a type that satisfies the required weight of transferred work and travel distance, or required push force/thrust and travel distance.

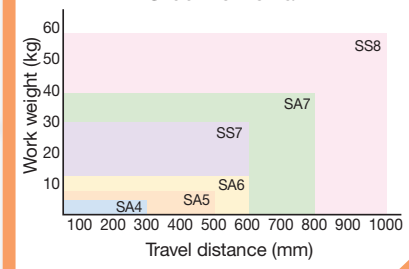
4 Check the specification list

Check the specification list to confirm that the specifications of the selected type meet the desired operating conditions.

Used horizontally



Slider horizontal



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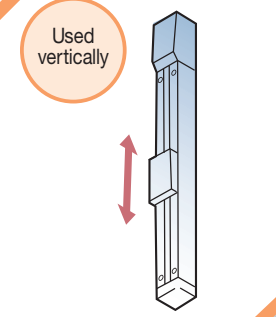
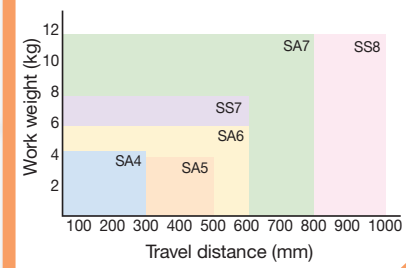
Used vertically



Slider vertical



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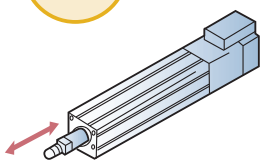
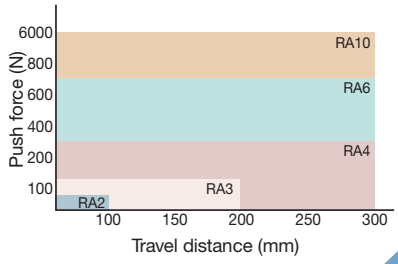
Push-motion operation



Rod for push motion



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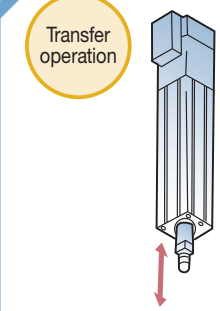
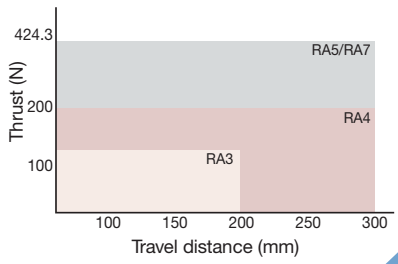
Transfer operation



Rod for transfer



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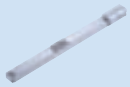
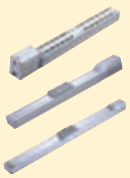
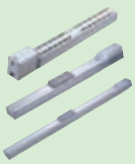
Slider type

Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. 50 100 150 200 250 300 350 400 450 500 550 600 700 800 900 1000 1100 1200	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
SA4 	665	4	1	Incremental Absolute	DC24V	RCA-SA4C-□-20-10-***	P49
	330	6	2.5			RCA-SA4C-□-20-5-***	
	165	8	4.5			RCA-SA4C-□-20-2.5-***	
	665	4	1		AC100V AC200V	RCS2-SA4C-□-20-10-***	P73
	330	6	2.5			RCS2-SA4C-□-20-5-***	
	165	8	4.5			RCS2-SA4C-□-20-2.5-***	
SA5 	600	4	1	Incremental	DC24V	RCP2-SA5C-I-42P-12-***	P21
	300	8	2.5			RCP2-SA5C-I-42P-6-***	
	150	8	4.5			RCP2-SA5C-I-42P-3-***	
	800 760	4	1	Incremental Absolute		RCA-SA5C-□-20-12-***	P51
	400 380	8	2			RCA-SA5C-□-20-6-***	
	200 190	12	4			RCA-SA5C-□-20-3-***	
	800 760	4	1		AC100V AC200V	RCS2-SA5C-□-20-12-***	P75
	400 380	8	2			RCS2-SA5C-□-20-6-***	
	200 190	12	4			RCS2-SA5C-□-20-3-***	
SA6 	600 515	6	1.5	Incremental	DC24V	ERC2-SA6C-I-PM-12-***	P3
	300 255	12	3			ERC2-SA6C-I-PM-6-***	
	150 125	12	6			ERC2-SA6C-I-PM-3-***	
	600 540	6	1.5			RCP2-SA6C-I-42P-12-***	P23
	300 270	12	3			RCP2-SA6C-I-42P-6-***	
	150 135	12	6			RCP2-SA6C-I-42P-3-***	
	800 760 640 540	6	1.5	Incremental Absolute		RCA-SA6C-□-30-12-***	P53
	400 380 320 270	12	3			RCA-SA6C-□-30-6-***	
	200 190 160 135	18	6			RCA-SA6C-□-30-3-***	
	800 760 640 540	6	1.5		AC100V AC200V	RCS2-SA6C-□-30-12-***	P77
	400 380 320 270	12	3			RCS2-SA6C-□-30-6-***	
	200 190 160 135	18	6			RCS2-SA6C-□-30-3-***	
SA7 	450 <400>	10	2.5	Incremental	DC24V	ERC2-SA7C-I-PM-16-***	P5
	250	20	5			ERC2-SA7C-I-PM-8-***	
	125	20	10			ERC2-SA7C-I-PM-4-***	
	533 480	35	5			RCP2-SA7C-I-56P-16-***	P25
	266 240	40	10			RCP2-SA7C-I-56P-8-***	
	133 120	40	15			RCP2-SA7C-I-56P-4-***	
	800 640 480	12	3	Incremental Absolute	AC100V AC200V	RCS2-SA7C-□-60-16-***	P79
	400 320 240	25	6			RCS2-SA7C-□-60-8-***	
	200 160 120	40	12			RCS2-SA7C-□-60-4-***	
SS7 	600 470	30	4	Incremental	DC24V	RCP2-SS7C-I-42P-12-***	P27
	300 230	30	8			RCP2-SS7C-I-42P-6-***	
	150 115	30	12			RCP2-SS7C-I-42P-3-***	
	600 470	15	4	Incremental Absolute	AC100V AC200V	RCS2-SS7C-□-60-12-***	P81
	300 230	30	8			RCS2-SS7C-□-60-6-***	
SS8 	1200 <750> 1000 <750> 800 <750>	20	3	Incremental	DC24V	RCP2-HS8C-I-86P-30-***	P31
	666 <600> 625 <600> 515	40	5			RCP2-SS8C-I-56P-20-***	P29
	333 <300> 310 <300> 255	50	12			RCP2-SS8C-I-56P-10-***	
	165 <150> 155 <150> 125	55	20			RCP2-SS8C-I-56P-5-***	
	1000 960 765 625 515	20	4	Incremental Absolute	AC100V AC200V	RCS2-SS8C-□-100-20-***	P83
	500 480 380 310 255	40	8			RCS2-SS8C-□-100-10-***	
	1000 960 765 625 515	30	6			RCS2-SS8C-□-150-20-***	
	500 480 380 310 255	60	12			RCS2-SS8C-□-150-10-***	
BA6 / BA7 	1000	4	—	Incremental	DC24V	RCP2-BA6-I-42P-54-***	P45
	1500	8	—			RCP2-BA7-I-42P-54-***	P47

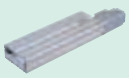
* The figures in < > in stroke/maximum speed bands apply when the actuator is used vertically.

Rod type

Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. 50 100 150 200 250 300 350 400 450 500 550 600	Rated thrust (N)	Maximum push force (N)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
RA2 	25	—	100	7	2.5	Incremental	DC24V	RCP2-RA2C-I-20P-1-✱✱✱	P105
RA3 	187	—	73.5	15	6	Incremental	DC24V	RCP2-RA3C-I-28P-5-✱✱✱	P107
	114	—	156.8	30	10			RCP2-RA3C-I-28P-2.5-✱✱✱	
	500	36.2	—	4	1.5	Incremental	DC24V	RCA-RA3C-I-20-10✱✱✱	P125
	250	72.4	—	9	3			RCA-RA3C-I-20-5-✱✱✱	
	125	144.8	—	18	6.5			RCA-RA3C-I-20-2.5✱✱✱	
RA4 	458 458 350	—	150	25	4.5	Incremental	DC24V	RCP2-RA4C-I-42P-10-✱✱✱	P109
	250 237 175	—	284	40	12			RCP2-RA4C-I-42P-5-✱✱✱	
	125 <114> 118 <114> 87	—	358	40	19			RCP2-RA4C-I-42P-2.5-✱✱✱	
	600	18.9	—	3	1	Incremental Absolute	DC24V	RCA-RA4C-☐-20-12-✱✱✱	P127
	300	37.7	—	6	2			RCA-RA4C-☐-20-6-✱✱✱	
	150	75.4	—	12	4			RCA-RA4C-☐-20-3-✱✱✱	
	600	28.3	—	4	1.5			RCA-RA4C-☐-30-12-✱✱✱	
	300	56.6	—	9	3			RCA-RA4C-☐-30-6-✱✱✱	
	150	113.1	—	18	6.5			RCA-RA4C-☐-30-3-✱✱✱	
	600	18.9	—	3	1		AC100V AC200V	RCS2-RA4C-☐-20-12-✱✱✱	P153
	300	37.7	—	6	2			RCS2-RA4C-☐-20-6-✱✱✱	
	150	75.4	—	12	4			RCS2-RA4C-☐-20-3-✱✱✱	
	600	28.3	—	4	1.5			RCS2-RA4C-☐-30-12-✱✱✱	
	300	56.6	—	9	3			RCS2-RA4C-☐-30-6-✱✱✱	
	150	113.1	—	18	6.5			RCS2-RA4C-☐-30-3-✱✱✱	
RA5 	800 755	63.8	—	12	2	Incremental Absolute	AC100V AC200V	RCS2-RA5C-☐-60-16-✱✱✱	P155
	400 377	127.5	—	25	5			RCS2-RA5C-☐-60-8-✱✱✱	
	200 188	255.1	—	50	11.5			RCS2-RA5C-☐-60-4-✱✱✱	
	800 755	105.8	—	15	3.5			RCS2-RA5C-☐-100-16-✱✱✱	
	400 377	212.7	—	30	9			RCS2-RA5C-☐-100-8-✱✱✱	
	200 188	424.3	—	60	18			RCS2-RA5C-☐-100-4-✱✱✱	
RA6 	600 500	—	78	25	4.5	Incremental	DC24V	ERC2-RA6C-I-PM-12-✱✱✱	P7
	300 250	—	157	40	12			ERC2-RA6C-I-PM-6-✱✱✱	
	150 125	—	304	40	18			ERC2-RA6C-I-PM-3-✱✱✱	
	450 <400>	—	240	40	5		DC24V	RCP2-RA6C-I-56P-16-✱✱✱	P111
	210	—	470	50	17.5			RCP2-RA6C-I-56P-8-✱✱✱	
	130	—	800	55	26			RCP2-RA6C-I-56P-4-✱✱✱	
RA7 	450 <400>	—	220	40	5	Incremental	DC24V	ERC2-RA7C-I-PM-16-✱✱✱	P9
	250 <200>	—	441	50	17.5			ERC2-RA7C-I-PM-8-✱✱✱	
	125	—	873	55	25			ERC2-RA7C-I-PM-4-✱✱✱	
	600 505	85.3	—	10	2.5		AC100V AC200V	RCS2-RA7AD-I-60-12-✱✱✱	P159
	300 250	169.5	—	20	7			RCS2-RA7AD-I-60-6-✱✱✱	
	150 125	340.1	—	40	15.0			RCS2-RA7AD-I-60-3-✱✱✱	
	600 505	141.1	—	15	5.5		AC100V AC200V	RCS2-RA7AD-I-100-12-✱✱✱	
	300 250	283.2	—	30	12.5			RCS2-RA7AD-I-100-6-✱✱✱	
	800	105.8	—	10	3.5		AC100V AC200V	RCS2-RA7BD-I-100-16-✱✱✱	P161
	400	212.7	—	22	9			RCS2-RA7BD-I-100-8-✱✱✱	
	200	424.3	—	40	19.5			RCS2-RA7BD-I-100-4-✱✱✱	
	800	158.8	—	15	6.5		AC100V AC200V	RCS2-RA7BD-I-150-16-✱✱✱	
	400	318.5	—	35	14.5			RCS2-RA7BD-I-150-8-✱✱✱	
RA10 	250 <167>	—	1500	80	80	Incremental	DC24V	RCP2-RA10C-I-86P-10-✱✱✱	P113
	125	—	3000	150	100			RCP2-RA10C-I-86P-5-✱✱✱	
	63	—	6000	300	150			RCP2-RA10C-I-86P-2.5-✱✱✱	

* The figures in < > in stroke/maximum speed bands apply when the actuator is used vertically.

Arm type / Flat type

Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. 50 100 150 200 250 300 350 400 450 500 550 600 700 800 900	Thrust (N)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
A4R 	330	39.2	—	2.5	Incremental Absolute	DC24V	RCA-A4R-□-20-10-✱✱✱	P189
	165	78.4	—	4.5			RCA-A4R-□-20-5-✱✱✱	
	330	39.2	—	2.5		AC100V AC200V	RCS2-A4R-□-20-10-✱✱✱	P195
	165	78.4	—	4.5			RCS2-A4R-□-20-5-✱✱✱	
A5R 	400	33.3	—	2	Incremental Absolute	DC24V	RCA-A5R-□-20-12-✱✱✱	P191
	200	65.7	—	4			RCA-A5R-□-20-6-✱✱✱	
	400	33.3	—	2		AC100V AC200V	RCS2-A5R-□-20-12-✱✱✱	P197
	200	65.7	—	4			RCS2-A5R-□-20-6-✱✱✱	
A6R 	400	48.4	—	3	Incremental Absolute	DC24V	RCA-A6R-□-30-12-✱✱✱	P193
	200	96.8	—	6			RCA-A6R-□-30-6-✱✱✱	
	400	48.4	—	3		AC100V AC200V	RCS2-A6R-□-30-12-✱✱✱	P199
	200	96.8	—	6			RCS2-A6R-□-30-6-✱✱✱	
F5D 	800	63.8	—	2	Incremental Absolute	AC100V AC200V	RCS2-F5D-□-60-16-✱✱✱	P201
	400	127.5	—	5			RCS2-F5D-□-60-8-✱✱✱	
	200	255.1	—	11.5			RCS2-F5D-□-60-4-✱✱✱	
	800	105.8	—	3.5			RCS2-F5D-□-100-16-✱✱✱	
	400	212.7	—	9			RCS2-F5D-□-100-8-✱✱✱	
	200	424.3	—	18			RCS2-F5D-□-100-4-✱✱✱	

Gripper type

Type	Stroke (mm) and maximum speed (mm/sec) 10 14 19 20 40 (60) (80) 100 (120) (200)	Maximum gripping force (N)	Encoder type	Controller input power supply	Model	Reference page
GRS 	33.3	21	Incremental	DC24V	RCP2-GRS-I-20P-1-10	P205
GRM	36.7	80			RCP2-GRM-I-28P-1-14	P207
GR8 	(60cpm)	45.1		AC100V AC200V	RCS2-GR8-I-60-5-✱✱✱	P217
3-finger lever type 	200	18		DC24V	RCP2-GR3LS-I-28P-30-19	P209
	200	51			RCP2-GR3LM-I-42P-30-19	P211
3-finger slide type 	40	22		DC24V	RCP2-GR3SS-I-28P-30-10	P213
	50	102			RCP2-GR3SM-I-42P-30-14	P215

Rotary type

Type	Oscillation angle (°) and maximum speed (°/sec) 300 330	Maximum torque (N • m)	Encoder type	Controller input power supply	Model	Reference page
RTB-20 	600	1.1	Incremental	DC24V	RCP2-RTB-I-28P-20-330	P219
RTB-30	400	1.7			RCP2-RTB-I-28P-30-330	
RTC-20 	600	1.1			RCP2-RTC-I-28P-20-330	P221
RTC-30	400	1.7			RCP2-RTC-I-28P-30-330	
RT6 	500	2.4		AC100V AC200V	RCS2-RT6-I-60-18-300	P223
RT6R 	500	2.4			RCS2-RT6R-I-60-18-300	P225
RT7R 	500	0.764			RCS2-RT7R-I-60-4-300	P227

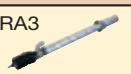
Cleanroom type

Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. 50 100 150 200 250 300 350 400 450 500 550 600 700 800 900 1000 1100 1200	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
SA4 	665	4	1	Incremental Absolute	DC24V	RCACR-SA4C-□-20-10-✱✱✱	P243
	330	6	2.5			RCACR-SA4C-□-20-5-✱✱✱	
	165	8	4.5			RCACR-SA4C-□-20-2.5-✱✱✱	
	665	4	1		AC100V AC200V	RCS2CR-SA4C-□-20-10-✱✱✱	P253
	330	6	2.5			RCS2CR-SA4C-□-20-5-✱✱✱	
	165	8	4.5			RCS2CR-SA4C-□-20-2.5-✱✱✱	

Cleanroom type

Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. (50 100 150 200 250 300 350 400 450 500 550 600 700 800 900 1000 1100 1200)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
SA5 	600	4	1	Incremental	DC24V	RCP2CR-SA5C-I-42P-12-***	P231
	300	8	2.5			RCP2CR-SA5C-I-42P-6-***	
	150	8	4.5			RCP2CR-SA5C-I-42P-3-***	
	800 760	4	1	Incremental Absolute		RCACR-SA5C-□-20-12-***	P245
	400 380	8	2			RCACR-SA5C-□-20-6-***	
	200 190	12	4			RCACR-SA5C-□-20-3-***	
	800 760	4	1		AC100V AC200V	RCS2CR-SA5C-□-20-12-***	P255
	400 380	8	2			RCACR-SA5C-□-20-6-***	
	200 190	12	4			RCACR-SA5C-□-20-3-***	
SA6 	600 540	6	1.5	Incremental	DC24V	RCP2CR-SA6C-I-42P-12-***	P233
	300 270	12	3			RCP2CR-SA6C-I-42P-6-***	
	150 135	12	6			RCP2CR-SA6C-I-42P-3-***	
	800 760 640 540	6	1.5	Incremental Absolute		RCACR-SA6C-□-30-12-***	P247
	400 380 320 270	12	3			RCACR-SA6C-□-30-6-***	
	200 190 160 135	18	6			RCACR-SA6C-□-30-3-***	
	800 760 640 540	6	1.5		AC100V AC200V	RCS2CR-SA6C-□-30-12-***	P257
	400 380 320 270	12	3			RCACR-SA6C-□-30-6-***	
	200 190 160 135	18	6			RCACR-SA6C-□-30-3-***	
SA7 	533 <400> 480 <400>	25	5	Incremental	DC24V	RCP2CR-SA7C-I-56P-16-***	P235
	266 240	30	10			RCP2CR-SA7C-I-56P-8-***	
	133 120	30	15			RCP2CR-SA7C-I-56P-4-***	
	800 640 480	12	3	Incremental Absolute	AC100V AC200V	RCS2CR-SA7C-□-60-16-***	P259
	400 320 240	25	6			RCS2CR-SA7C-□-60-8-***	
	200 160 120	40	12			RCS2CR-SA7C-□-60-4-***	
SS7 	600 470	30	4	Incremental	DC24V	RCP2CR-SS7C-I-42P-12-***	P237
	300 230	30	8			RCP2CR-SS7C-I-42P-6-***	
	150 115	30	12			RCP2CR-SS7C-I-42P-3-***	
	600 470	15	4	Incremental Absolute	AC100V AC200V	RCS2CR-SS7C-□-60-12-***	P261
	300 230	30	8			RCS2CR-SS7C-□-60-6-***	
SS8 	1200 <750> 1000 <750> 800 <750>	20	3	Incremental	DC24V	RCP2CR-HS8C-I-86P-30-***	P241
	666 <500> 625 <500> 515 <500>	40	5			RCP2CR-SS8C-I-56P-20-***	P239
	333 <300> 310 <300> 255	50	12			RCP2CR-SS8C-I-56P-10-***	
	165 <150> 155 <150> 125	55	20			RCP2CR-SS8C-I-56P-5-***	
	1000 960 765 625 515	20	4	Incremental Absolute	AC100V AC200V	RCS2CR-SS8C-□-100-20-***	P263
	500 480 380 310 255	40	8			RCS2CR-SS8C-□-100-10-***	
	1000 960 765 625 515	30	6			RCS2CR-SS8C-□-150-20-***	
	500 480 380 310 255	60	12			RCS2CR-SS8C-□-150-10-***	

Dustproof/splash-proof type

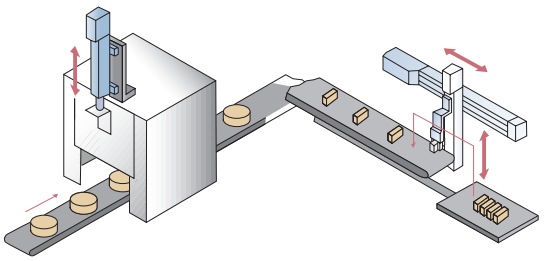
Type	Stroke (mm) and maximum speed (mm/sec) * Each band covers supported strokes, and the figure in the band indicates the maximum speed for each corresponding stroke. (50 100 150 200 250 300 350 400 450 500 550 600 650 700)	Rated thrust (N)	Maximum push force (N)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Encoder type	Controller input power supply	Model	Reference page
SA16 	180	—		25	—	Incremental	DC24V	RCP2W-SA16C-I-86P-8-***	P271
	133	—		35	—			RCP2W-SA16C-I-86P-4-***	
RA4 	450<250> 450 <250> 350 <250>	—	150	25	4.5	Incremental	DC24V	RCP2W-RA4C-I-42P-10-***	P273
	190 190 175	—	284	40	12			RCP2W-RA4C-I-42P-5-***	
	125<115> 115 85	—	358	40	19			RCP2W-RA4C-I-42P-2.5-***	
RA6 	320<265>	—	240	40	5	Incremental	DC24V	RCP2W-RA6C-I-56P-16-***	P275
	200	—	470	50	17.5			RCP2W-RA6C-I-56P-8-***	
	100	—	800	55	26			RCP2W-RA6C-I-56P-4-***	
RA10 	250<167>	—	1500	80	80	Incremental	DC24V	RCP2W-RA10C-I-86P-10-***	P277
	125	—	3000	150	100			RCP2W-RA10C-I-86P-5-***	
	63	—	6000	300	150			RCP2W-RA10C-I-86P-2.5-***	
RA3 	500	36.2	—	4	1.5	Incremental	DC24V	RCAW-RA3□-I-20-10-***	P279
	250	72.4	—	9	3			RCAW-RA3□-I-20-5-***	
	125	144.8	—	18	6.5			RCAW-RA3□-I-20-2.5-***	
RA4 	600	18.9	—	3	1	Incremental Absolute	DC24V	RCAW-RA4□-□-20-12-***	P281
	300	37.7	—	6	2			RCAW-RA4□-□-20-6-***	
	150	75.4	—	12	4			RCAW-RA4□-□-20-3-***	
	600	28.3	—	4	1.5		AC100V AC200V	RCS2W-RA4□-□-30-12-***	P283
	300	56.6	—	9	3			RCS2W-RA4□-□-30-6-***	
	150	113.1	—	18	6.5			RCS2W-RA4□-□-30-3-***	

Basic Functions

Operation Pattern 1 Positioning Operation

Move the load installed onto the slider or rod of the axis to perform positioning operation at a repeatability of ±0.02 mm.

■ Open/close a gate ■ Pick & place unit

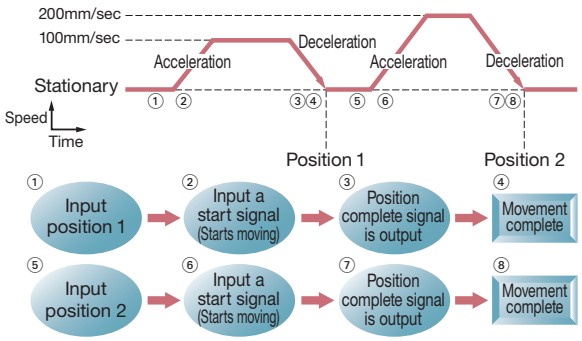


Application ● Transfer or move works, etc.

Features

- Multi-point positioning supporting up to 512 positioning points
- Speed and acceleration/deceleration can be set for each position.
- By setting a positioning band, a position complete signal can be output at a desired position before a specified position.
- Acceleration and deceleration can be set differently.
- Speed can be changed without stopping the actuator.

Operation Example



Position Data Table

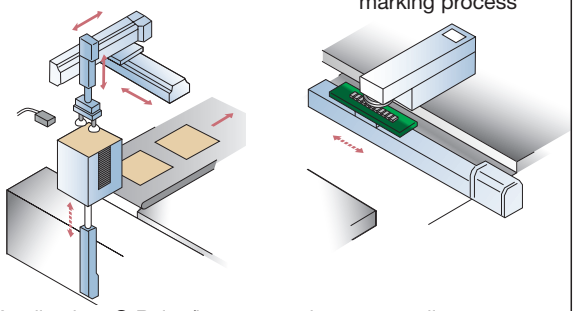
(Set on a teaching pendant or using PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	100	0.3	0.3	0	10
2	200	200	0.3	0.3	0	20

Operation Pattern 2 Pitch-Feed Function (Incremental Movement Function)

In addition to positioning operation based on coordinates determined with respect to the home, the current position is used as the origin to move the actuator by a specified distance.

■ Raise/lower a stocker ■ Transfer works in a marking process

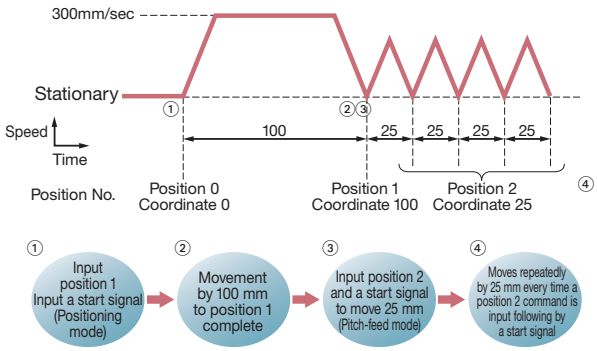


Application ● Raise/lower a stocker, move pallets, etc.

Features

- In continuous movements at an equal pitch, the actuator can be moved using a single set of position data without setting many positions.
- A desired pitch-feed distance can be set easily by specifying it in the position data table.

Operation Example



Position Data Table

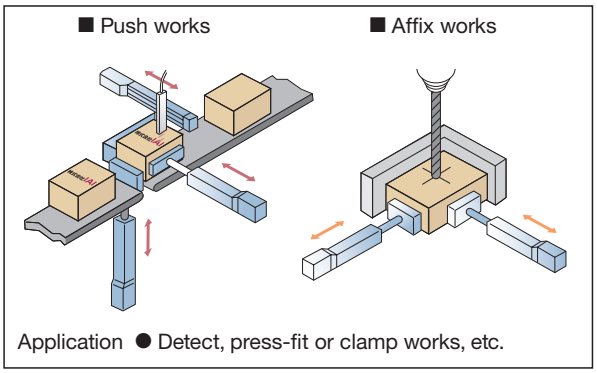
(Set on a teaching pendant or using PC software)

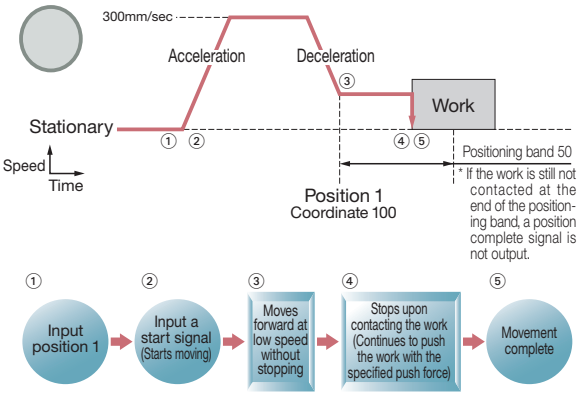
No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	300	0.3	0.3	0	0.1
2 =	25	300	0.3	0.3	0	0.1

(Teaching pendant)
"=" is shown in the pitch-feed mode.

Operation Pattern 3 Push-Motion Operation

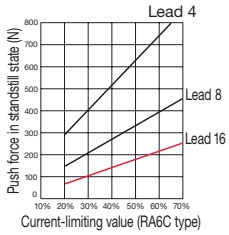
Just as you do with an air cylinder, the rod can be maintained in a condition where it continues to push the work, etc.





Features

- Since a position complete signal is output when the work is contacted, this signal can be combined with a zone signal to discriminate works or for other purposes.
- The force that pushes the work (push force) can be adjusted by changing the setting in the position data table.



Position Data Table

(Set on a teaching pendant or using PC software)

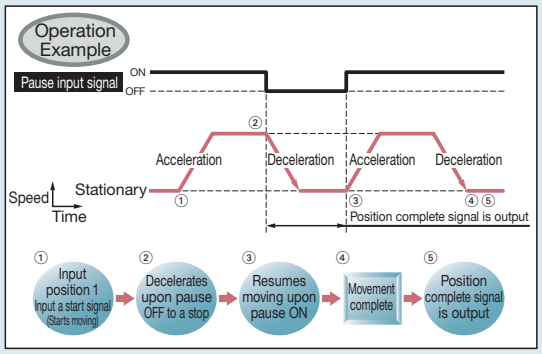
No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	300	0.3	0.3	50	50

Caution The accuracy of push force in standstill state is not guaranteed. These values are provided for reference only. If the push force is too small, the actuator may not be able to perform push-motion operation property due to slide resistance, etc.

Pause Input

The slider decelerates to a stop upon receiving an external signal during movement.

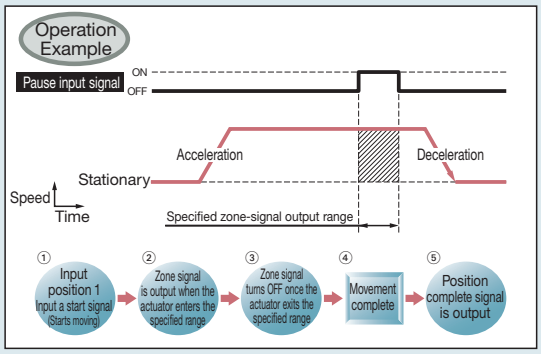
If the pause input is cut off as a result of an interlock (contact prevention) setting with respect to surrounding equipment, the actuator will decelerate to a stop. Once the pause input is connected again, the remaining movement will be resumed. For safety reasons, the pause signal uses the contact-B logic (the actuator operates while this signal is OFF).



Zone Output

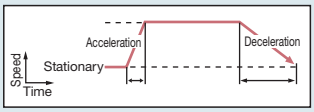
A signal is output when the slider enters the specified range.

Since a signal can be output at a desired position (the range is set by parameters) while the actuator is moving, you can set a dangerous area or reduce the tact time.



Acceleration and Deceleration Can Be Set Differently

With ROBO Cylinders, acceleration and deceleration are set in the position data table. Since acceleration and deceleration can be set differently, slow deceleration can be achieved to prevent the actuator from receiving shock upon stopping.



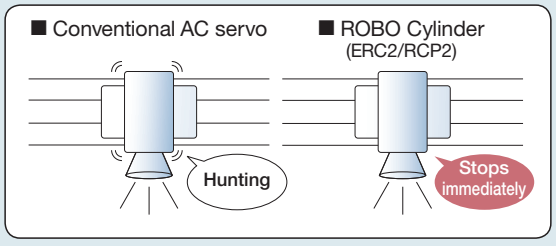
Position Data Table

(Set on a teaching pendant or using PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	300	100	0.3	0.01	0	0.1
2			0.3	0.01	0	0.1

No Microvibration at Stopping (ERC2/RCP2)

ROBO Cylinders do not generate microvibration associated with conventional servo motors, which makes them ideal for measurement systems equipped with a camera, etc.



Easy Basic Operations by Specifying Target Positions by Numbers

ROBO Cylinders support three operation patterns of “positioning operation,” “pitch-feed operation” and “push-motion operation.” Also, positioning operation can be performed in a number of different ways such as simple 3-point movement, movement by transmitting data via a network, and pulse-train control. You can select a desired pattern/mode to perform any control actions from simple tasks to more advanced ones.

Operation pattern

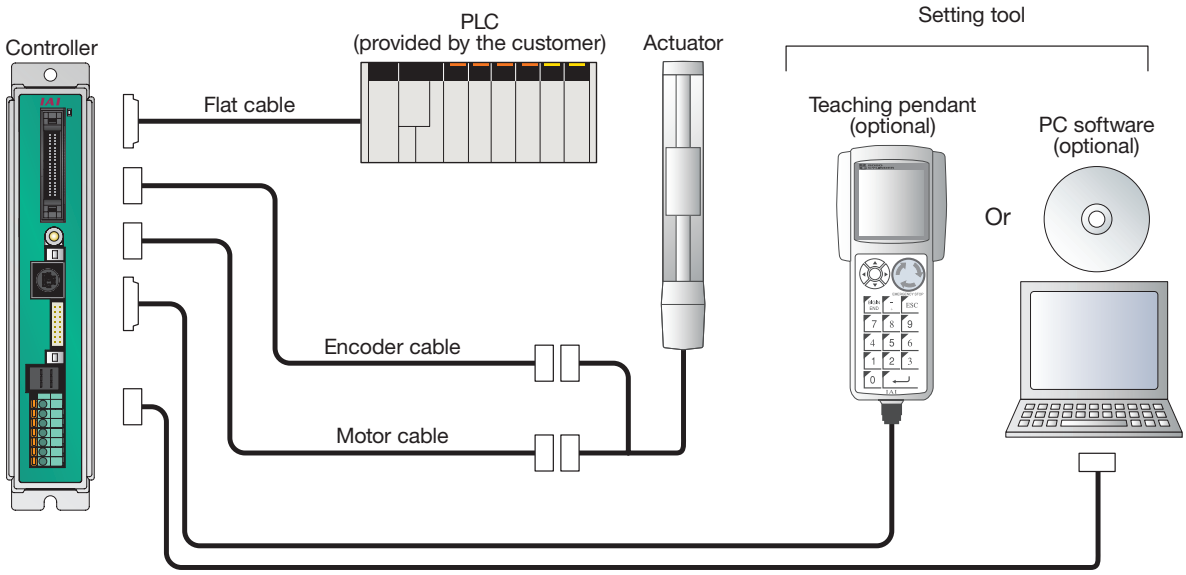
Positioning operation
The actuator can be moved freely by specifying via external I/Os the multiple target positions input to the controller.

- **Positioner type**
  Specify a target position number and input a start signal, and the actuator will start moving.
- **Solenoid valve type**
  Simple operation similar to how you operate an air cylinder. All you need is to turn a position assignment signal ON to effect movement.
- **Pulse-train control type**
  The actuator can be operated freely using pulse trains from a PLC or positioning unit.
- **Coordinate-specification movement type**
  The actuator can be moved by specifying target position coordinates, speed, acceleration, etc., from a PLC via DeviceNet or CC-Link. (A gateway unit is required.)
- **Program operation type**
  Everything from actuator operation to communication with external equipment can be performed using the programs input to the controller. No command device, such as PLC, is required.

Pitch-feed operation
(incremental operation)
Normally the actuator is moved with the target position determined based on coordinates with respect to the home. In this mode, the actuator can be moved by the specified distance from its current position.

Push-motion operation
Just as you do with an air cylinder, the rod can be maintained in a condition where it continues to push the work.

Basic System Configuration of ROBO Cylinder



Explanation of Position Data

Input the following position data to the controller and specify a desired number in the far-left column using an input/output signal, and the actuator will start moving to the specified position (coordinates) at the specified speed, acceleration and deceleration.

	①	②	③	④	⑤	⑥	⑦	⑧	⑨		⑩	⑪	⑫	⑬
	No	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Threshold (%)	Positioning band (mm)	Zone –	Zone +	Acceleration / deceleration mode	Incremental	Command mode	Standstill mode
	0	50.00	100.00	0.30	0.30	0	0	0.10	0.00	0.00	0	0	0	0
	1	100.00	500.00	0.30	0.10	0	0	0.10	10.00	20.00	0	0	0	0
	2	10.00	100.00	0.30	0.30	0	0	0.10	0.00	0.00	0	1	0	0
	3													

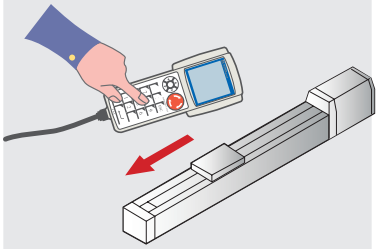
① Position No.	Target position number specified externally.
② Position	Coordinates of the target position (distance from the home).
③ Speed	Specified speed at which the actuator will move to the target position.
④ Acceleration	Rate at which the actuator will accelerate to the specified speed after starting movement from a stationary state. Acceleration is set in G, where 1 G represents 9,800 mm/s2 (reaching 9,800 mm/s per second).
⑤ Deceleration	Rate at which the actuator will decelerate when stopping from a moving state. Deceleration is also set in G.
⑥ Push	Push force applied during push-motion operation (force with which the actuator rod pushes), indicated by a percentage of the maximum push force.
⑦ Threshold	When a press-fit task is performed as push-motion operation, this current value is used to check if the press-fit task was completed properly. Since a signal is output if the current threshold is exceeded, output of a position complete signal after a threshold signal indicates that the press-fit task was completed properly. *This function is available only with the PCON-CF controller (to be released soon).
⑧ Positioning band	In positioning operation, this value sets the distance in mm before the movement completion position where a position complete signal will be output. In push-motion operation, it indicates the range of push-motion operation.
⑨ Position zone	A signal can be output when the moving slider (or rod) enters the specified zone. Normally a zone signal requires the output range to be specified by parameters, and only up to two zones/output signals can be set. On the other hand, in the position data table a zone signal can be set for each position, up to 512 points. Note, however, that only one common output signal is used for all points, and the zone range specified for each position becomes valid only when the actuator passes through the specified position.
⑩ Acceleration / deceleration mode	This value is used to set acceleration/deceleration operation. (Available with the ACON/SCON only).
⑪ Incremental	Input an applicable value when performing pitch-feed operation. (0: Positioning operation, 1: Pitch-feed operation)
⑫ Command mode	Not used.
⑬ Standstill mode	Power-saving mode to be applied in standstill state.

How to Input Target Positions

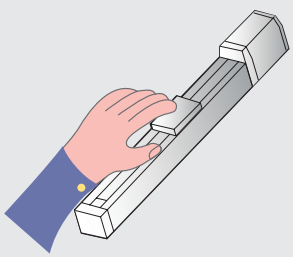
Positions can be input in any of the following three methods.

① Directly enter coordinates (mm) using numerical keys.

② Move the actuator by jogging/inching and write the achieved position.



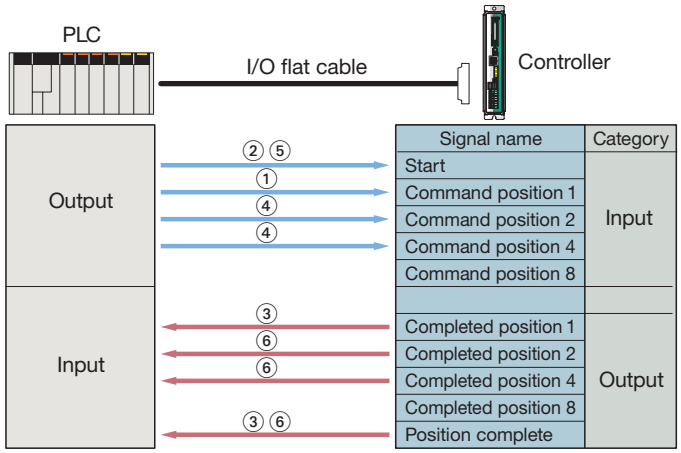
③ Move the actuator to a desired position and write the achieved position.



Details of Positioning Function

Positioner Mode

A basic method of positioning operation. Enter coordinates, speed and acceleration/deceleration in the position data table and specify a position number via I/O (input/output) signals from a PLC, and the actuator will move to the specified position at the specified speed and acceleration.

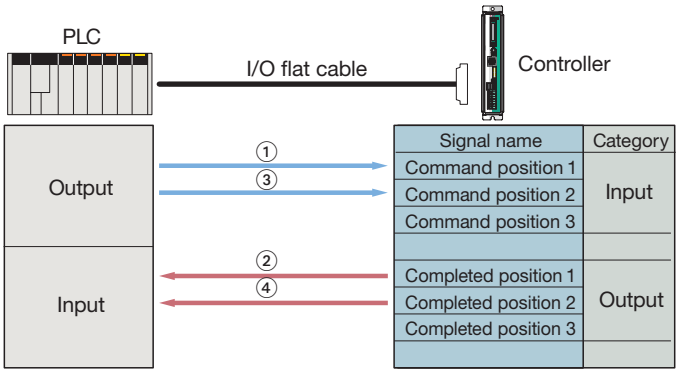


Signal name	Category
Start	Input
Command position 1	
Command position 2	
Command position 4	
Command position 8	
Completed position 1	Output
Completed position 2	
Completed position 4	
Completed position 8	
Position complete	

1. Specify position 1
2. Turn the start input ON
(Movement)
3. Position complete signal is output/completed position 1 is output
4. Specify position 6 (specify a position number as a binary code)
5. Turn the start input ON
(Movement)
6. Position complete signal is output/completed position 2 is output

Solenoid Valve Mode

A simplified version of the positioner mode. Just like in the positioner mode, a position number is specified from a PLC to move the actuator. However, a start signal need not be input and all you need is to turn ON the position number signal.

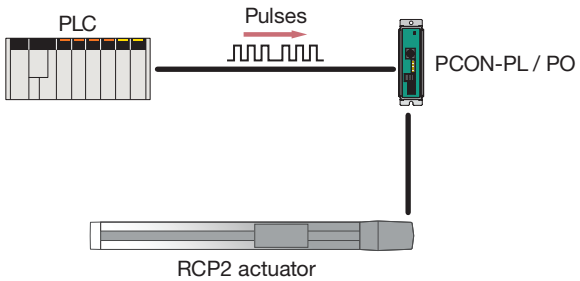


Signal name	Category
Command position 1	Input
Command position 2	
Command position 3	
Completed position 1	Output
Completed position 2	
Completed position 3	

1. Turn ON position 1
(Movement)
2. Completed position 1 is output
3. Turn ON position2
(Movement)
4. Completed position 2 is output

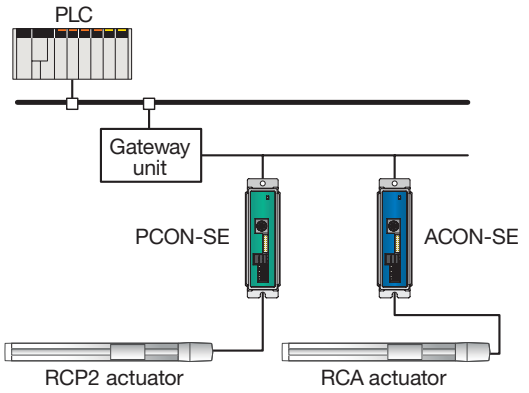
Pulse-Train Control Mode

The target position, speed and acceleration of the actuator can be controlled freely using pulse trains received from a PLC or positioning unit. Use this mode if there are many positioning points or when you wish to control everything including other systems.



Coordinate-Specification Movement Mode

If the controller is connected to a field network such as DeviceNet or CC-Link using a gateway unit, position coordinates, speed and acceleration/deceleration can be directly sent from a PLC to move the actuator. Since the operating conditions vary depending on the number of connected axes and amount of data transmitted, contact IAI's Sales if you are thinking about using this mode.



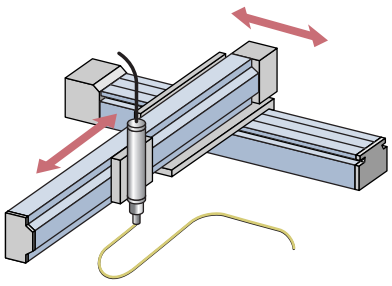
Program Operation Mode

ROBO Cylinders can be operated by programs using PSEL, ASEL, SSEL and XSEL controllers. The program operation mode lets you easily perform interpolation operation involving the X and Y-axes in coating processes, etc.

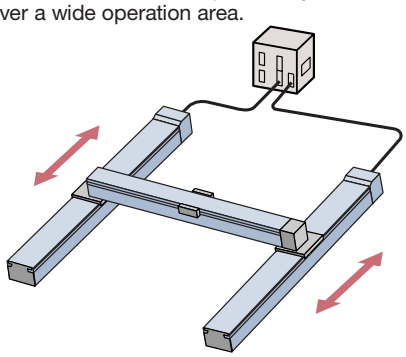
Since all tasks from actuator operation to communication with external equipment can be performed using a single controller, PLC and other command devices are no longer necessary and the overall system cost can be reduced.

A PSEL, ASEL or SSEL controller can operate up to two axes, while a XSEL controller can operate up to six axes simultaneously.

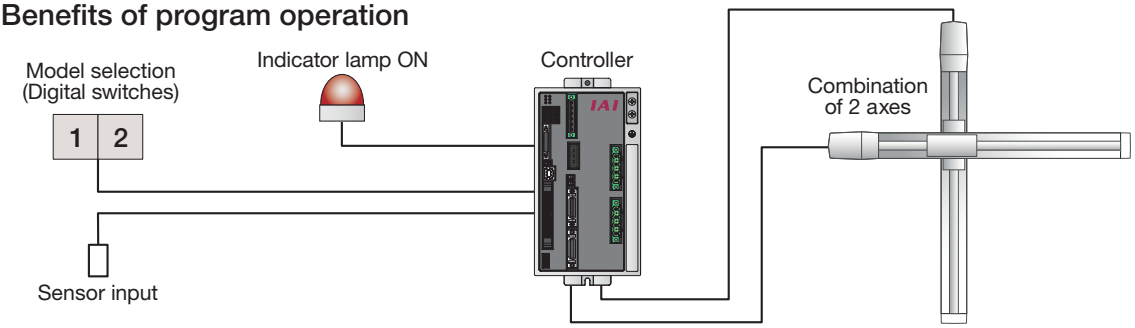
[Interpolation operation]
Arc or linear interpolation operation, ideal for coating adhesive or sealant, can be performed.



[Synchronized operation]
(* Excluding PSEL and ASEL)
Two actuator axes can be operated synchronously to cover a wide operation area.

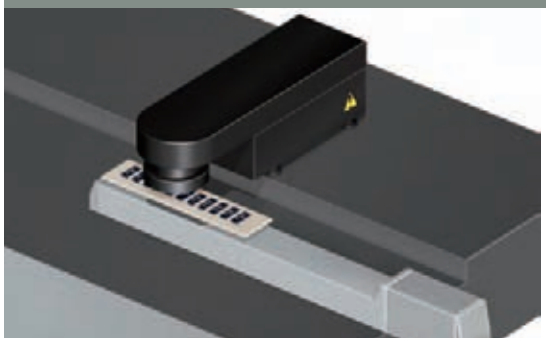


Benefits of program operation



Marking machine

Pitch feed

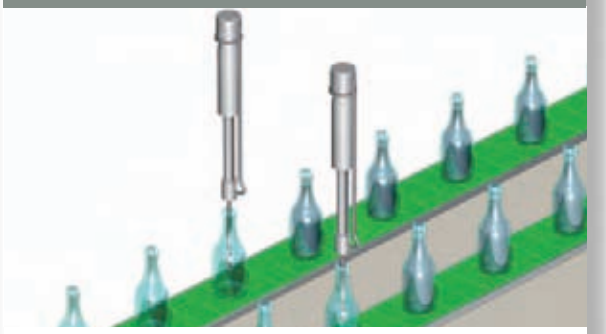


Use a ROBO Cylinder in the “pitch feed” mode to send works in a laser marking process.

Actuator ERC2-SA6 (P3) Controller Built in (P295)

Liquid injector

Positioning

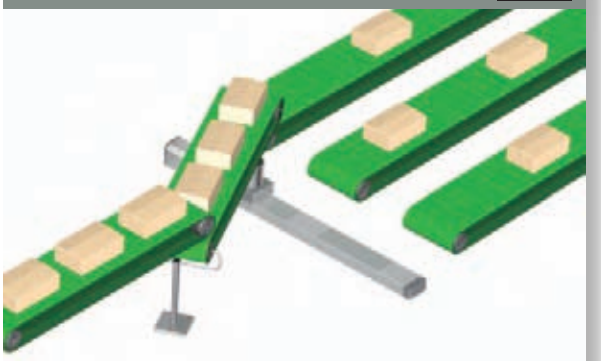


Insert the nozzle into each shampoo container and inject shampoo as the nozzle is raised. Speed adjustment is controlled using pulse trains.

Actuator RCA-RA3C (P125) Controller ACON-PL (P315)

Belt conveyor movement

Positioning

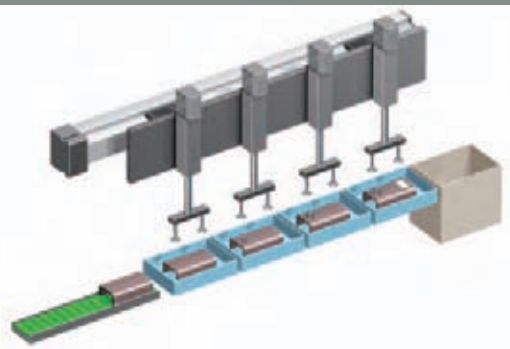


Works can be sorted at high speed.

Actuator RCS2-SS8C (P83) Controller SCON-C (P325)

Parts transfer system

Positioning

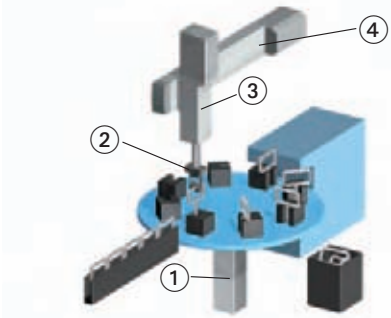


A ROBO Cylinder is used to move works to vertical positions on a transfer device to various processes to provide a compact line.

Actuator RCA-RA4C (P127) Controller ACON-CY (P315)

Parts inspection system

Pitch feed

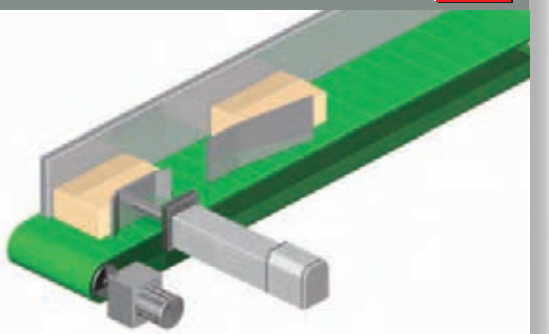


All operations including horizontal/vertical movement, gripping and rotation are performed with ROBO Cylinders alone. There are fewer cables because the controller is connected to a field network.

Actuator ① RCS2-RT6 (P223) ② RCP2-GRM (P207) ③ RCP2-RA6C (P111) ④ RCP2-SS8C (P29) Controller PCON-SE (P305) SCON-C (P325)

Alignment of works

Push motion

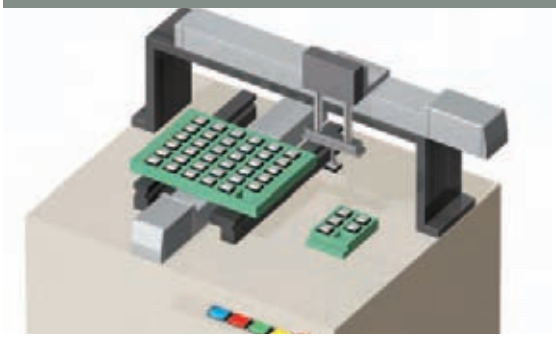


Works are pushed against the wall via push-motion operation and aligned.

Actuator RCP2-RA4C (P109) Controller PCON-CY (P305)

Pick & place machine

Pitch feed Positioning

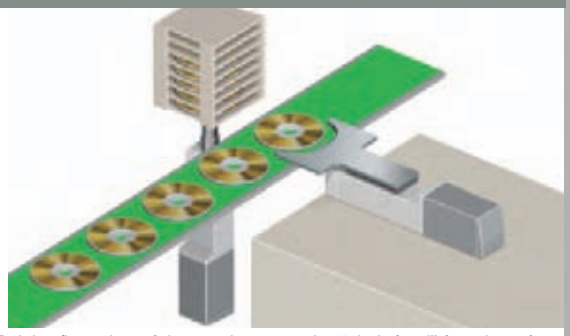


A low-cost pick & place unit whose X and Y-axes use ROBO Cylinders.

Actuator	RCA-SA5C (P51)	Controller	ACON-C (P315)

Disc stocker

Pitch feed Positioning

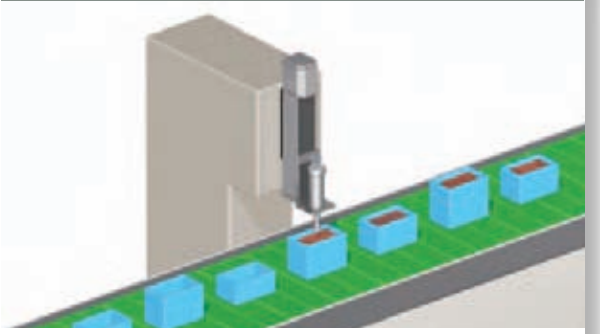


Raising/lowering of the stocker uses the “pitch feed” function of the ROBO Cylinder, while insertion of discs into the stocker uses the “acceleration/deceleration” function.

Actuator	RCP2-RA6C (P111) RCP2-SA6C (P23)	Controller	ACON-CY(P315)

Filling system

Positioning

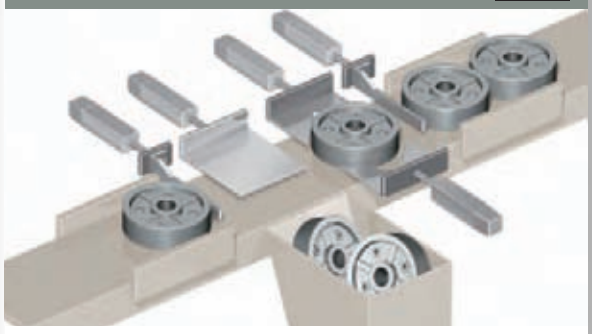


A ROBO Cylinder is used to fill containers of different heights. Multiple product types can be handled via multi-position control.

Actuator	ERC2-SA7C (P5)	Controller	Built in (P295)

Automotive screw inspection system

Positioning

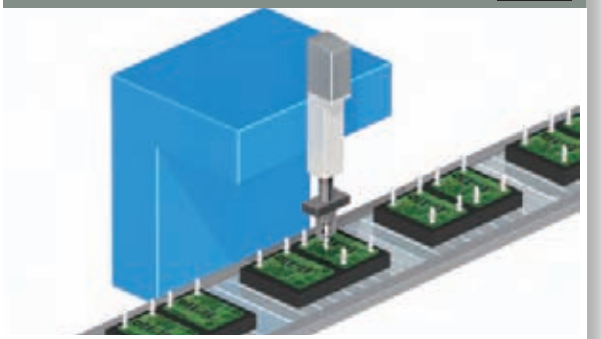


A screw inspection line that uses multiple ROBO Cylinder axes to position works, bring them to inspection positions, and isolate defects. All axes are controlled with a single 5-axis XSEL controller.

Actuator	RCS2-RA5C (P155)	Controller	XSEL-P (P365)

Spacer insertion system

Push motion

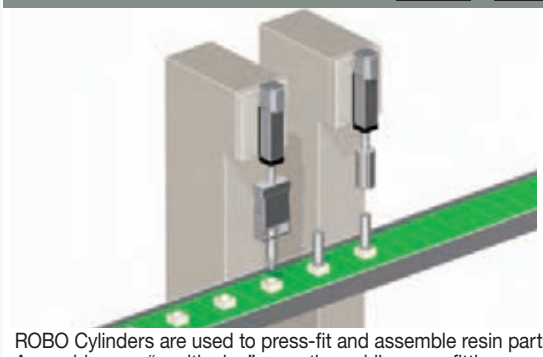


A ROBO Cylinder performs “push-motion” operation to insert spacers around printed circuit boards.

Actuator	RCP2-RA6C (P111) RCP2-GRS (P205)	Controller	PCON-C (P305)

Press-fitting system

Positioning Push motion



ROBO Cylinders are used to press-fit and assemble resin parts. Assembly uses “positioning” operation, while press-fitting uses “push-motion” operation.

Actuator	RCP2-RA4C (P109) RCP2-RA6C (P111)	Controller	PCON-C (P305)

Models in each ROBO Cylinder series are designated by the items shown below.
Refer to the explanation that follows for the content of each item. Since the selection range for each item (lead, stroke, etc.) is different for each type, check the details on the page explaining the applicable type.

Explanation of items

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Series

Name of each series.

② Type

The shape (slider, rod, etc.), material (aluminum, steel, etc.), size (width 52 mm, etc.) and motor connection method are indicated in accordance with the following table.

Type	Material/guide	Actuator width	Actuator-motor connection method
SS (Slider)	A (Aluminum)	2 (Width 25)	C (Coupling)
B (Belt)	S (Steel)	7A (Width 75, rod 30)	D (Built-in)
R (Rod)	GS (Single guide)		R (Reversing)
H (High-speed)	GD (Double guides)		U (Motor at bottom)
A (Arm)			
F (Flat)			

Example) SA5C
Shape: Slider
Material: Aluminum
Actuator width: 52 mm
Motor: Coupling specification

③ Encoder type

Whether the encoder installed in the actuator is of “absolute type” or “incremental type” is indicated.

A: Absolute type	**Since the current slider position will be retained after the power is turned off, home return is not required.**
I: Incremental type	**Slider position data will be lost once the power is turned off. Accordingly, home return must be performed every time the power is turned on.**

④ Motor type

Wattage of the motor installed in the actuator.
“PM” is specified for all models in the ERC2 series.
With the RCP2 series, the motor size (20P = 20 square motor) is indicated instead of the wattage.

⑤ Lead

Ball screw lead (distance traveled by the slider per one revolution of the ball screw).

⑥ Stroke

Actuator stroke (operating range) (in mm or degrees).

⑦ Applicable controller (I/O type)

Type of connectable controller. I/O (input/output signal) type is indicated for the ERC2 series, because ERC2 actuators have a built-in controller.

⑧ Cable length

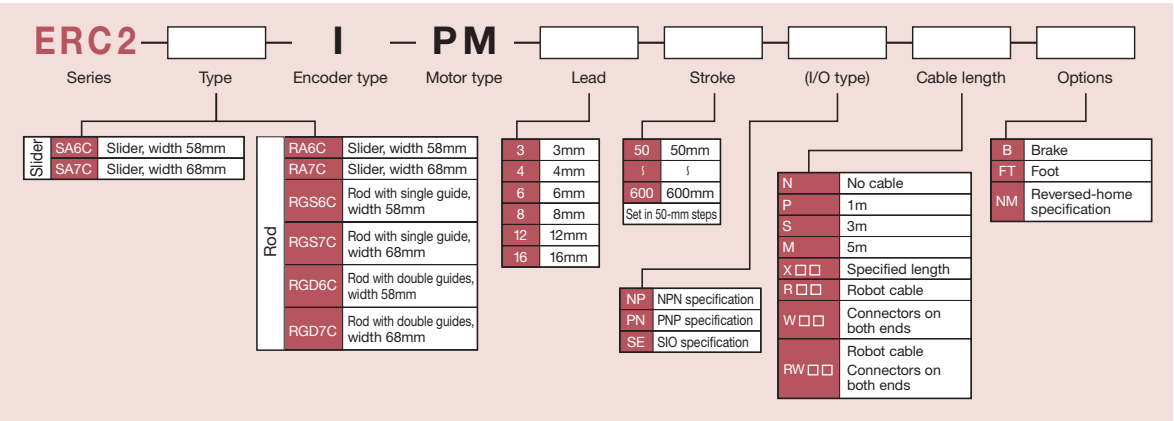
Length of the motor/encoder cables connecting the actuator and the controller

⑨ Options

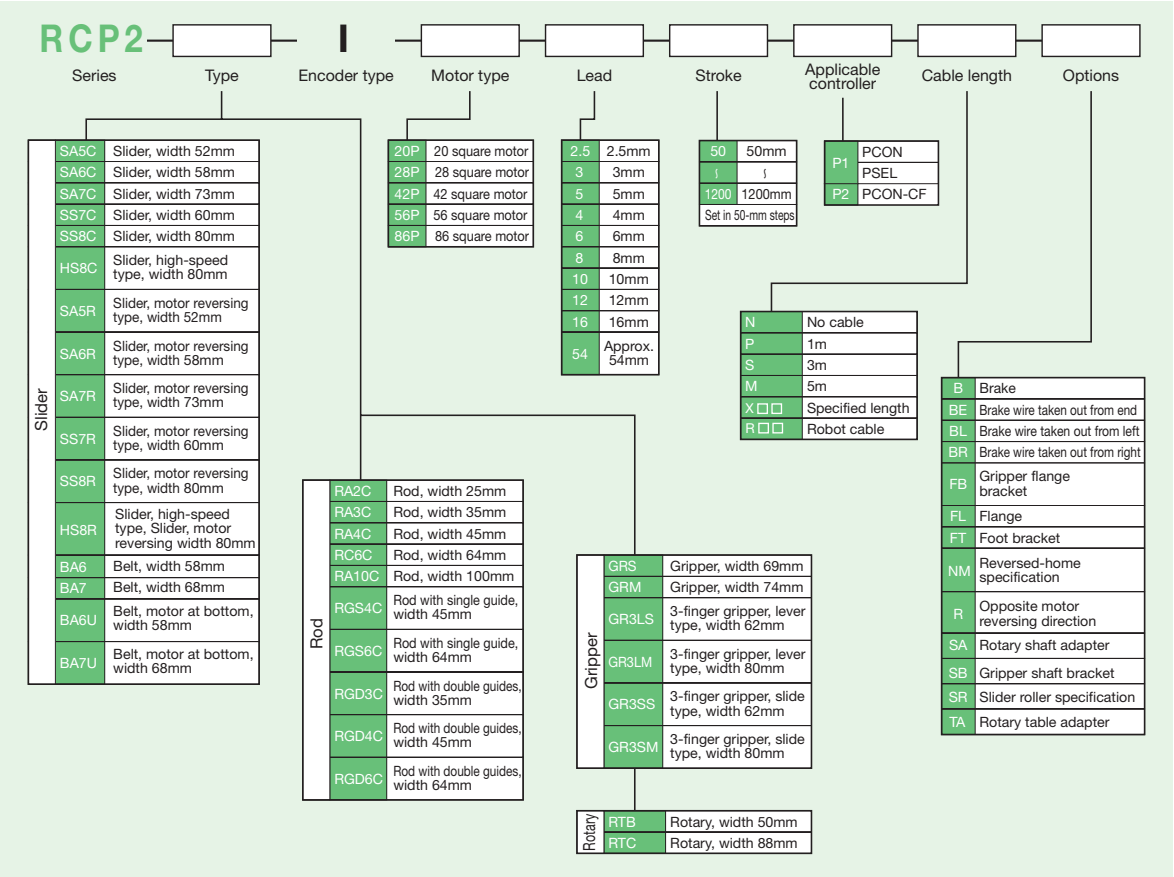
Options installed in the actuator. (Refer to pp. 381 to 389 of Technical Reference for details.)
*If multiple options are selected, specify them in alphabetical order. (Example: A3-B-FT)

ERC series / RCP2 series

ERC2 series

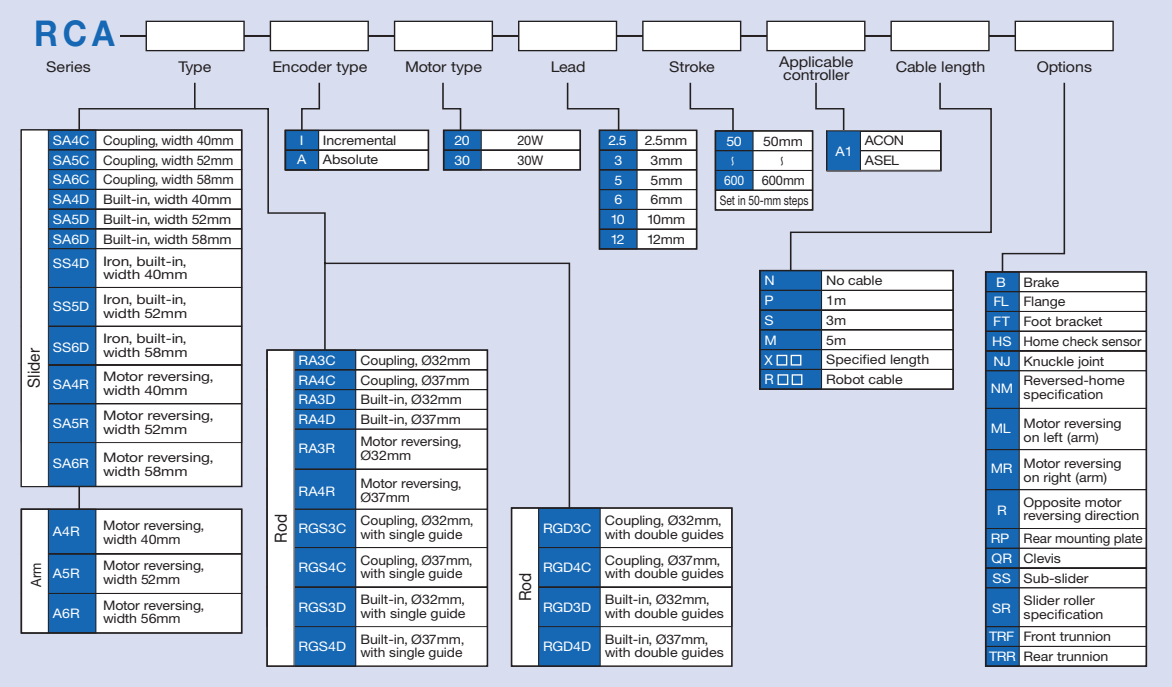


RCP2 series

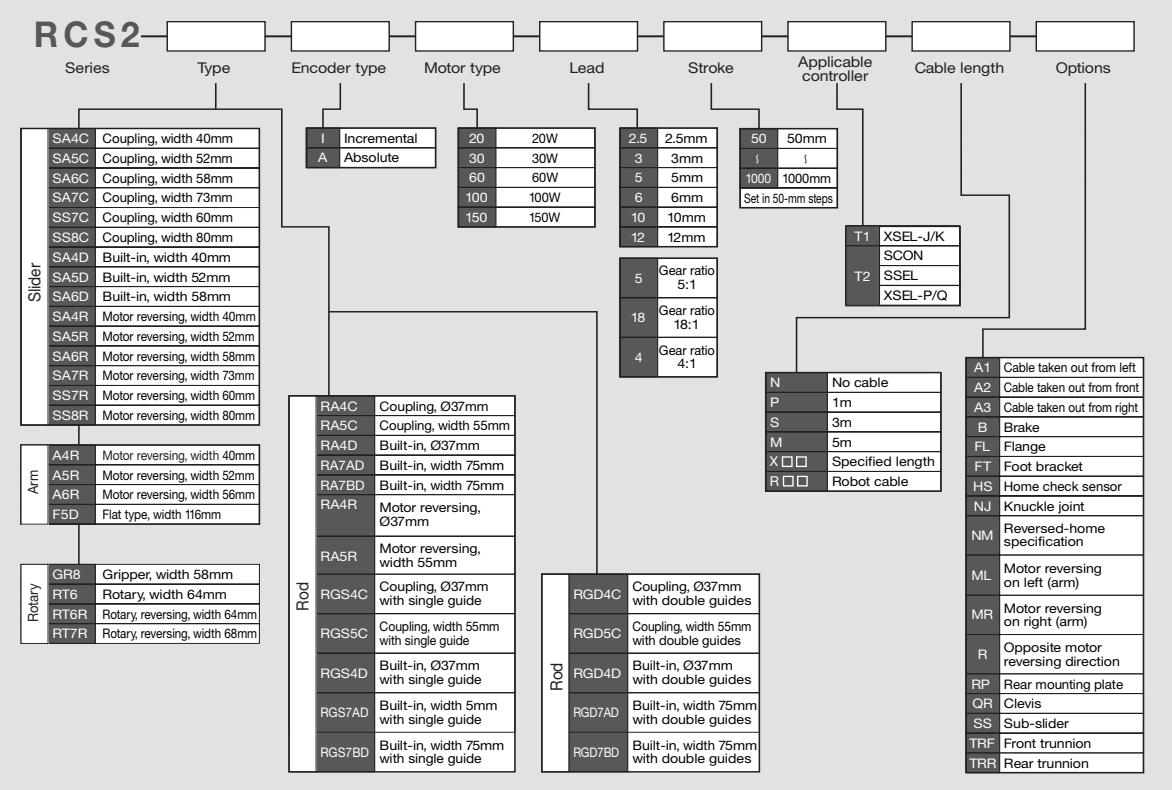


RCA series / RCS2 series

RCA series

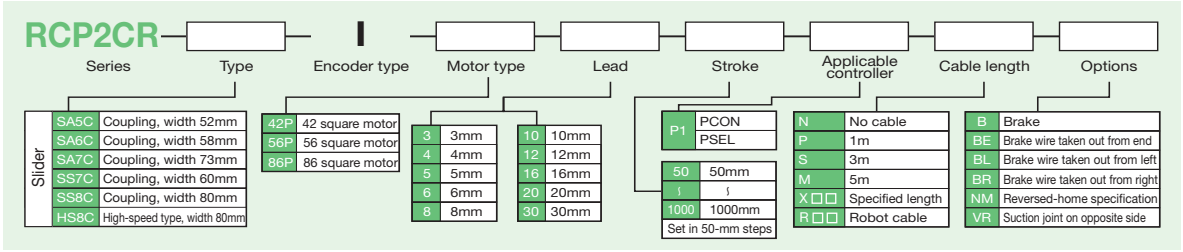


RCS2 series

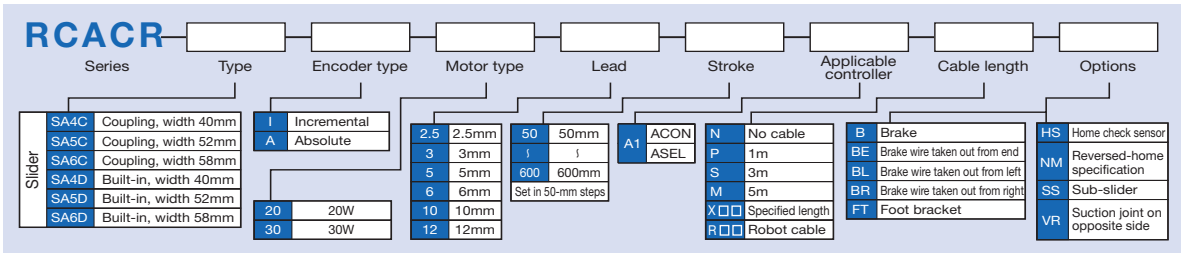


Cleanroom Series / Dustproof/Splash-Proof Series

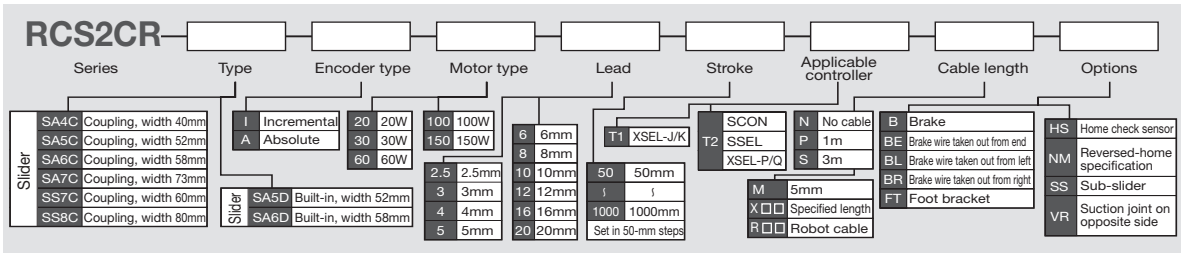
RCP2CR series



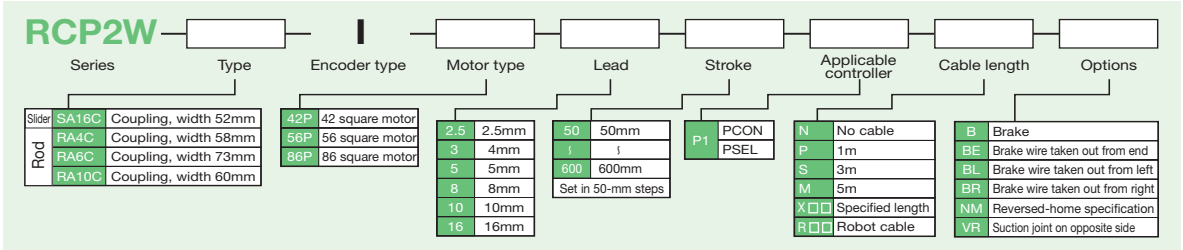
RCACR series



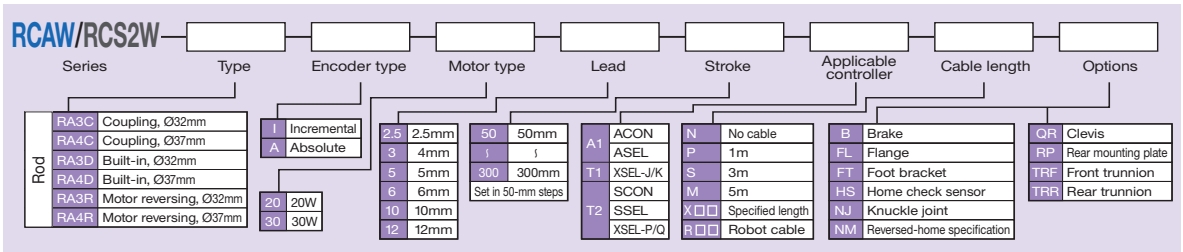
RCS2CR series



RCP2W series



RCAW series RCS2W series



Notes on ROBO Cylinder Series

Notes on Catalog Specifications <Common to All Models>

Speed

"Speed" indicates the specified speed at which to move the slider (or rod, arm or output shaft) of the actuator. The slider accelerates from a stationary state and after reaching the specified speed, it will continue to move at the specified speed until decelerating before the target position (specified position) to a stop.

<Items to Note>

① With the ERC2/RCP2 series, the maximum speed changes in accordance with the weight of the load installed onto the slider (or rod or output shaft).
When selecting an actuator, check "Correlation Diagrams of Speed and Load Capacity" on pp. 393 to 404 to choose an appropriate model.
With the RCA/RCS2 series, the maximum speed remains constant regardless of change in the weight of the load installed onto the slider (or rod or arm).
When selecting an actuator, choose an appropriate model from the specification list on p. 19.

② The time needed to reach the specified speed varies depending on the acceleration (deceleration).

③ If the travel distance is too short, the specified speed may not be achieved.

④ With axes having a long stroke, the maximum speed drops to prevent reaching a critical speed. (Check the "Stroke and Maximum Speed" table on each page.)

⑤ When calculating the travel time, also consider the acceleration, deceleration and settling time in addition to the duration of travel at the specified speed.

⑥ With the slider type, rod type, flat type and gripper type, speed can be set in 1-mm/sec steps in programs. With the rotary type, speed can be set in 1°/sec steps.

Acceleration/ Deceleration

"Acceleration" indicates the rate of change in speed occurring when the actuator reaches the specified speed from a stationary state.
"Deceleration" indicates the rate of change in speed occurring when the actuator stops from the specified speed.
Both are specified in "G" in programs (0.3 G = 2,940 mm/sec^2). * 2,940°/sec^2 for the rotary type

<Items to Note>

① The greater the acceleration (deceleration), the shorter the acceleration (deceleration) time becomes along with the travel time. However, increasing the acceleration will cause a quick acceleration (deceleration) condition normally associated with greater shock.

② The rated acceleration is 0.3 G (or 0.2 G if the lead is 2.5, 3 or 4 or the actuator is used vertically) (the load capacity is specified at the rated acceleration). (Take note that some RCS2-RA7 models have a lower rated acceleration.)

③ Operating the actuator at an acceleration (deceleration) exceeding the rated acceleration may significantly shorten the service life of the actuator or cause the actuator to break. Always keep the acceleration (deceleration) at or below the rating or use a single-axis robot of high-acceleration/deceleration type (high-acceleration/deceleration models in the ISA/ISPA series can support accelerations up to 1 G). Increasing the acceleration (deceleration) will also reduce the load capacity from the level achieved at the rated acceleration.

④ Acceleration can be set in 0.01-G steps in programs.

Duty

IAI's actuators should be used at a duty of 50% or below.
If used at a duty exceeding 50%, they may generate an overload error.

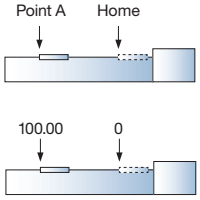
$$\text{Duty} = \frac{\text{Operating time}}{\text{Operation time + Stopped time}} \times 100$$

Positioning Repeatability

"Positioning repeatability" indicates the accuracy of repeated positioning to a pre-stored position. It is different from "absolute positioning accuracy."

Positioning repeatability
Accuracy (variation) of stopped positions achieved by repeated positioning operations to the same point

Absolute positioning accuracy
Difference between the coordinates of an arbitrary point specified by coordinates, and the actual position achieved by positioning operation to that point.



Home

The home is provided on the motor side on models of the standard specification, and on the counter-motor side on those of the reversed-home specification.

<Items to Note>

① Incremental-type actuators always require home return after the power is reconnected.

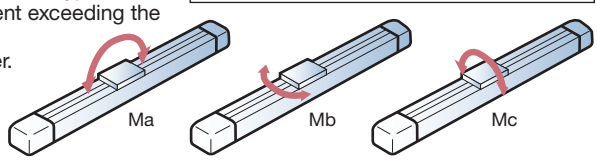
② During home return, the slider moves to the mechanical end and then reverses. Pay attention to prevent contact between the slider and surrounding parts.

③ The home is provided on the motor side on models of the standard specification (on the open side on gripper models or on the left side as viewed from above the output shaft on rotary models). The reversed-home option is available, but changing the home direction after the delivery will require the actuator to be returned to IAI for adjustment. Take note that the reversed-home specification is not available on certain rod models.

Load Moment (Ma, Mb, Mc)

"Load moment" is calculated by assuming a traveled distance of 5,000 km on SA4/SA5/SA6/SA7 types, or 10,000 km on SS7/SS8 types. If the actuator receives a moment exceeding the specified value, the service life of the guide will become shorter. (Refer to p. 379 of Technical Reference for the moment calculation method.)

Direction of load moment on slider type



Service Life

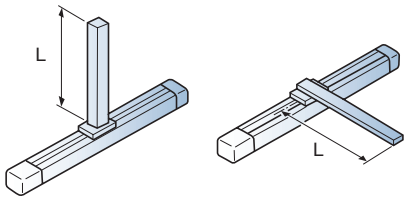
The service life of an actuator varies significantly depending on the operating conditions. With the slider type and rod type, the service life is estimated from the specified moment and the rated load of the ball screw, respectively. If the moment/rated load is within the rated value, the slider type will last for approx. 5,000 km or 10,000 km (refer to the above explanation of moment), while the rod type will last for approx. 5,000 km. If the load is smaller than the rating, the service life will become longer. If the load exceeds the rating, on the other hand, the service life will become shorter.

Brake

If your actuator is installed and operated vertically, specify a brake (optional) to prevent the slider (rod) from dropping when the power is cut off or an emergency stop is actuated. When installing an actuator with brake, take note that the slider (rod) will not move unless a controller is connected and the brake is released from the controller.

Overhang Load Length (L)

"Overhang load length" indicates a reference offset with which an actuator on which a work, bracket or other object is installed away from the actuator/slider center can move smoothly. If the allowable overhang load length specified for each model is exceeded, vibration or settling delay may occur. Always keep the overhang load length within the allowable value.

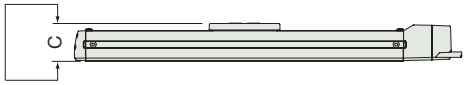


Actuator Accuracy

The accuracy levels of slider-type ROBO Cylinders are specified below. Since the side and bottom faces of the actuator base are used as reference surfaces for slider travel, use these surfaces when adjusting the parallelism of the actuator during installation.

Parallelism between actuator mounting surface (bottom face of base) and load mounting surface (top face)

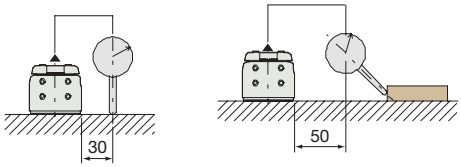
ERC2: Within ±0.1 mm/m RCP2/RCA/RCS2: Within ±0.05 mm/m

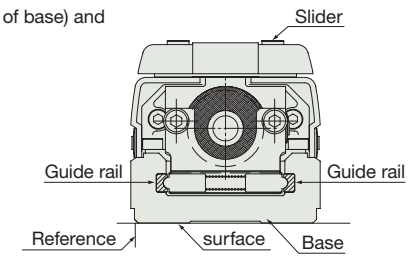


Parallelism with mounting frame

(If the actuator is affixed on a smooth surface *1)

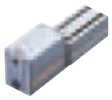
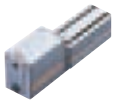
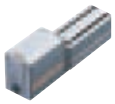
ERC2: Within ±0.1 mm/m RCP2/RCA/RCS2: Within ±0.05 mm/m





Condition: The above values are measured at 20°C. *1 Flatness: 0.05 mm max.

List of Controller Models by Function

Type	Features	Series	ERC2	PCON
		Applicable actuator	ERC2	RCP2
		Page	→P295	→P305
Positioner type	The actuator is moved by specifying a target position number. Suitable for controlling simple movements to many positions.	External view		
		Type code	PN/NP	C
		Maximum number of connectable axes	(—)	1 axis
		Maximum number of positioning points	16 points	512 points
		Input power supply	DC24V	DC24V
Solenoid valve type	The actuator is moved only by ON/OFF of signals, just like an air cylinder with solenoid valve. Ideal for positioning operation involving two to three points.	External view		
		Type code	PN/NP	CY
		Maximum number of connectable axes	(—)	1 axis
		Maximum number of positioning points	3 points	3 points
		Input power supply	DC24V	DC24V
Pulse-train input type	The user can control actuator operation (via pulses) without using position data. Use this type if you wish to control everything with pulses.	External view	(Not supported)	
		Type code	—	PL/PO
		Maximum number of connectable axes	—	1 axis
		Maximum number of positioning points	—	(—)
		Input power supply	—	DC24V
Serial communication type	Connectable to a field network, such as DeviceNet or CC-Link, using a gateway unit.	External view		
		Type code	SE	SE
		Maximum number of connectable axes	(—)	1 axis
		Maximum number of positioning points	64 points	64 points
		Input power supply	DC24V	DC24V
Program type	Programs input to the controller are used to perform various tasks such as operating the actuator and communicating with external equipment. Ideal for small systems where a PLC is not required.	External view	(Not supported)	(Not supported)
		Type code	—	—
		Maximum number of connectable axes	—	—
		Maximum number of positioning points	—	—
		Input power supply	—	—

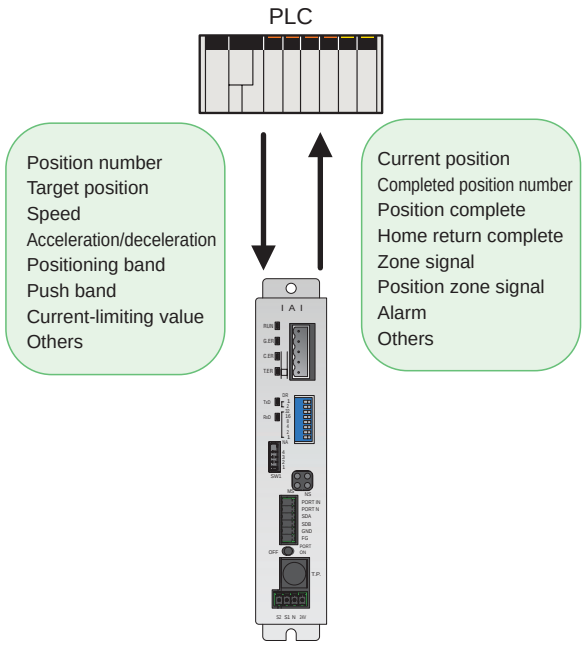
	ACON RCA →P315	SCON RCS2 →P325	PSEL RCP2 →P335	ASEL RCA →P345	SSEL RCS2 →P355	XSEL RCS2 →P365
						(Not supported)
	C	**C**	**C**	**C**	**C**	—
	1 axis	1 axis	2 axes	2 axes	2 axes	—
	512 points	512 points	1500 points	1500 points	1500 points	—
	DC24V	AC100/200V	DC24V	DC24V	AC100/200V	—
			(Not supported)	(Not supported)	(Not supported)	(Not supported)
	CY	**C**	—	—	—	—
	1 axis	1 axis	—	—	—	—
	3 points	7 points	—	—	—	—
	DC24V	AC100/200V	—	—	—	—
			(Not supported)	(Not supported)	(Not supported)	(Not supported)
	PL/PO	**C**	—	—	—	—
	1 axis	1 axis	—	—	—	—
	(—)	(—)	—	—	—	—
	DC24V	AC100/200V	—	—	—	—
		 * Gateway unit not required. Directly connectable to a network.	(Not supported)	(Not supported)	(Not supported)	 * Gateway unit not required. Directly connectable to a network.
	SE	**C**	—	—	—	**J/K/P/Q**
	1 axis	1 axis	—	—	—	6 axes
	64 points	512 points	—	—	—	4000 points
	DC24V	AC100/200V	—	—	—	AC100/200V
	(Not supported)	(Not supported)				
	—	—	**C**	**C**	**C**	**J/K/P/Q**
	—	—	2 axes	2 axes	2 axes	6 axes
	—	—	1500 points	1500 points	1500 points	4000 points
	—	—	DC24V	DC24V	AC100/200V	AC100/200V

Gateway Unit

The gateway unit is a conversion unit for connecting a ROBO Cylinder controller to a field network such as DeviceNet or CC-Link. Connect a gateway unit to your field network, and link the gateway unit and each controller via serial communication (RS485). Numerical data such as coordinates, speeds, accelerations and current values can be sent and received between the network master (PLC) and controller by means of I/O-level communication.

Features

1. Move the actuator by specifying positions from a PLC via network.
2. Perform push-motion operation via network.
3. Operate the actuator by directly sending the target position, speed, acceleration/deceleration and positioning band as numerical values from a PLC.
4. Read the current actuator position and various signals using a PLC.
5. Connectable to a maximum of 16 axes.



Functions

One of the following three operation modes can be selected.

(1) Position-number specification mode

Input target positions, speeds, accelerations/decelerations, positioning bands and other settings to the controller in advance as position data, and specify a desired position number via network, just like you do with PIO signals, to move the actuator. A maximum of 64 positioning points can be set. Various status signals can be read using a PLC.

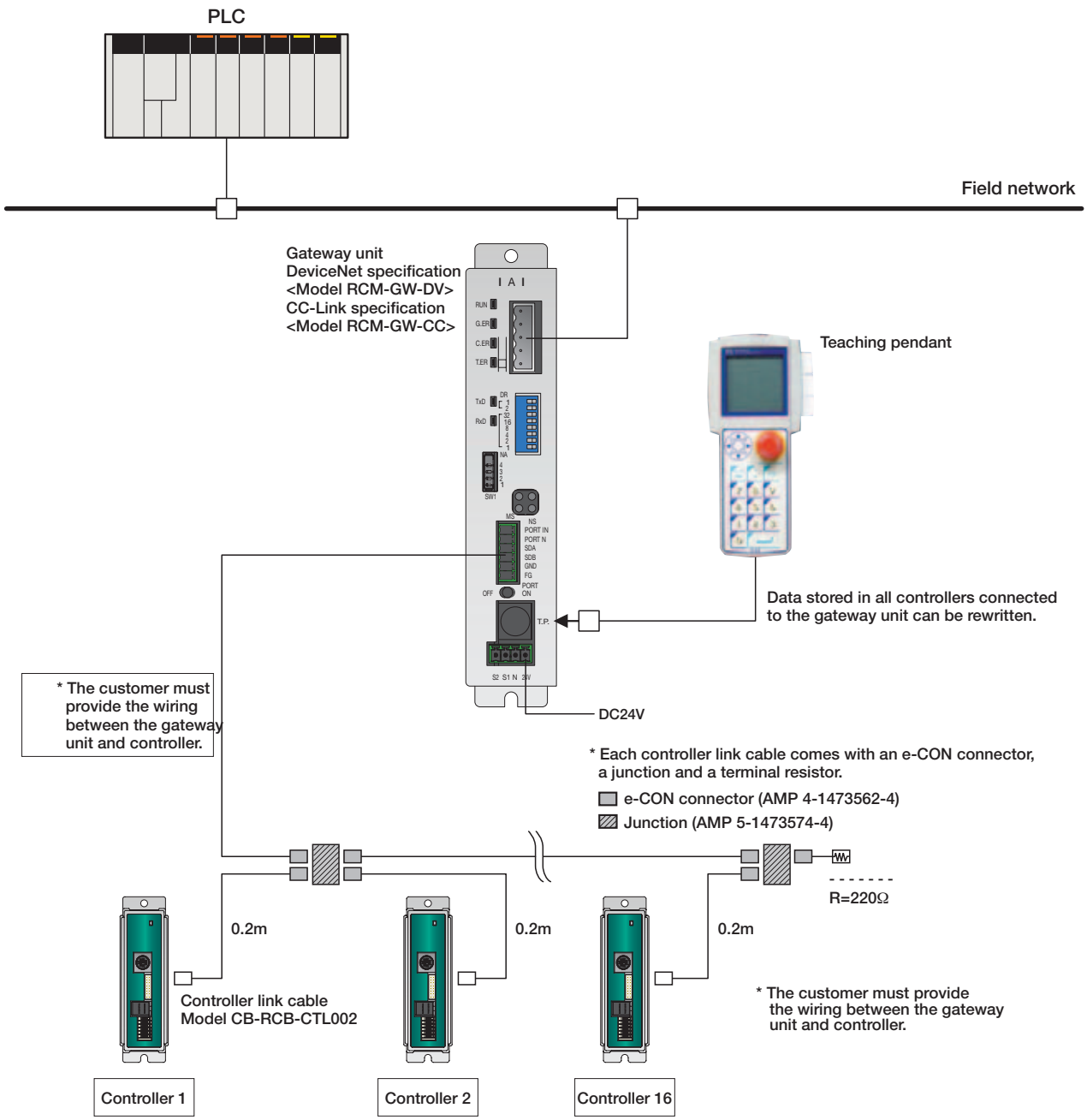
(2) Positioning-data specification mode

Specify a desired target position, speed, acceleration/deceleration, positioning band, push band, current-limiting value, etc., directly as numerical values to move the actuator or cause it to perform push-motion operation. Various status signals can be input/output and current position data read using a PLC.

(3) Simple direct/position-number specification mode

Call desired position data except for a target position (by specifying an applicable position number), and specify only a target position as a numerical value, to move the actuator. A maximum of 512 positioning points can be set.

System Configuration Diagram

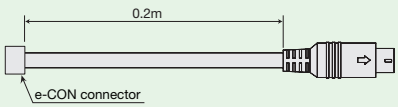


Connectable Controllers ERC2 / PCON / ACON / SCON (*1)
(*1) SCON will communicate at the I/O level when connected to the field network even if the gateway unit is not used.
It is necessary to use the gateway unit when communicating positional data.

■ Controller link cable

(Comes with e-CON connector, junction and terminal resistor)

Model CB-RCB-CTL002



Color	Signal	No.
Yellow	SGA	1
Orange	SGB	2
Blue	GND	3
		4

No.	Signal	Color
1	SGA	Yellow
2	SGB	Orange
3	+5V	
4	ENBL	
5	EMGA	
6	+24V	
7	GND	Blue
8	EMGB	

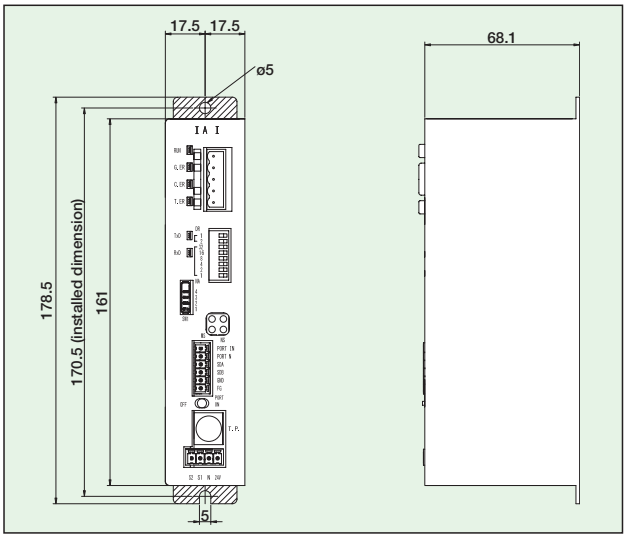
DeviceNet Gateway Unit

■ Model RCM-GW-DV

Operation Modes and Key Functions

Key functions	Position-number specification mode	Positioning-data specification mode	Simple direct/ position-number specification mode
Movement by position data specification	×	○	○
Direct speed & acceleration/deceleration specification	×	○	○
Push-motion operation	○	○	○
Current position read	×	○	○
Position number specification	○	×	○
Completed position number read	○	×	○
Various status signal read	○	○	○
Number of connectable axes	16	16	16
Maximum specifiable position data	Set as position data	999.99	999.99

External Dimensions



Specifications

Item		Specifications			
Power supply		DC24V ±10%			
Current consumption		300mA max.			
DeviceNet specifications	Communication standard	Interface module certified under DeviceNet 2.0			
		Group 2 only server			
		Insulated node operating on network power supply			
	Communication specifications	Master slave connection	Bit strobe		
			Polling		
			Cyclic		
	Baud rate	500k/250k/125kbps (switched using DIP switches)			
	Communication cable length (*1)	Baud rate	Maximum network length	Maximum branch length	Total branch length
		500kbps	100m	6m	39m
		250kbps	250m		78m
		125kbps	500m		156m
		Note) When a large-size DeviceNet cable is used.			
	Number of occupied nodes	1 node			

Item		Specifications
SIO communication specifications	Transmission path configuration	IAI's original multi-drop differential communication
	Communication method	Half-duplex
	Synchronization method	Asynchronous
	Transmission path type	EIA RS485, 2 wires
	Baud rate	230.4kbps
	Error control method	No parity bit, CRC (*2)
	Communication cable length	Total cable length 100m max.
	Number of connected units	Up to 16 axes
	Communication cable	2-pair twisted pair shield cable (Recommended: Taiyo Electric Wire & Cable HK-SB/20276xL 2PxAWG22)
Environmental conditions	Ambient operating temperature	0~40°C
	Ambient operating humidity	85% RH or below (non-condensing)
	Operating ambience	Free from corrosive dust, flammable gases, oil mist or powder dust
	Storage temperature	–10~65°C
	Storage humidity	90% RH or below (non-condensing)
	Vibration resistance	4.9m/s² (0.5G)
Protection class		IP20
Weight		480g or less

*1 If you wish to use T-junction communication, refer to the operation manual for your master unit or PLC used.
*2 CRC: Cyclic Redundancy Check. A data error detection method widely used in synchronous transmission.

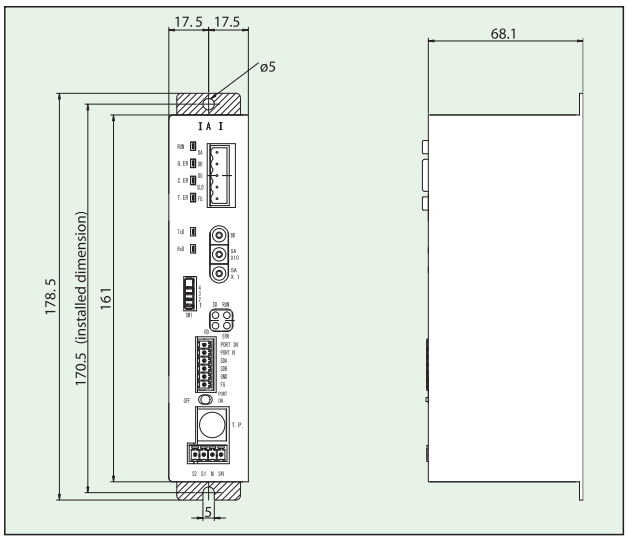
Profibus Gateway Unit

■ Model RCM-GW-PR

Operation Modes and Key Functions

Key functions	Position-number specification mode	Positioning-data specification mode	Simple direct/ position-number specification mode
Movement by position data specification	○	—	○
Direct speed & acceleration/deceleration specification	○	—	—
Push-motion operation	○	○	○
Current position read	○	—	○
Position number specification	—	○	○
Completed position number read	—	○	○
Number of connectable axes	16	16	16
Settable axis numbers	0-15	0-15	0-15
Maximum specifiable position data	9999.99	Set as position data	

External Dimensions



Specifications

Item			Specifications
Power supply			DC24V ±10%
Current consumption			300mA max.
DeviceNet specifications	Communication standard		Profibus DP
			Group 2 only server
			Insulated node operating on network power supply
	Communication specifications	Master slave connection	Bit strobe
			Polling
			Cyclic
	Baud rate		9.6kbps~12Mbps
	Communication cable length (*1)	Baud rate	Maximum network length
		9.6kbps	1500m
		500kbps	400m
		1.5Mbps	200m
		3Mbps	200m
		12Mbps	100m

Item		Specifications
SIO communication specifications	Transmission path configuration	IAI's original multi-drop differential communication
	Communication method	Half-duplex
	Synchronization method	Asynchronous
	Transmission path type	EIA RS485, 2 wires
	Baud rate	230.4kbps
	Error control method	No parity bit, CRC (*2)
	Communication cable length	Total cable length 100m max.
	Number of connected units	Up to 16 axes
	Communication cable	2-pair twisted pair shield cable (Recommended: Taiyo Electric Wire & Cable HK-SB/20276xL 2PxAWG22)
Environmental conditions	Ambient operating temperature	0~40°C
	Ambient operating humidity	85% RH or below (non-condensing)
	Operating ambience	Free from corrosive dust, flammable gases, oil mist or powder dust
	Storage temperature	–10~65°C
	Storage humidity	90% RH or below (non-condensing)
	Vibration resistance	4.9m/s² (0.5G)
Protection class		IP20
Weight		480g or less

*1 If you wish to use T-junction communication, refer to the operation manual for your master unit or PLC used.
*2 CRC: Cyclic Redundancy Check. A data err or detection method widely used in synchronous transmission.

ACON-/PCON-ABU Controller Module

ABU

Absolute unit
Module for ACON and PCON controller

Features

1 Easy Change from Incremental to Absolute Encoder Type

Only connecting to ACON/PCON, RCA/RCP2 actuators incremental version will function as absolute version (with back-up battery). ACON/PCON-ABU set includes ACON/PCON-ABU unit, back-up battery (AB-7) and cable connected to controller (CB-AC/PC-PJ002).

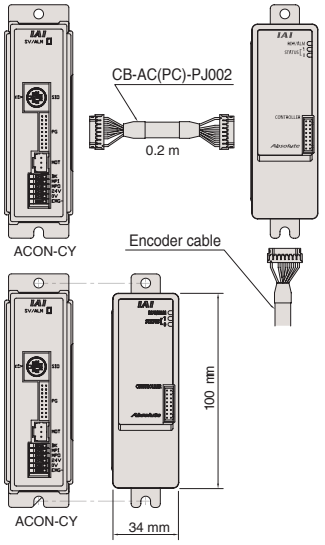
* Caution: An error will be indicated when sliders or rod of the actuators move faster than specified speed. Please refer to the specified speed (allowable rotation per minute) in the specification table.

2 No Home Return necessary

By connecting with ACON/PCON-C, -CG, -CY or -SE type the current position of system will be held even if power is disconnected, the actuator can operate immediately without homing. Encoder data can be saved as long as 20 days.

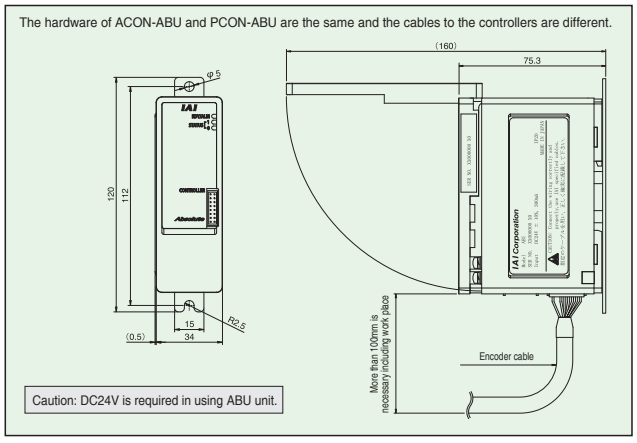
3 Small Size like as Controller Types SE/CY

It is as compact as CY and SE controller types (width 34 mm, height 100 mm, length 75.3 mm), so space and cost can be saved.



External Dimensions

The hardware of ACON-ABU and PCON-ABU are the same and the cables to the controllers are different.



Specification Table

Item	ACON-ABU		PCON-ABU	
Controller type to be connected	ACON-C/CG/CY/SE		PCON-C/CG/CY/SE	
	In ordering controllers to be connected to ABU unit, please add "-ABU" at the end of controller type name, e.g. "ACON-C-20I-NP-2-0-ABU"			
Connected actuators	RCA series		RCP2 series *1	
Cables connected to controller	CB-AC-PJ002 (0.2 m)		CB-PC-PJ002 (0.2 m)	
Backup battery (included in a set)	AB-7			
Power voltage	DC24V ±10%			
Power capacity	max. 300mA			
Ambient Temperature	0~40°C (at best 20°C)			
Ambient Humidity	95% RH (non-condensing)			
Environment	No corrosive gas, no dust			
Weight	330 g			
Allowable encoder rotation per minute *2	800 rpm	400 rpm	200 rpm	100 rpm
Position data retainable hours *2	120h	240h	360h	480h

*1 ABU unit does not function for types RA2C, RA10C, GRS, GRM, GR3LS,GR3LM, GR3SS, GR3SM, RTBL, RTCL and RCP2-W-SA16.
*2 Position data retainable hours varies by allowable rotation per minute.

RCM-PM

Touch panel to input, change and monitor data of PCON/ACON/SCON/ERC2/ROBONET

Features

1 Easy Input, Change and Monitor Data

Position data and parameter (user parameter) can be changed and position, speed and IO status can be monitored. Dialogue window help users using for the first time.

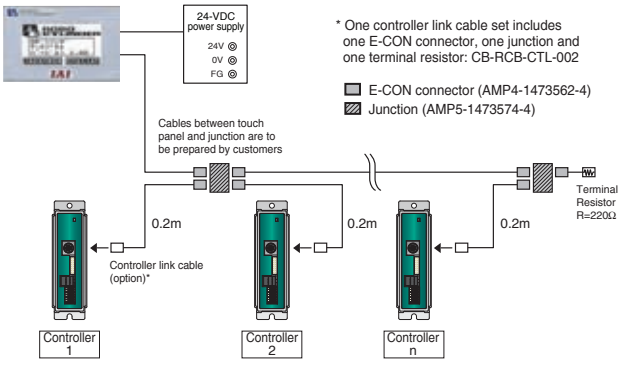
2 Three-color Back Light indicates the Status

In the normal status the back light is white and it turn to pink with error and to red with emergency.

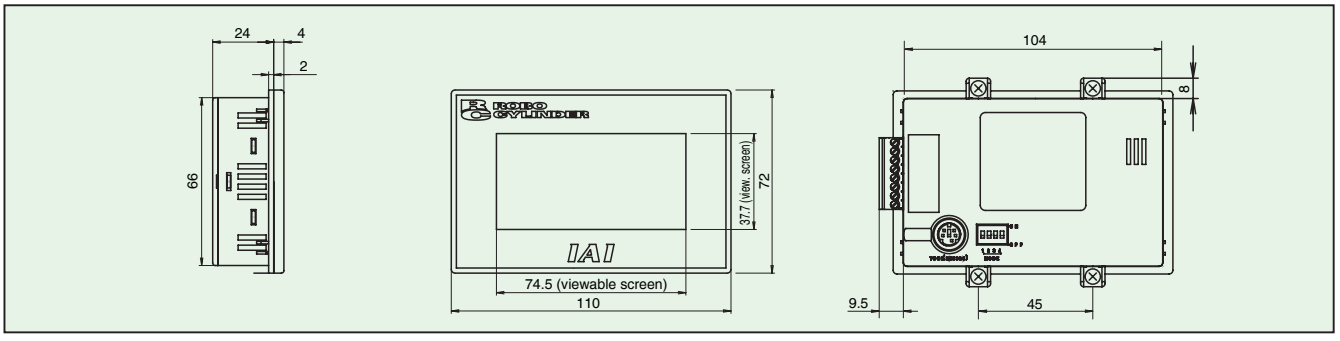
3 Connecting multiple Controllers

Up to 16 controllers of PCON, ACON, SCON, ERC2 or ROBONET can be connected.

The diagram shows only serial communication connection.
Please refer to the manual for power supply and emergency.



External Dimensions



Specification Table

	Item	RCM-PM-01
Bascic specifications	Power supply voltage	DC 24V
	Functional voltage	DC 21.6~26.4V
	Power capacity	less than 2W (less than 80mA)
	Ambient temperature / humidity	0~50°C / 20~85% RH (non-condensing)
	Environment	IP65 (initial stage) only from front side
	Weight	ca. 160g
Communication	Communication standard	RS485
	Communication condition	Transmit speed 115.2 kbps, Data bit 8 bit, no parity, Stop bit 1 bit
	Protocol	Modbus/RTU
	Controller to be connected	PCON/ACON/SCON/ERC2/ROBONET (max. 16 controllers can be connected)
Function	Monitor	Current position, speed, acceleration, error code, error message, PIO status bit, speed wave, current wave, current value
	Error list	max. 16 error lists (code, detail code, address, time, message)
	Position table edit	Position, speed, acceleration, band-width, push-mode, individual zone, incremental position, jog/inching, direct teaching, error message by non allowable data
	Move function	Position, direct movement, jog, screen jump function at error
	Parameter edit	Zone signal, software limit, PIO pattern selection, jog speed, inching distance, speed at push mode, safety speed
	Back light	White (standard), pink (error), red (emergency)
	View screen adjustment	Contrast and brightness adjustment
	Gateway monitor function	Current position (max. 4 axes), current speed (max. 4 axes), current level (max. 4 axes), total current level, error monitor for all axes, Gateway system status

Notes on Switching from Air Cylinders

Air Cylinder and ROBO Cylinder

Air cylinders are used to push or hold works by means of supply and release of compressed air to/from the cylinder. Air cylinders are used widely in all industries, mainly for transfer equipment, assembly systems, various automation systems, etc.

Air cylinders generally have diameters of 4 mm to 320 mm, and their lengths (strokes) can also be set in fine steps. According to one source, there are several tens to hundreds of thousands of different air cylinder products, which makes it easy to select optimal models for a variety of applications. On the other hand, the complexity of product lines requires customers to examine multiple products having the same specifications, which prevents them from easily finding the model that best suits the exact specifications.

Against this background, in many cases air cylinder products are selected based on experience and familiarity.

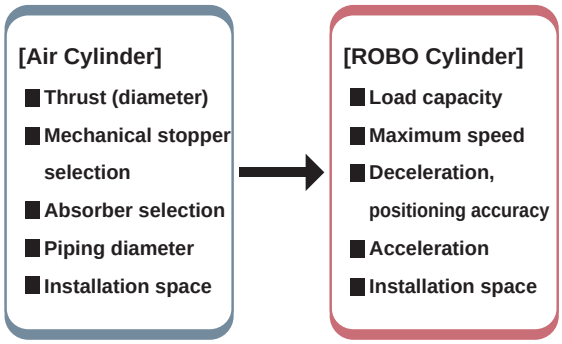
ROBO Cylinders are motorized cylinders offering various functions not achievable with air cylinders, with easy-to-use operating methods. Also, the ROBO Cylinder family lets you easily select the model that best suits your specific application. However, ROBO Cylinders are different from air cylinders in terms of control and configuration.

This section explains the key points to note when switching from air cylinders to ROBO Cylinders.

Overview of Switching

The following explains the basic items that should be checked when selecting a ROBO Cylinder and an air cylinder, respectively.

Since both are direct-acting actuators, the items that must be considered regarding operation are similar. However, the different configuration and control mentioned above result in different designations and adjustment/check items between the two. A comparison is illustrated to the right.



As shown above, the two have different mechanical viewpoints to be considered.

Installation Space

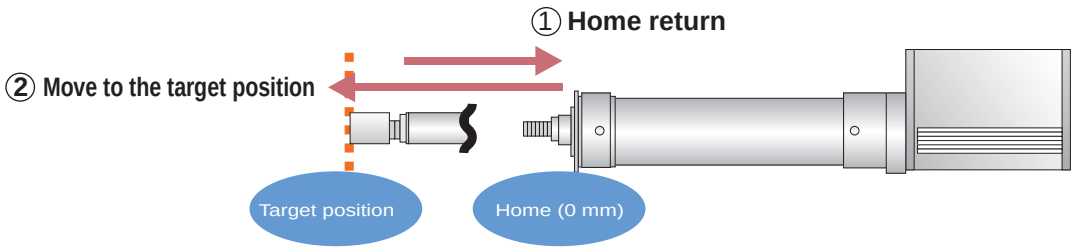
ROBO Cylinders are driven by a motor. Since they are bigger than air cylinders based on simple comparison, installation space requires careful attention when choosing a ROBO Cylinder.

Home Return

Unlike air cylinders, ROBO Cylinders are operated on “coordinates.” Specifically, their travel distances are always specified with respect to the home (zero point). Accordingly, ROBO Cylinders must perform home return at the beginning of each operation.

In particular, exercise caution for incremental types, because these actuators are pushed against the stroke end in the initial operation performed after the power is turned on.

■Incremental specification: Home return must be performed after the power is turned on.
■Absolute specification: Absolute reset must be performed during the initialization.



Critical Rotating Speed

The ball screw inevitably deflects due to bending force and dead weight.

To operate ROBO Cylinders at high speed, their ball screw must be rotated faster. As the rotating speed increases, however, the screw deflection will also increase until the rotating axis is eventually damaged. Rotating speeds at which the rotating axis may suffer damage are called “critical speeds,” “whirling speeds” or “whipping speeds.”

Ball-screw ROBO Cylinders perform linear motion as the ball screw is turned with its end supported by a bearing. Although the maximum speed is specified for each ROBO Cylinder in accordance with the actuator type, some models with certain strokes have their maximum speed set in consideration of the aforementioned critical rotating speeds. Pay careful attention to this point when selecting your ROBO Cylinder.

General Utility (Types, Modes and Parameters)

ROBO Cylinders offer the “air-cylinder specification (or air-cylinder mode)” that allows the ROBO Cylinder to be used just like an air cylinder. If these models are used, you can operate the actuator simply by turning external signals ON/OFF, just like you do with air cylinders. Although selecting the air-cylinder specification or mode is enough for simple conversion from an air-cylinder application, we also offer various other specifications for, and make certain parameters accessible by, customers who want more benefits out of their ROBO Cylinders.

We can propose functions that meet the operating conditions and requirements of your specific system. Feel free to contact us at 1-800-736-1712 or 1-800-944-0333.

Maintenance

The key maintenance points of air cylinders and ROBO Cylinders are compared.

Air cylinders require periodic maintenance in accordance with the frequency and condition of use. Although air cylinders offer a certain level of flexibility in that minor damage or malfunction can be ignored by means of increasing the source air pressure and moving the cylinder with a greater force, ignoring maintenance will inevitably shorten the service life of the air cylinder.

On the other hand, ROBO Cylinders have a more complex structure and use a greater number of parts and are therefore seen as requiring cumbersome maintenance work. This is wrong. ROBO Cylinders are clearly easier to use and offer longer life than air cylinders. Of course, ROBO Cylinders also require lubrication of sliding parts just as air cylinders do. However, lubrication units (AQ seals) installed on the ball screw and guide ensure a long maintenance-free period (5,000 km of traveled distance, or three years). After the traveled distance has reached 5,000 km or three years have elapsed, the above parts should be greased once every six months to a year in accordance with the operation manual, in order to extend the life of the product significantly.

Controllers combined with absolute-type actuators come with a battery to retain the current position. This battery is a consumable part and must be replaced periodically (the specific battery replacement interval varies depending on the product).

[Main Maintenance]

[Air Cylinder]
- Greasing of sliding parts
- Gasket replacement
- Draining
- Absorber replacement

[ROBO Cylinder]
- Greasing of ball screw and guide (after AQ seals have been consumed)
- Battery replacement (absolute specification only)

Operation

Air cylinders are generally operated with the use of a direction control valve to determine the direction of reciprocating motion, as well as a flow control valve (speed controller) to determine the speed. Immediately after their system is started up, many users operate the air cylinder at low speed by restricting the flow control valve. Once safety is confirmed, the valve is opened wider to increase the speed to the required level.

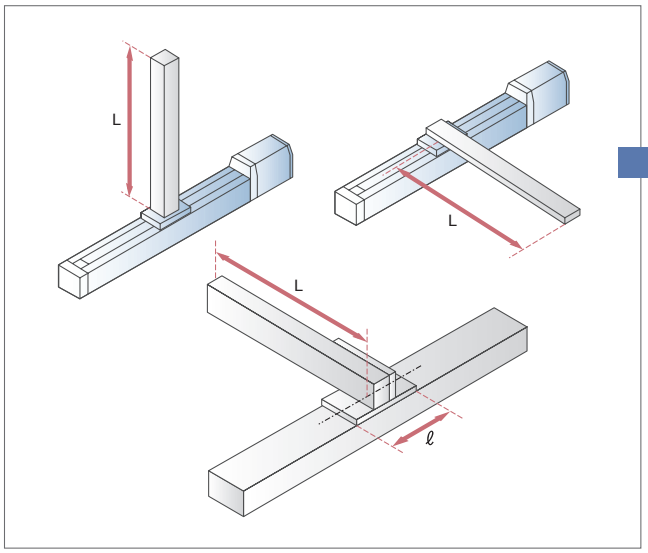
The same procedure is also recommended for ROBO Cylinders after the system is started up. With ROBO Cylinders, “speed setting” replaces the flow control valve. Operate your ROBO Cylinder at speeds where safety is ensured, and then change to the desired speed after safety is confirmed.

Notes on Actuator Selection

When selecting an actuator, you must consider the overhang load length and moment in addition to the stroke, speed and load capacity.

Overhang Load Length

An overhang load length is specified for a slider-type actuator to indicate the length of overhang (offset) from the actuator.



The allowable overhang load length is determined by the slider length.

Any overhang exceeding the allowable overhang load length may cause vibration or increase the settling time.

L/ℓ = 5 or less

* Approx. 3 to 4 for measuring systems equipped with a camera.

●Reference

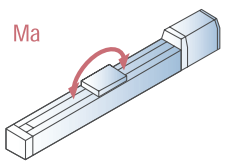
L/ℓ = 1.2 Machine tools
L/ℓ = 3 Measuring machines
L/ℓ = 5 Robots

Allowable Load Moment

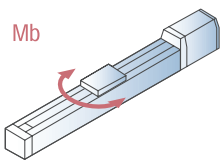
The allowable load moment refers to the maximum offset load that can be applied to the slider, and is calculated from the traveling life of the guide. Forces applied to the guide are divided into three directions of Ma (pitching), Mb (yawing) and Mc (rolling), and an allowable value is set for each of these forces on each actuator.

●3 directions of forces applied to the guide (Ma, Mb, Mc)

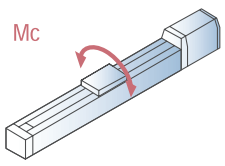
Pitching



Yawing



Rolling



Rated moment (value indicated in the catalog) = Force is calculated from the service life of the guide.

The traveling life decreases in proportion to the third power of moment.

The allowable static moment (applicable when the actuator is stationary) should be no more than three times the catalog value.

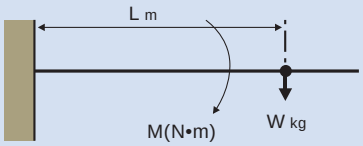
The allowable load moment is calculated from the service life of the guide.

Applying a moment exceeding the allowable value will reduce the service life of the actuator.

The load moment is proportional to the distance from the center of rotation, and calculated by the formula below.

$$M\,(N\cdot m) = W\,(kg) \times L\,(m) \times 9.8$$

W (kg) indicates the weight at the center of gravity, while L (m) indicates the distance to the center of gravity.



About Programs

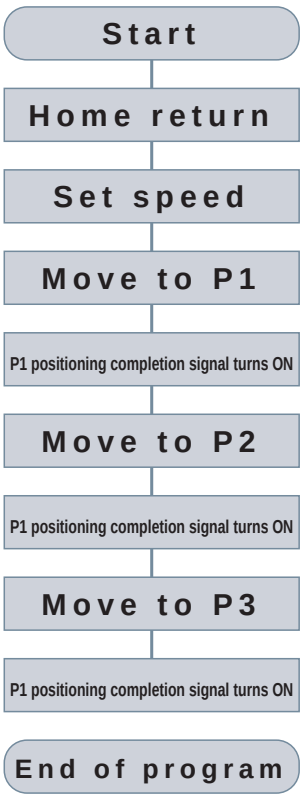
PSEL, ASEL, SSEL and XSEL controllers are operated with programs created in IAI's original Super SEL language. The Super SEL language lets you write programs only by arranging simple commands in sequence on a spreadsheet. This means that anyone who has never programmed before can create actuator programs with ease.

A sample program for basic operation is shown below.
We also have other sample programs covering commonly used patterns. If you are interested, feel free to contact IAI.

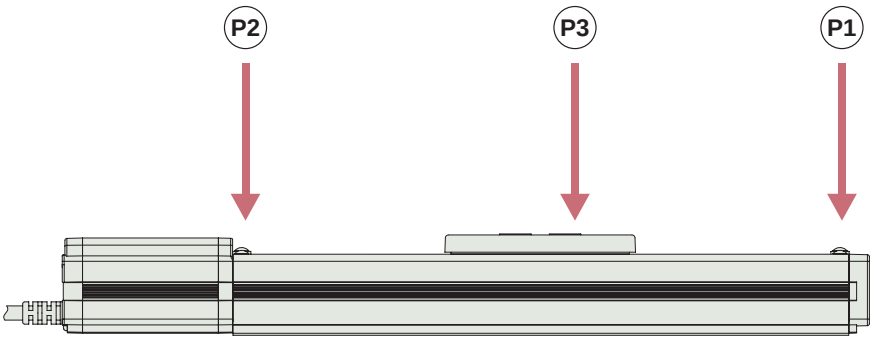
Description

Perform home return, and then operate the actuator to positions 1 through 3 at a speed of 100 mm/sec.
Only one axis is used.

Flowchart



- Home-return operation must be performed and a speed must be set before the actuator can be operated.
- The actuator moves to the position data coordinates specified by movement commands.



Application Program

STEP	A/O	N	OP-CODE	OPRND1	OPRND2	POST	Comment
1			HOME	1			Home return of axis
2			VEL	100			Set speed 100mm/sec.
3			MOVP	1			Move to P1
4			BTON	311			P1 movement complete signal ON
5			MOVP	2			Move to P2
6			BTON	312			P2 movement complete signal ON
7			MOVP	3			Move to P3
8			BTON	313			P3 movement complete signal ON
9			EXIT				End of program
10							

Position Data

No	X
1	200
2	0
3	100
4	
5	
6	
7	
8	
9	
10	

Explanation of Actuator Options

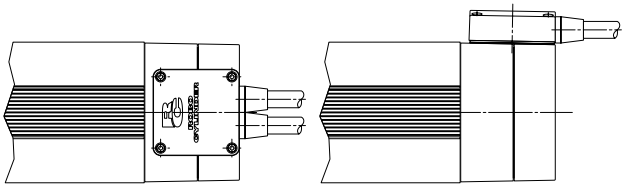
Change of Cable outlet Direction

■ Option Code A1, A2, A3

Applicable model	RCS2-RA5C / RA5R / RA7AD / RA7BD
Description	Specify this option if you wish to change the direction from which to take out the actuator cable.

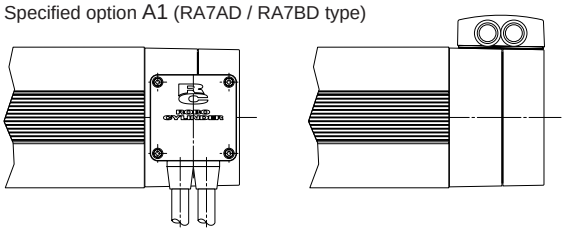
Taken out from motor side (standard)

■ Option not specified (blank)



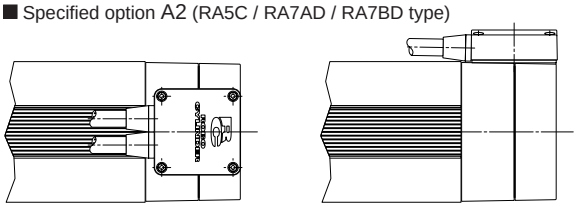
Taken out from left

■ Specified option A1 (RA7AD / RA7BD type)



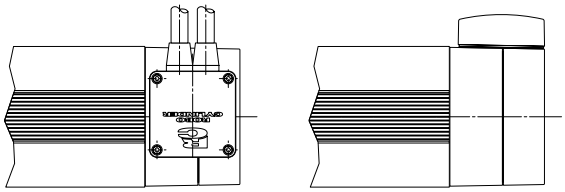
Taken out from rod side

■ Specified option A2 (RA5C / RA7AD / RA7BD type)



Taken out from right

■ Specified option A3 (RA7AD / RA7BD type)



Brake

■ Option Code B, BE, BL, BR

Applicable model	All slider types (* Excluding RCP2-BA6/BA7) All rod types (* Excluding RCP2-RA2C and RCA built-in types)
Description	A retention mechanism used on an actuator positioned vertically to prevent the slider from dropping and damaging the installed load, etc., when the power or servo is turned off.

Actuator Cover

■ Option Code CO

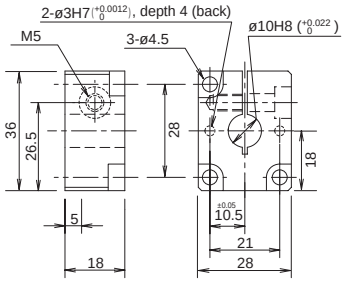
Applicable model	RCP2W-SA16
Description	A cover to protect the guide or slider of a waterproof slider actuator.

Flange Bracket

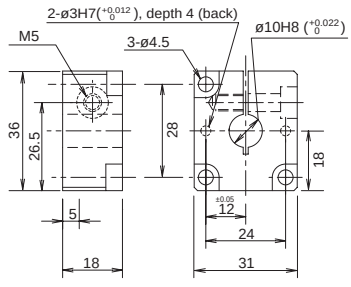
■ Option Code FB

Applicable model	RCP2-GRS / GRM / GR3LS / GR3LM / GR3SS / GR3SM
Description	A bracket for affixing the gripper body.

GRS type Unit model RCP2-FB-GRS



GRM type Unit model RCP2-FB-GRM

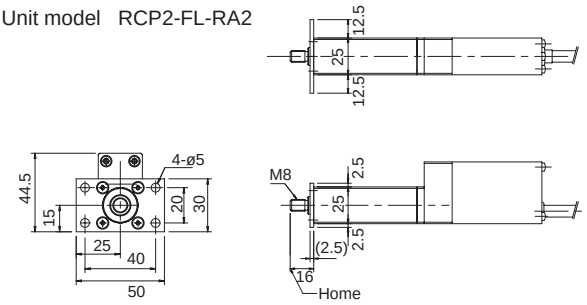


Flange

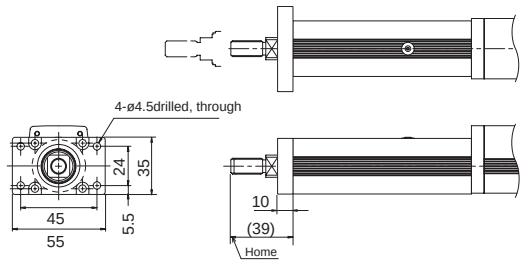
■ Option Code FL

Applicable model	All rod types
Description	A bracket for affixing the actuator using bolts from the actuator side.

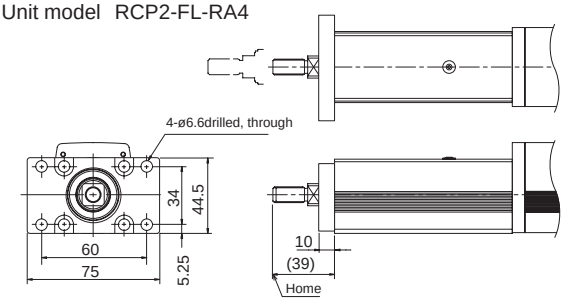
RCP2-RA2C
Unit model RCP2-FL-RA2



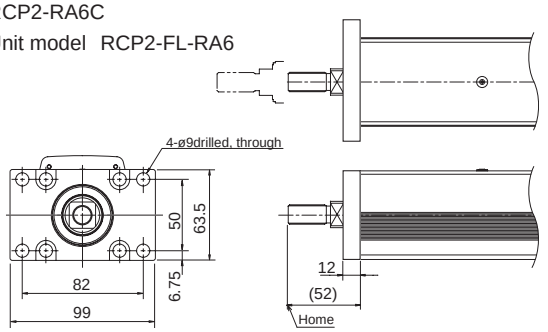
RCP2-RA3C
Unit model RCP2-FL-RA3



RCP2-RA4C
Unit model RCP2-FL-RA4

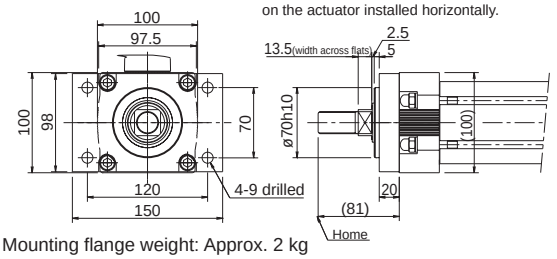


RCP2-RA6C
Unit model RCP2-FL-RA6



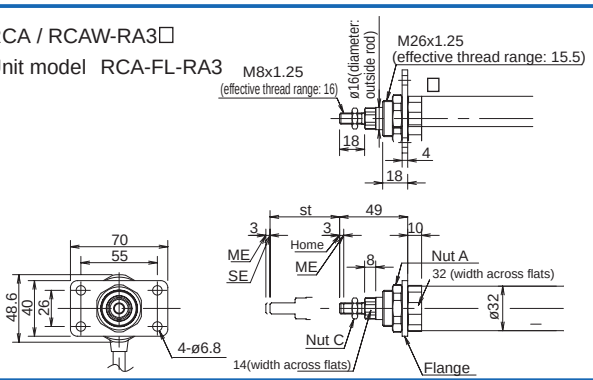
RCP2 / RCP2W-RA10C
Unit model RCP2-FL-RA10

Be careful not to apply excessive external force on the actuator installed horizontally.

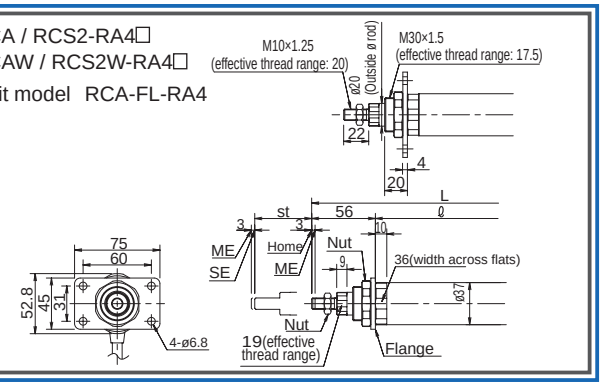


Mounting flange weight: Approx. 2 kg

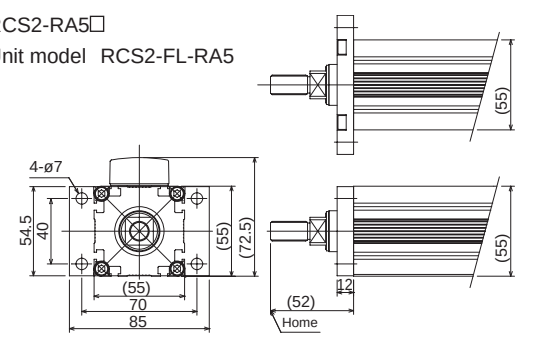
RCA / RCAW-RA3□
Unit model RCA-FL-RA3



RCA / RCS2-RA4□
RCAW / RCS2W-RA4□
Unit model RCA-FL-RA4

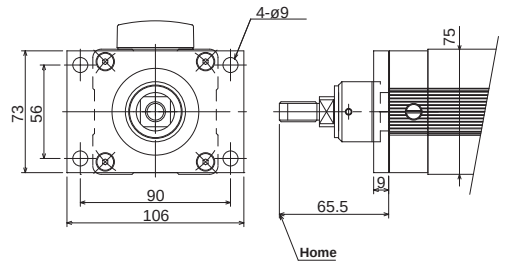


RCS2-RA5□
Unit model RCS2-FL-RA5



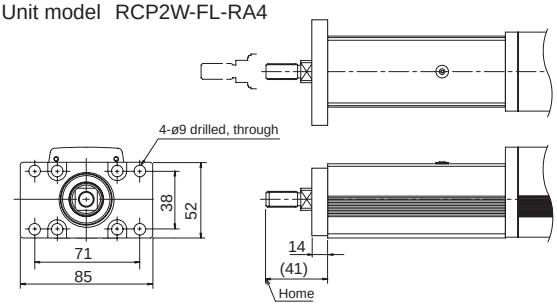
RCS2-RA7□D

Unit model RCS2-FL-RA7



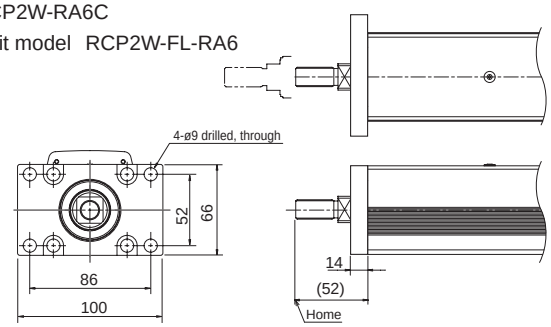
RCP2W-RA4C

Unit model RCP2W-FL-RA4



RCP2W-RA6C

Unit model RCP2W-FL-RA6



Foot

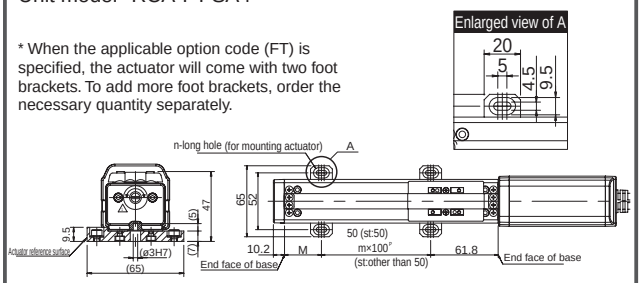
■ Option Code FT

Applicable model	Slider type RCA (RCACR) SA4C / SA5C / SA6C, RCS2 (RCS2CR) SA4C / SA5C / SA6C
	All rod types
Description	A bracket for affixing the actuator using bolts from the top side.
	With a slider type subject to large moment load, install foot brackets at all mounting holes in the actuator.
	If the number of foot brackets is not sufficient, the actuator may deflect, resulting in a shorter service life.

RCA / RCACR-SA4C RCS2 / RCS2CR-SA4C

Unit model RCA-FT-SA4

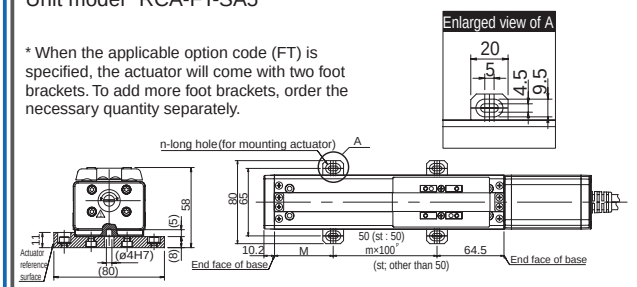
* When the applicable option code (FT) is specified, the actuator will come with two foot brackets. To add more foot brackets, order the necessary quantity separately.



RCA / RCACR-SA5C RCS2 / RCS2CR-SA5C

Unit model RCA-FT-SA5

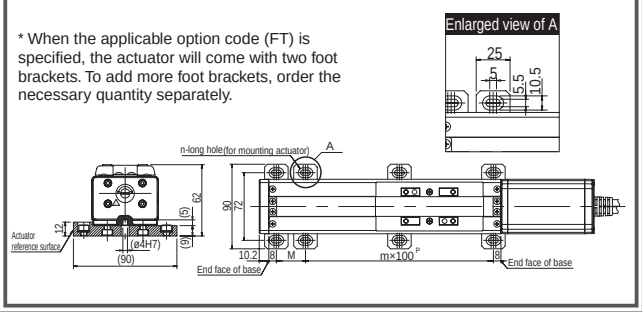
* When the applicable option code (FT) is specified, the actuator will come with two foot brackets. To add more foot brackets, order the necessary quantity separately.



RCA / RCACR-SA6C RCS2 / RCS2CR-SA6C

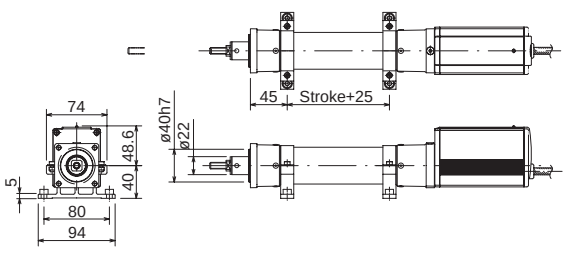
Unit model RCA-FT-SA6

* When the applicable option code (FT) is specified, the actuator will come with two foot brackets. To add more foot brackets, order the necessary quantity separately.



ERC2-RA6C / RGS6C / RGD6C

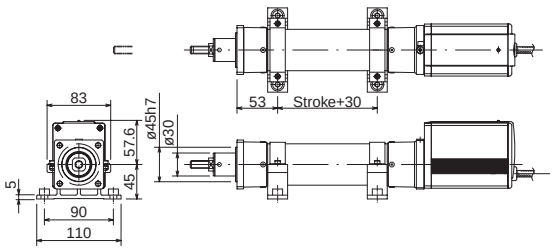
Unit model ERC2-FT-RA6



* The customer must provide mounting bolts (M6).

ERC2-RA7C / RGS7C / RGD7C

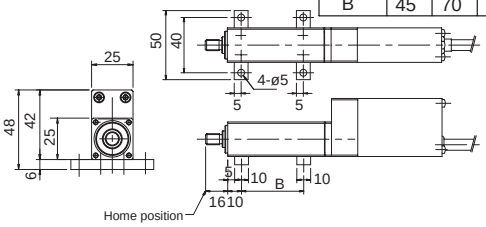
Unit model ERC2-FT-RA7



RCP2-RA2C

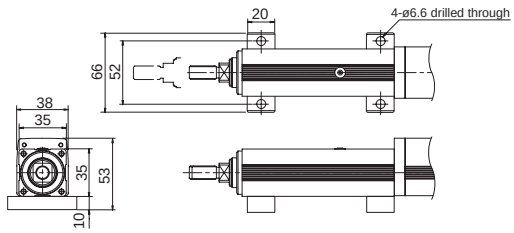
Unit model RCP2-FT-RA2

Location of dimension \ Stroke	25	50	75	100
B	45	70	95	120



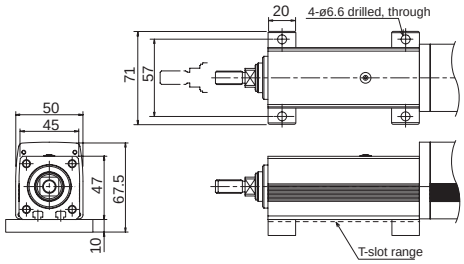
RCP2-RA3C / RGD3C

Unit model RCP2-FT-RA3



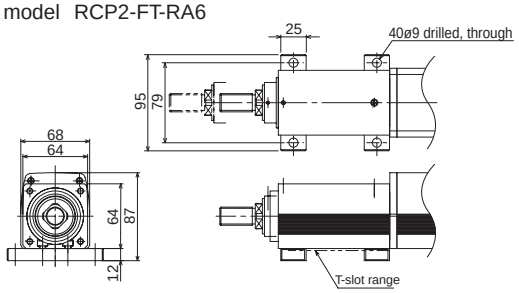
RCP2-RA4C / RGS4C / RGD4C

Unit model RCP2-FT-RA4



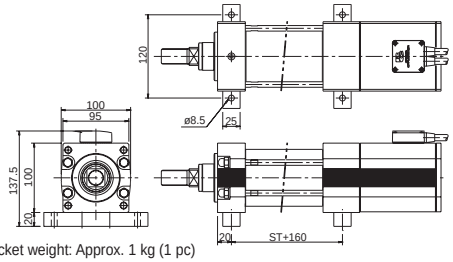
RCP2-RA6C / RGS6C / RGD6C

Unit model RCP2-FT-RA6



RCP2-RA10C

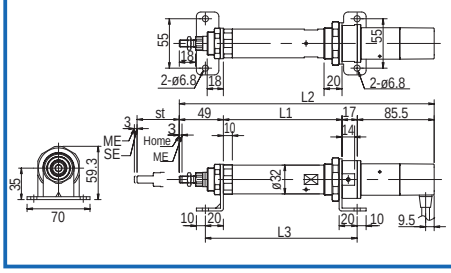
Unit model RCP2-FT-RA10



Foot bracket weight: Approx. 1 kg (1 pc)

RCA-RA3C / RGS3C / RGD3C

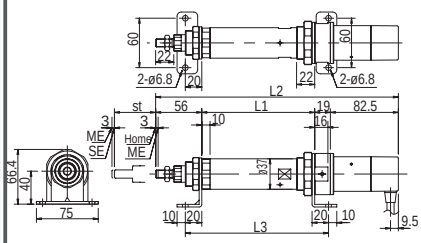
Unit model RCA-FT-RA3



st	L1	L2	L3
50	132	283.5	168.8
100	182	333.5	218.8
150	232	383.5	268.8
200	282	433.5	318.8

RCA / RCS2-RA4C / RGS4C / RGD4C

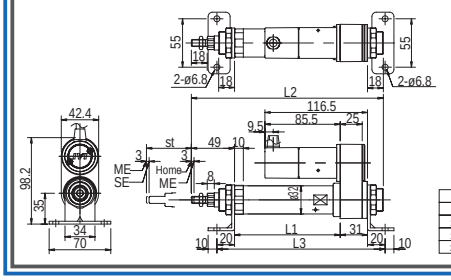
Unit model RCA-FT-RA4



st	L1	L2	L3
50	137	294.5	173.8
100	187	344.5	223.8
150	237	394.5	273.8
200	287	444.5	323.8
250	337	494.5	373.8
300	487	544.5	423.8

RCA-RA3R / RGS3R / RGD3R

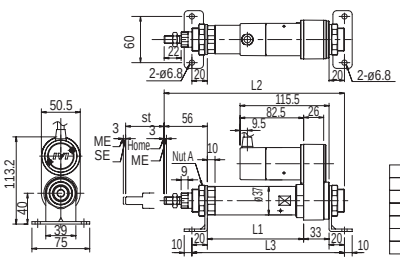
Unit model RCA-FT-RA3R



st	L1	L2	L3
50	120	218	191
100	170	268	241
150	220	318	291
200	270	368	341

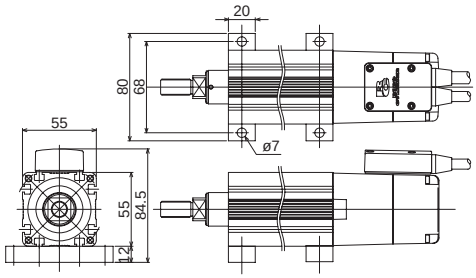
RCA(RCS2)-RA4R / RGS4R / RGD4R

Unit model RCA(RCS2)-FT-RA4

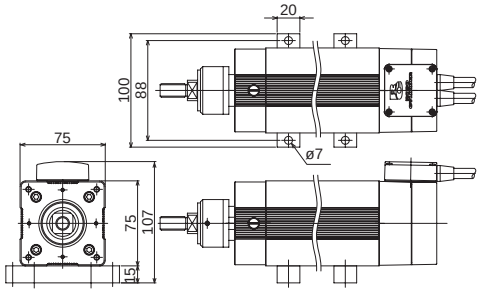


st	L1	L2	L3
50	125	234	198
100	175	284	248
150	225	334	298
200	275	384	348
250	325	434	398
300	375	484	448

RCS2-RA5C / RGS5C / RGD5C
Unit model RCS2-FT-RA5



RCS2-RA7□D / RGS7□D / RGD7□D
Unit model RCS2-FT-RA7



Home Check Sensor

■Option Code HS

Applicable model	Slider type	RCA (RCACR)-SA4C / SA5C / SA6C, RCS2 (RCS2CR)-SA4C / SA5C / SA6C RCA-SA4R / SA5R / SA6R, RCS2-SA4R / SA5R / SA6R
	Rod type	RCA-RA3C / RA3R / RA4C / RA4R, RCS2-RA4C / RA4R
Description	A sensor for checking if the slider has definitely moved to the home position through home return.	

Limit Switch

■Option Code L

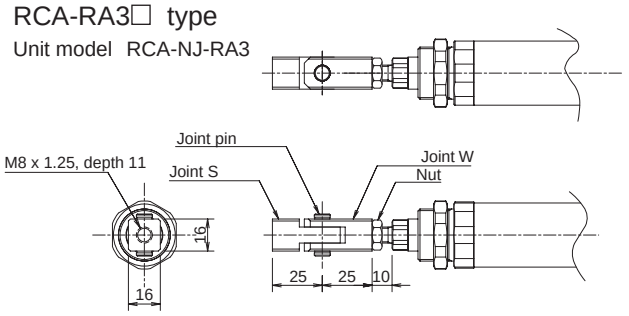
Applicable model	Rotary type	RCS2-RT6 / RT6R / RT7R
Description	When home return is performed, the home will be determined after the actuator reverses following contact with the mechanical end. This optional sensor is used to detect this reversing. (This sensor comes standard on all rotary types.)	

Knuckle Joint

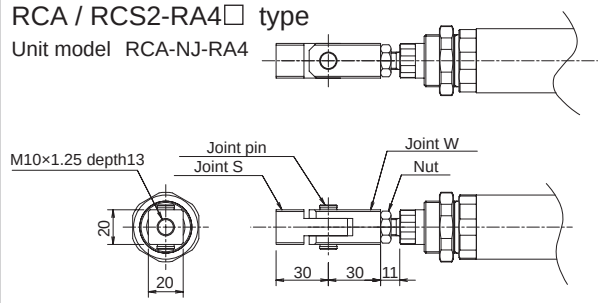
■Option Code NJ

Applicable model	Rod type	RCA-RA3C / RA3D / RA3R / RA4C / RA4D / RA4R RCS2-RA4C / RA4D / RA4R
Description	A bracket that provides some degree of flexibility (rotation) to the movement of the tip of the actuator rod when a clevis or trunnion bracket is used.	

RCA-RA3□ type
Unit model RCA-NJ-RA3



RCA / RCS2-RA4□ type
Unit model RCA-NJ-RA4



Reversed-Home Specification

■Option Code NM

Applicable model	All slider types All rod types (RCP2-RA2C / RA10C, RCS2-RA5C / RA5R / RA7AD / RA7BD those models are excluded)
Description	Normally the home position is set on the motor side for both slider and rod types. If the home must be set on the opposite side due to the layout of the system, etc., you can specify this option to reverse the home direction. (Since the home position is adjusted prior to the shipment, any request for changing the home direction after the delivery will require the actuator to be returned to IAI for adjustment.)

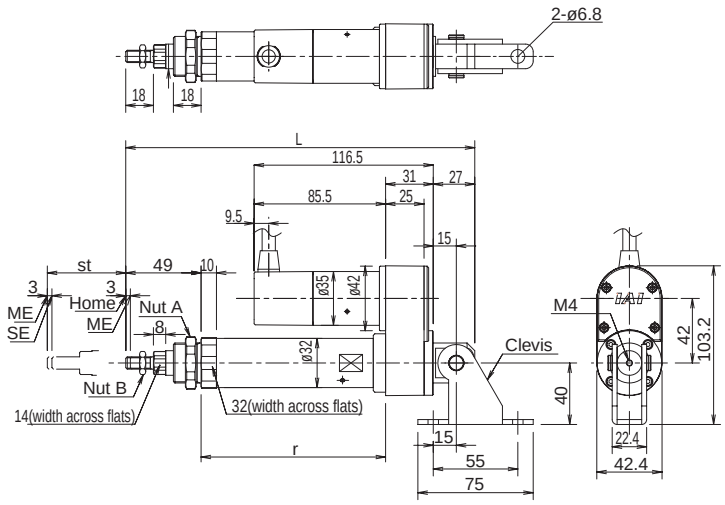
Clevis

■Option Code | QR

Applicable model	Rod type RCA-RA3R / RA4R RCS2-RA4R
Description	A bracket for aligning the cylinder movement when the load installed at the tip of the rod moves in a direction different from the rod.

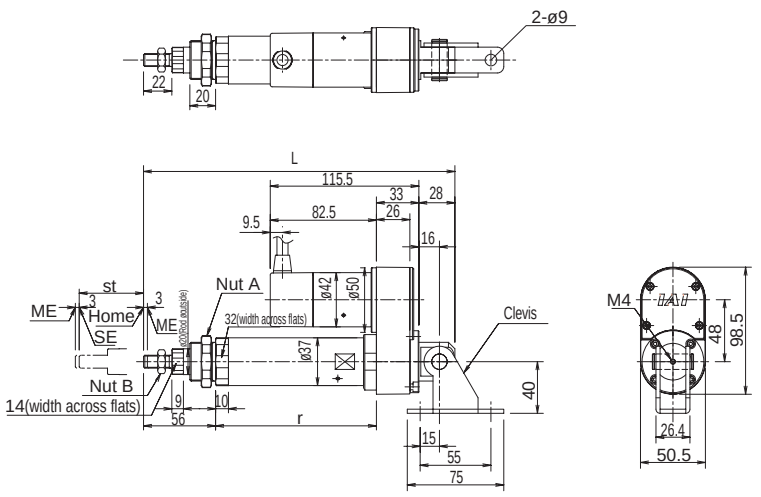
Caution If the rod is to be moved with a clevis bracket attached to it, use a guide type or install an external guide to prevent the rod from receiving any load other than from its moving direction.

RCA-RA3R
Unit model RCA-QR-RA3



st	ℓ	L
50	120	227
100	170	277
150	220	327
200	270	377

RCA / RCS2-RA4R
Unit model RCA-QR-RA4



st	ℓ	L
50	125	242
100	175	292
150	225	342
200	275	392
250	325	442
300	375	492

Opposite Motor Reversing Direction

■Option Code R

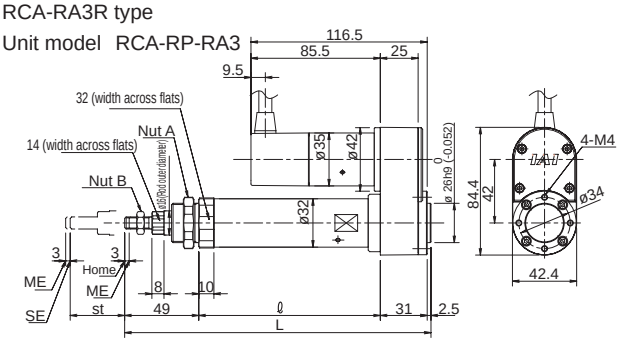
Applicable model	Motor-reversing slider type	RCA-SA4R / SA5R / SA6R RCS2-SA4R / SA5R / SA6R / SA7R / SS7R / SS8R
	Motor-reversing rod type	RCS2-RA5R
Description	Change the motor reversing direction of a motor reversing type to the opposite side.	

Rear Mounting Plate

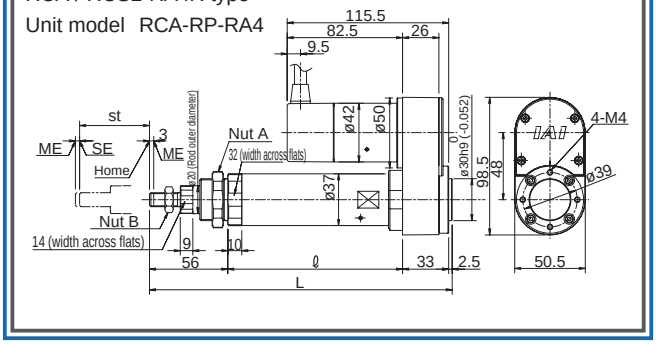
■Option Code RP

Applicable model	Motor-reversing slider type RCA-RA3R / RA4R, RCS2-RA4R
Description	A bracket (plate) for affixing the back of a motor-reversing rod type (RA3R/RA4R) to the system.

RCA-RA3R type
Unit model RCA-RP-RA3



RCA / RCS2-RA4R type
Unit model RCA-RP-RA4

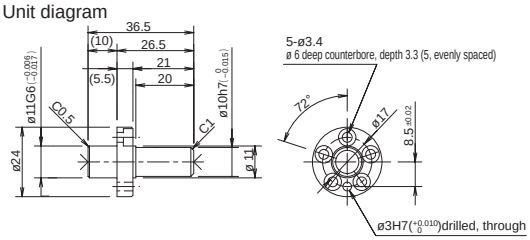


Shaft Adapter

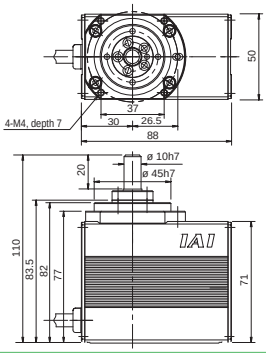
■Option Code SA

Applicable model	Rotary type RCP2-RTB / RTC
Description	An adapter for installing a jig, etc., onto the rotating part of a rotary type.

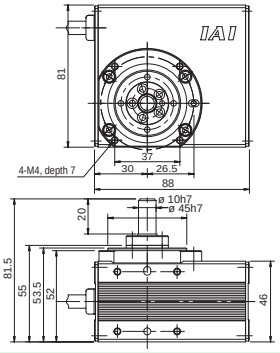
Unit diagram



Combined with RCP2-RTB
Unit model RCP2-SA-RT



Combined with RCP2-RTC
Unit model RCP2-SA-RT

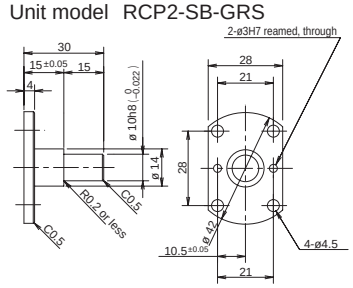


Shaft Bracket

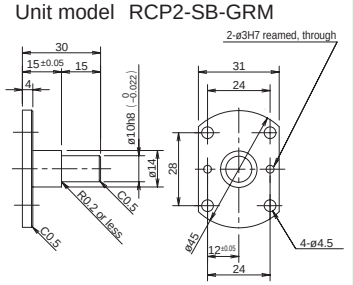
■Option Code SB

Applicable model	Gripper type RCP2-GRS / GRM
Description	An affixing bracket for installing the gripper body.

RCP2-GRS type
Unit model RCP2-SB-GRS



RCP2-GRM type
Unit model RCP2-SB-GRM



Slider Roller Specification

Option Code SR

Applicable model	Slider type	RCA-SA4☐ / SA5☐ / SA6 RCS2-SA4☐ / SA5☐ / SA6☐ / SA7☐ / SS7☐ / SS8☐
Description	Change the slider structure of a standard slider type to a roller structure similar to the one adopted by cleanroom types.	

Slider Spacer

Option Code SS

Applicable model	Slider type	RCA-SA4C / SA4R, RCS2-SA4C / SA4R
Description	A spacer for raising the top face of the slider on the SA4 type to above the motor. This spacer is not required for non-SA4 types because the top face of the slider is above the motor on these actuators.	

RCA / RCS2-SA4☐ type
Unit model RCA-SS-SA4

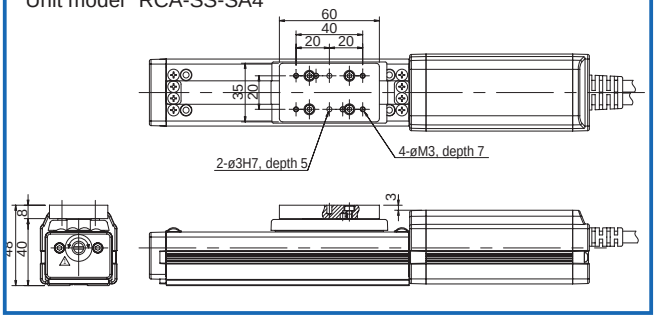
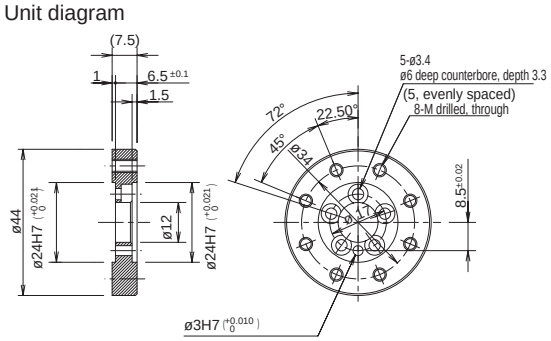


Table Adapter

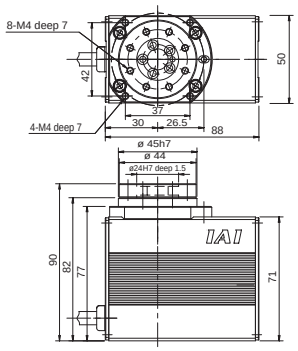
Option Code TA

Applicable model	Rotary type	RCP2-RTB / RTC
Description	An adapter for installing a jig, etc., onto the rotating part of a rotary type.	

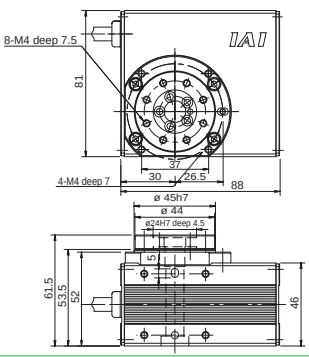
Unit diagram



RCP2-RTB type
Unit model RCP2-TA-RT



RCP2-RTC type
Unit model RCP2-TA-RT



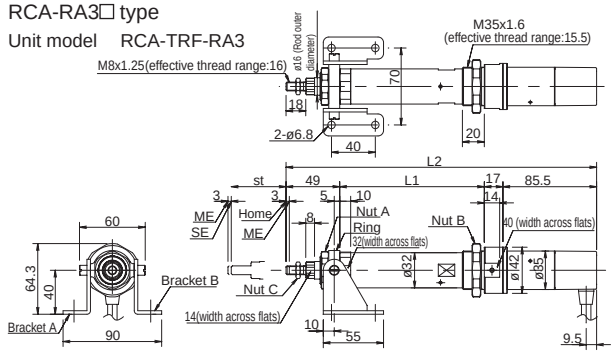
Front Trunnion

■Option Code TRF

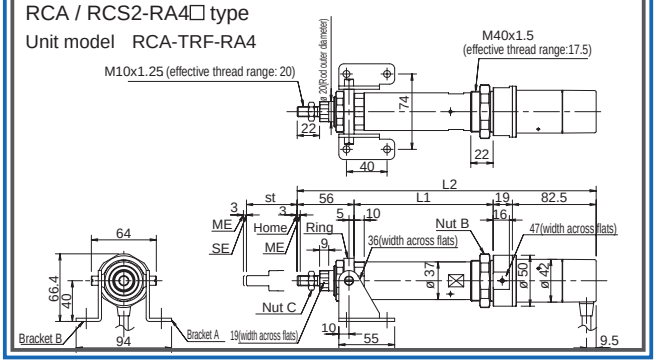
Applicable model	Rod type RCA-RA3C / RA3D / RA3R / RA4C / RA4D / RA4R RCS2-RA4C / RA4D / RA4R
Description	A bracket for aligning the cylinder movement when the load installed at the tip of the rod moves in a direction different from the rod.

Caution If the rod is to be moved with a trunnion bracket attached to it, use a guide type or install an external guide to prevent the rod from receiving any load other than from its moving direction.

RCA-RA3□ type
Unit model RCA-TRF-RA3



RCA / RCS2-RA4□ type
Unit model RCA-TRF-RA4



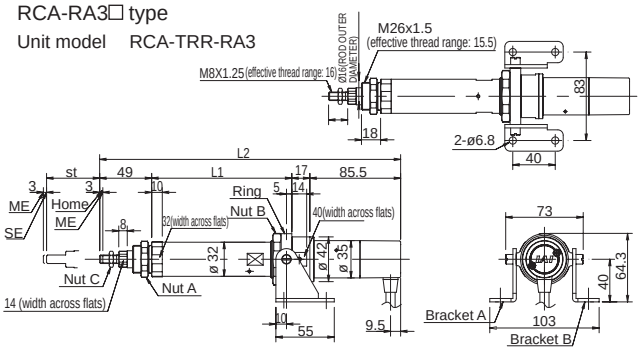
Rear Trunnion

■Option Code TRR

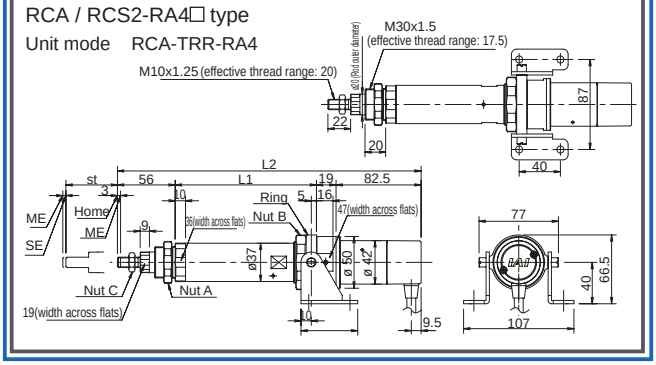
Applicable model	Rod type RCA-RA3C / RA3D / RA4C / RA4D RCS2-RA4C / RA4D
Description	A bracket for aligning the cylinder movement when the load installed at the tip of the rod moves in a direction different from the rod.

Caution If the rod is to be moved with a trunnion bracket attached to it, use a guide type or install an external guide to prevent the rod from receiving any load other than from its moving direction.

RCA-RA3□ type
Unit model RCA-TRR-RA3



RCA / RCS2-RA4□ type
Unit mode RCA-TRR-RA4



Vacuum Joint on Opposite Side

■Option Code VR

Applicable model	All cleanroom types
Description	On standard specifications, the vacuum joint is installed on the left side of the actuator as viewed from the motor. This option changes the position of the vacuum joint to the opposite (right) side.

List of Spare Part Models by Type

* The models in ( ) apply to robot cables.

Series	Type	Stainless sheet model	Motor cable model (motor robot cable model)	Encoder cable model (encoder robot cable model)
ERC2 Slider type	SA6C	(Not available)	[Power & I/O cable (PIO specification) / Power & I/O cable (SIO specification)] CB-ERC-PWBIO□□□ / CB-ERC2-PWBIO□□□ (CB-ERC-PWBIO□□□-RB / CB-ERC2-PWBIO□□□-RB) [Power & I/O cable with connectors on both ends (PIO specification)] CB-ERC-PWBIO□□□-H6 (CB-ERC-PWBIO□□□-RB-H6)	
	SA7C			
ERC2 Rod type	RA6C			
	RA7C			
	RGS6C			
	RGS7C			
	RGD6C			
	RGD7C			
RCP2 Slider type	SA5C	ST-2A5- (stroke)	CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	SA6C	ST-2A6- (stroke)		
	SA7C	ST-2A7- (stroke)		
	SS7C	ST-SS1- (stroke)		
	SS8C	ST-SM1- (stroke)		
	SA5R	ST-2A5- (stroke)		
	SA6R	ST-2A6- (stroke)		
	SA7R	ST-2A7- (stroke)		
	SS7R	ST-SS1- (stroke)		
	SS8R	ST-SM1- (stroke)		
	BA6	(Not available)		
	BA7			
	HS8C	ST-SM1- (stroke)		CB-RFA-PA□□□ (CB-RFA-PA□□□-RB)
	HS8R	ST-SM1- (stroke)		
RCA Slider type	SA4C	ST-SA4- (stroke)	CB-ACS-MA□□□ * With the RCA series, the standard motor cable is a robot cable.	CB-ACS-PA □□□ (CB-ACS-PA□□□-RB)
	SA5C	ST-SA5- (stroke)		
	SA6C	ST-SA6- (stroke)		
	SA4D	ST-SA4- (stroke)		
	SA5D	ST-SA5- (stroke)		
	SA6D	ST-SA6- (stroke)		
	SS4D	ST-SS4- (stroke)		
	SS5D	ST-SS5- (stroke)		
	SS6D	ST-SS6- (stroke)		
	SA4R	ST-SA4- (stroke)		
	SA5R	ST-SA5- (stroke)		
	SA6R	ST-SA6- (stroke)		
RCS2 Slider type	SA4C	ST-SA4- (stroke)	CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	[SCON/SSEL/XSEL-P,Q] CB-RCS2-PA□□□ (CB-X2-PA□□□) [XSEL-J,K] CB-RCBC-PA□□□ (CB-RCBC-PA□□□-RB)
	SA5C	ST-SA5- (stroke)		
	SA6C	ST-SA6- (stroke)		
	SA7C	ST-SA7- (stroke)		
	SS7C	ST-SS1- (stroke)		
	SS8C	ST-SM1- (stroke)		
	SA4D	ST-SA4- (stroke)		
	SA5D	ST-SA5- (stroke)		
	SA6D	ST-SA6- (stroke)		
	SA4R	ST-SA4- (stroke)		
	SA5R	ST-SA5- (stroke)		
	SA6R	ST-SA6- (stroke)		
	SA7R	ST-SA7- (stroke)		
	SS7R	ST-SS1- (stroke)		
	SS8R	ST-SM1- (stroke)		

List of Spare Part Models by Type

Series	Type	Stainless sheet model	Motor cable model (motor robot cable model)	Encoder cable model (encoder robot cable model)
RCP2 Rod type	RA2C	(Not available)	CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	RA3C			
	RA4C			
	RA6C			
	RGS4C			
	RGS6C			
	RGD3C			
	RGD4C			
	RGD6C			
	RA10C			CB-RFA-PA□□□(CB-RFA-PA□□□-RB)
RCA Rod type	RA3C		CB-ACS-MA□□□ * With the RCA series, the standard motor cable is a robot cable.	CB-ACS-PA□□□ (CB-ACS-PA□□□-RB)
	RA4C			
	RA3D			
	RA4D			
	RA3R			
	RA4R			
	RGS3C			
	RGS4C			
	RGS3D			
	RGS4D			
	RGS3R			
	RGS4R			
	RGD3C			
	RGD4C			
	RGD3D			
	RGD4D			
	RGD3R			
	RGD4R			
RCS2 Rod type	RA4C		CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	[SCON/SSEL/XSEL-P.Q] CB-RCS2-PA□□□ (CB-X2-PA□□□) [XSEL-J.K] CB-RCBC-PA□□□ (CB-RCBC-PA□□□-RB)
	RA5C			
	RA4D			
	RA7AD			
	RA7BD			
	RA4R			
	RA5R			
	RGS4C			
	RGS5C			
	RGS4D			
	RGS7AD			
	RGS7BD			
	RGS4R			
	RGS5R			
	RGD4C			
	RGD5C			
	RGD4D			
	RGD7AD			
	RGD7BD			
	RGD4R			
	RGD5R			

Series	Type	Stainless sheet model	Motor cable model (motor robot cable model)	Encoder cable model (encoder robot cable model)
RCA Arm type	A4R	(Not available)	CB-ACS-MA□□□ * With the RCA series, the standard motor cable is a robot cable.	CB-ACS-PA (CB-ACS-PA□□□-RB)
	A5R			
	A6R			
RCS2 Arm type	A4R		CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	[SCON/SSEL/XSEL-P.Q] CB-RCS2-PA (CB-X2-PA□□□) [XSEL-J.K] CB-RCBC-PA□□□ (CB-RCBC-PA□□□-RB)
	A5R			
	A6R			
RCS2 Flat type	F5D			
RCP2 Gripper type	GRS		CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	GRM			
	GR3LS			
	GR3LM			
	GR3SS			
	GR3SM			
RCS2 Gripper type	GR8		CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	CB-RCS2-PA□□□(CB-X2-PA□□□) CB-RCBC-PA□□□(CB-RCBC-PA□□□-RB)
RCP2CR Rotary type	RTB		CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	RTC			
RCS2 Rotary type	RT6		CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	[SCON/SSEL/XSEL-P.Q] CB-RCS2-PLA□□□ (CB-X2-PLA □□□) [XSEL-J.K(Set of 2 pcs)] CB-RCBC-PA□□□(CB-RCBC-PA□□□-RB) CB-X-LC□□□
	RT6R			
	RT7R			
RCP2CR Cleanroom type	SA5C	ST-2A5-(Stroke)	CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	SA6C	ST-2A6-(Stroke)		
	SA7C	ST-2A7-(Stroke)		
	SS7C	ST-SS2-(Stroke)		
	SS8C	ST-SM2-(Stroke)		
	HS8C	ST-SM2-(Stroke)		
RCACR Cleanroom type	SA4C	ST-SA4-(Stroke)	CB-ACS-MA□□□ With the RCA series, the standard motor cable is a robot cable.	CB-ACS-PA□□□ (CB-ACS-PA□□□-RB)
	SA5C	ST-SA5-(Stroke)		
	SA6C	ST-SA6-(Stroke)		
	SA5D	ST-SA5-(Stroke)		
	SA6D	ST-SA6-(Stroke)		
RCS2CR Cleanroom type	SA4C	ST-SA4-(Stroke)	CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	[SCON/SSEL/XSEL-P.Q] CB-RCS2-PA□□□ (CB-X2-PA□□□) [XSEL-J.K] CB-RCBC-PA□□□ (CB-RCBC-PA□□□-RB)
	SA5C	ST-SA5-(Stroke)		
	SA6C	ST-SA6-(Stroke)		
	SA7C	ST-SA7-(Stroke)		
	SS7C	ST-SS2-(Stroke)		
	SS8C	ST-SM2-(Stroke)		
	SA5D	ST-SA5-(Stroke)		
	SA6D	ST-SA6-(Stroke)		
RCP2W Splash-proof type	RA4C	(Not available)	CB-RCP2-MA□□□ * With the RCP2 series, the standard motor cable is a robot cable.	CB-RCP2-PA□□□ (CB-RCP2-PA□□□-RB)
	RA6C			CB-RFA-PA□□□ (CB-RFA-PA□□□-RB)
	SA16C			
	RA10C			
RCAW Splash-proof type	RA3?		CB-ACS-MA□□□ * With the RCA series, the standard motor cable is a robot cable.	CB-ACS-PA□□□ (CB-ACS-PA□□□-RB)
	RA4?			
RCS2WSplash-proof type	RA4?		CB-RCC-MA□□□ (CB-RCC-MA□□□-RB)	CB-RCS2-PA□□□(CB-X2-PA□□□) CB-RCBC-PA□□□(CB-RCBC-PA□□□-RB)

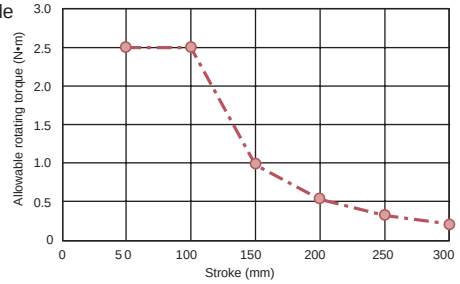
Technical Reference on Guide Types ERC2/RCP2/RCA/RCS2

Allowable Rotating Torque

The allowable torque for each model is shown below.
If rotating torque is to be applied, keep the torque within the range specified below. Take note that single-guide types cannot receive rotating torque.

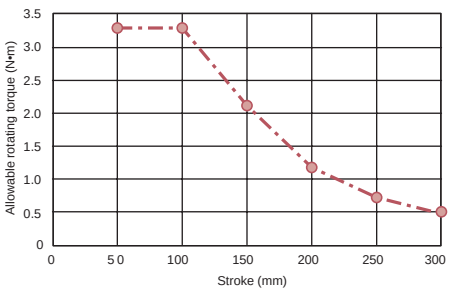
ERC2-RGD6C type

■Double Guide



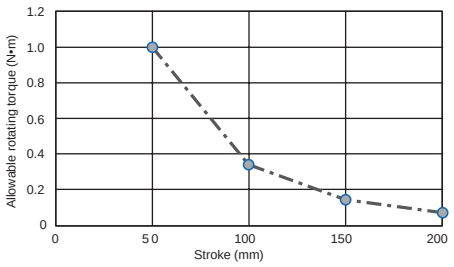
ERC2-RGD7C type

■Double Guide



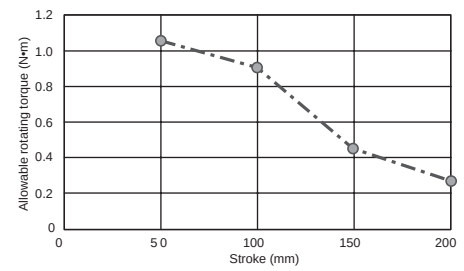
RCA / RCS2-RGD3□type (Double-Guide Specification)

■Double Guide



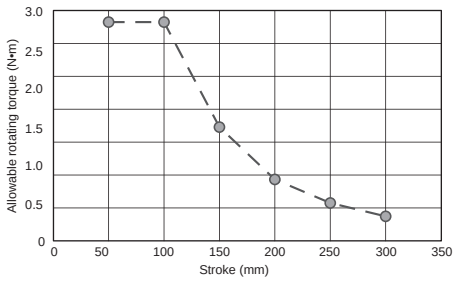
RCS2-RGD4□type

■Double Guide



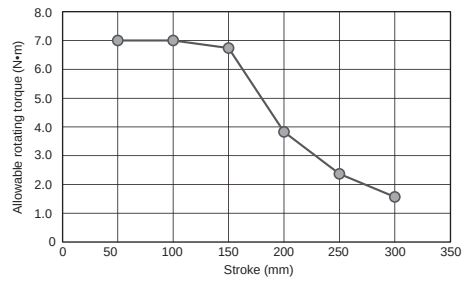
RCS2-RGD5C type (Double-Guide Specification)

■Double Guide

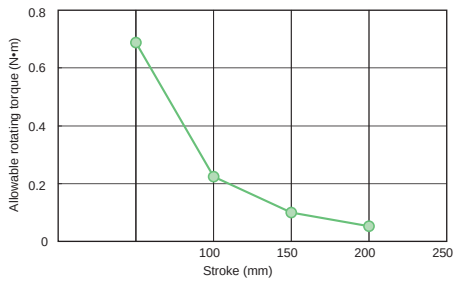


RCS2-RGD7AD / RGD7BD type

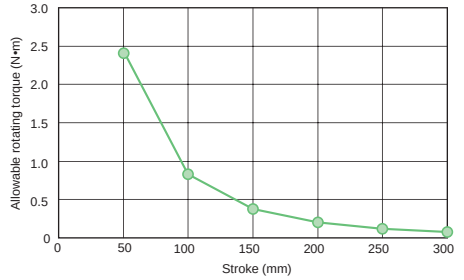
■Double Guide



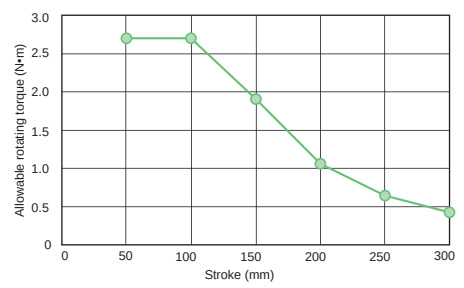
RCP2-RGD3C type



RCP2-RGD4C type



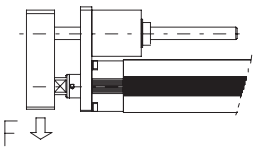
RCP2-RGD6C type



Relationship of Allowable Load at Tip and Traveling Life

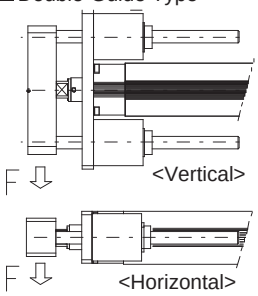
The greater the load at the guide tip, the shorter the traveling life becomes. Select an appropriate model by considering an optimal balance between load and life.

■ Single-Guide Type



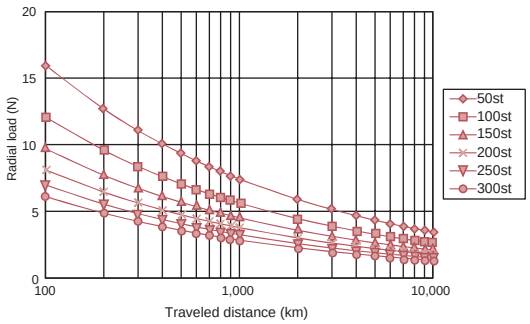
* Single-guide actuators cannot receive any load other than in vertical direction.

■ Double-Guide Type

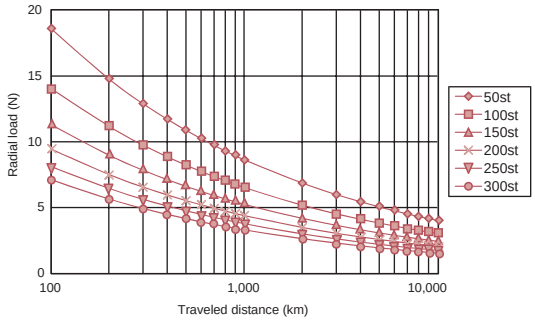


Single Guide

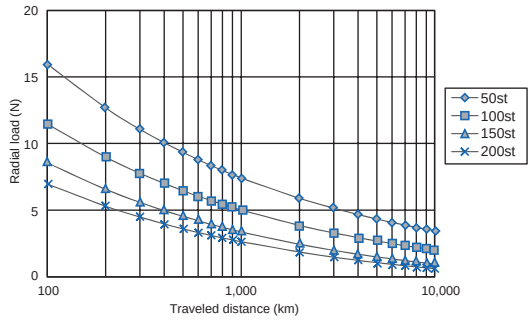
ERC2-RGS6C type



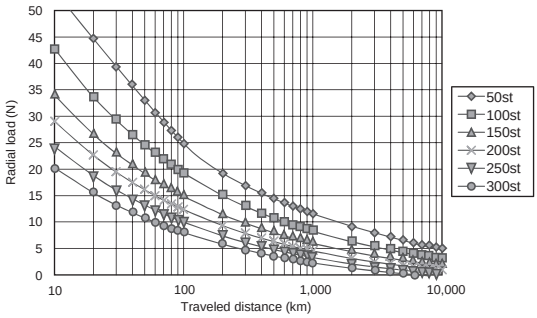
ERC2-RGS7C type



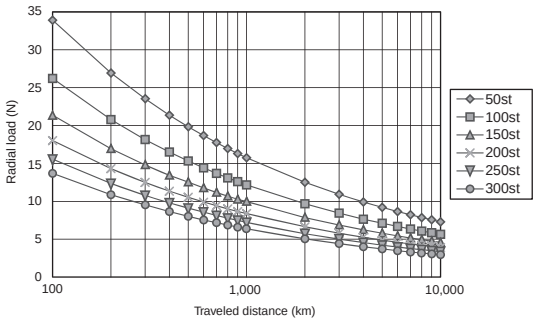
RCA / RCS2-RGS3C type



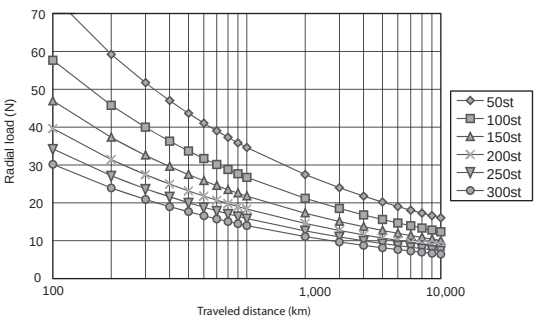
RCS2-RGS4C type



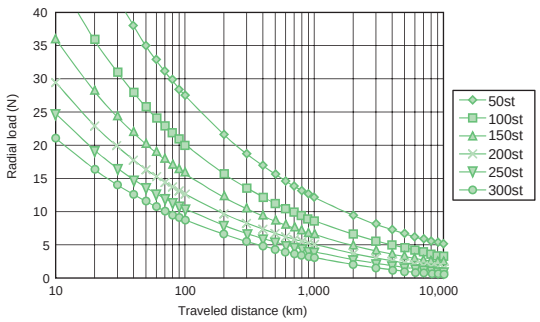
RCS2-RGS5C type



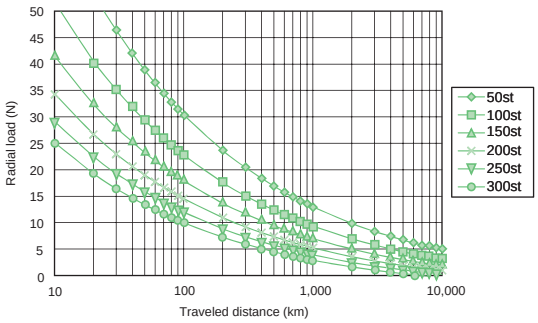
RCS2-RGS7AD / RGS7BD type



RCP2-RGS4C type

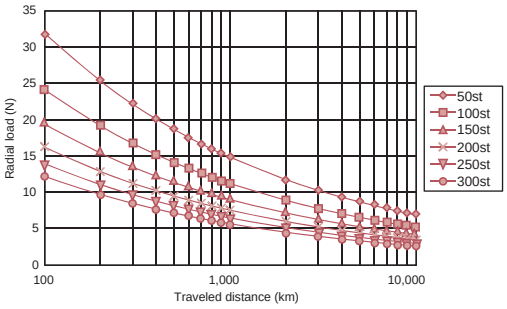


RCP2-RGS6C type

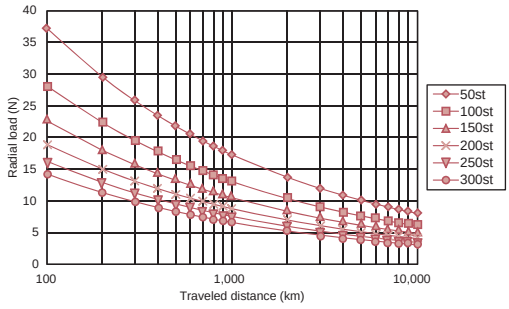


Double Guide

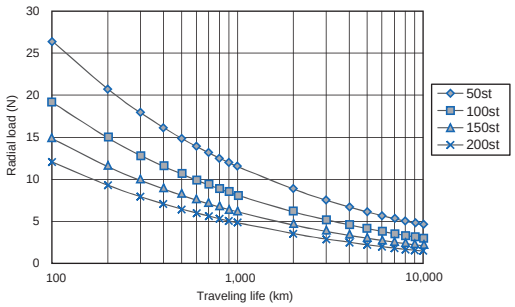
ERC2-RGD6C type



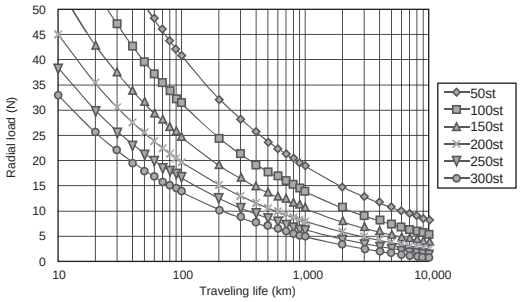
ERC2-RGD7C type



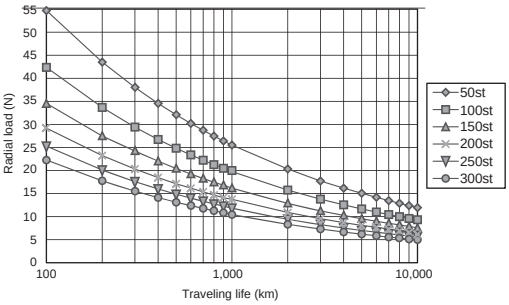
RCA / RCS2-RGD3C type



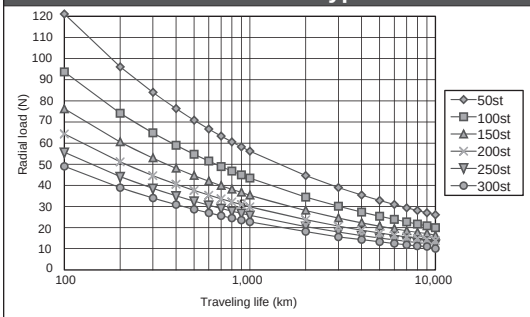
RCS2-RGD4C type



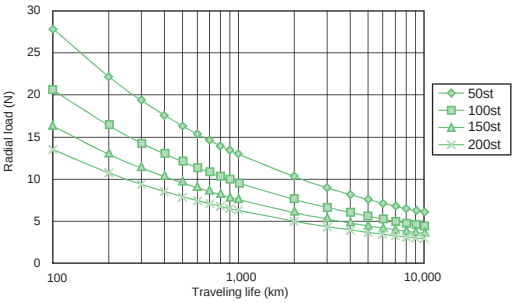
RCS2-RGD5C type



RCS2-RGD7AD / RGD7BD type



RCP2-RGD3C type



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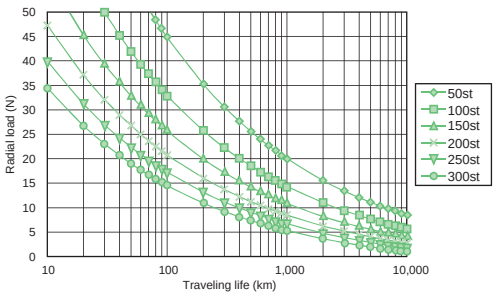

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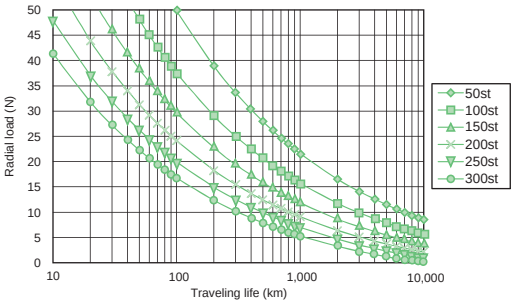
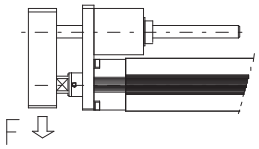


Radial Load and Deflection at Tip

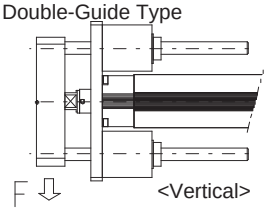
The diagrams below show how the load applied at the tip of the guide correlates with the deflection that generates.

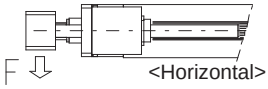
■ Single-Guide Type



* Single-guide actuators cannot receive any load other than in vertical direction.

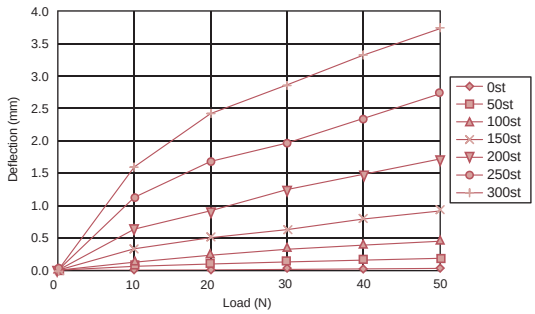
■ Double-Guide Type



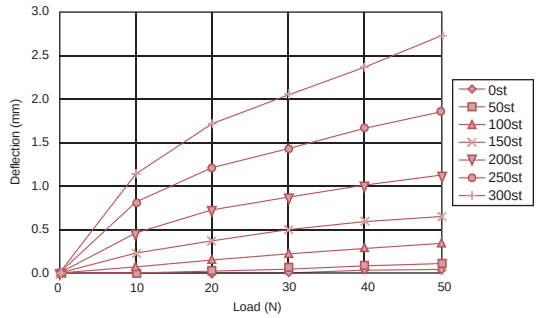


Single Guide

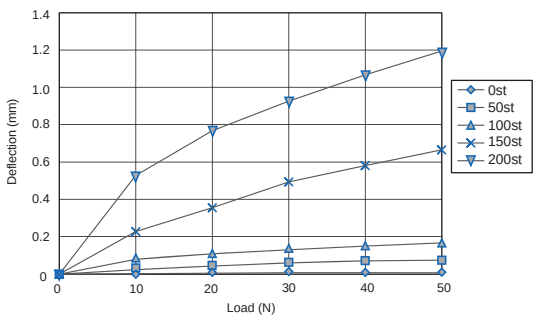
ERC2-RGS6C type



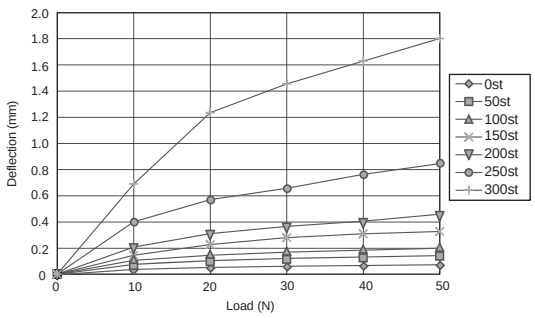
ERC2-RGS7C type



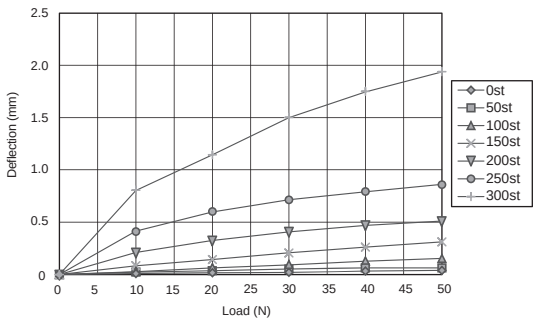
RCA / RCS2-RGS3□type



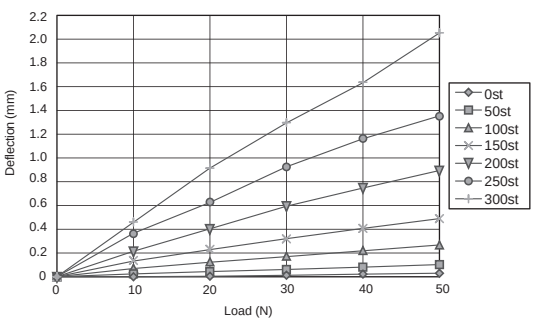
RCS2-RGS4□type



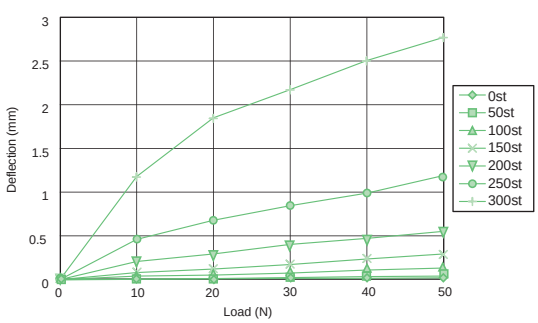
RCS2-RGS5C type



RCS2-RGS7AD / RGS7BD type



RCP2-RGS4C type



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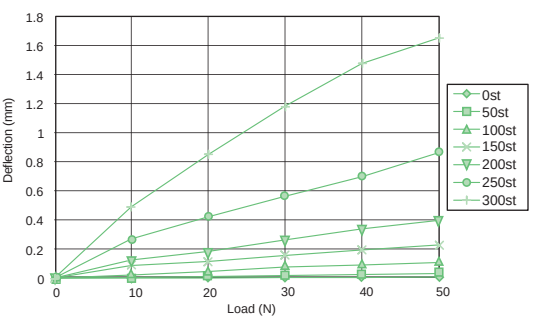
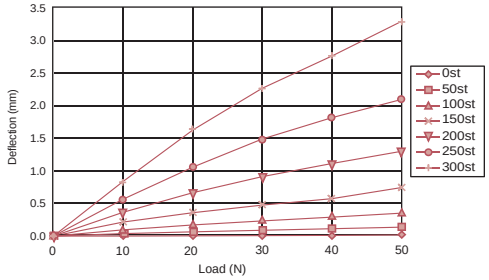


Double Guide

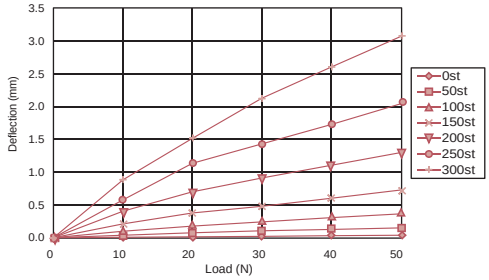
ERC2-RGD6C type

■Double Guide <Horizontal> Specification



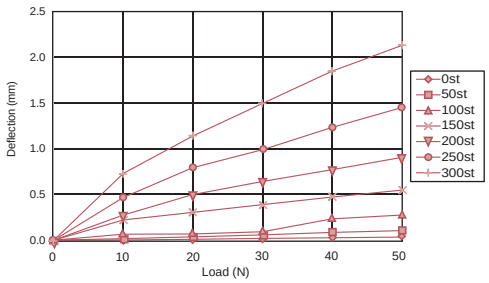
ERC2-RGD6C type

■ Double Guide <Vertical> Specification



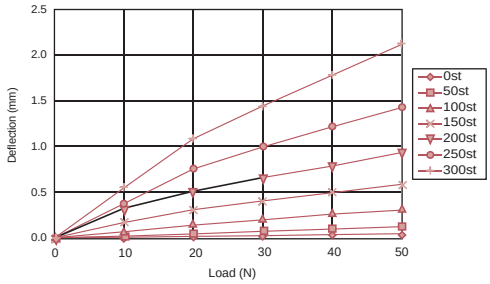
ERC2-RGD7C type

■Double Guide <Horizontal> Specification



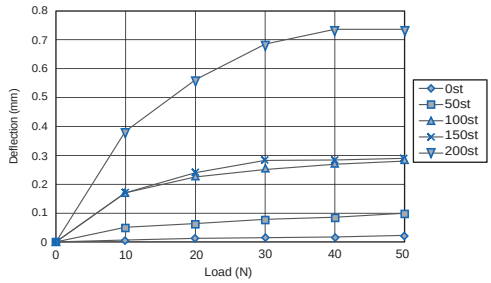
ERC2-RGD7C type

■ Double Guide <Vertical> Specification



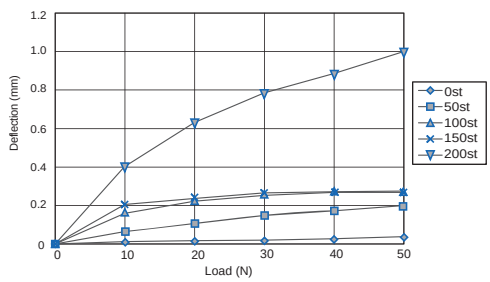
RCA / RCS-RGD3□type

■Double Guide <Horizontal> Specification



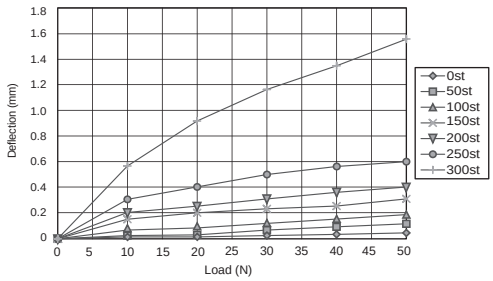
RCA / RCS-RGD3□type

■ Double Guide <Vertical> Specification



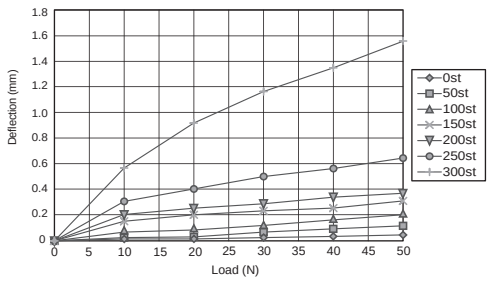
RCS2-RGD4□type

■Double Guide <Horizontal> Specification



RCS2-RGD4□type

■ Double Guide <Vertical> Specification



RCS2-RGD5C type

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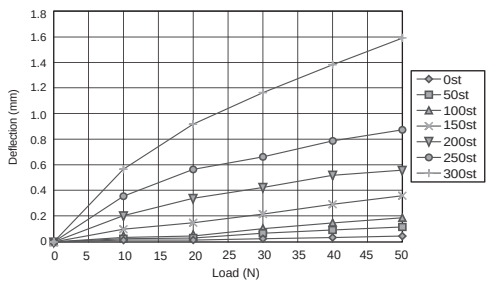

RCS2-RGD5C type

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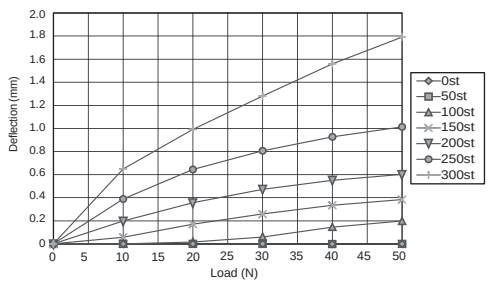

RCS2-RGD7AD / RGD7BD type

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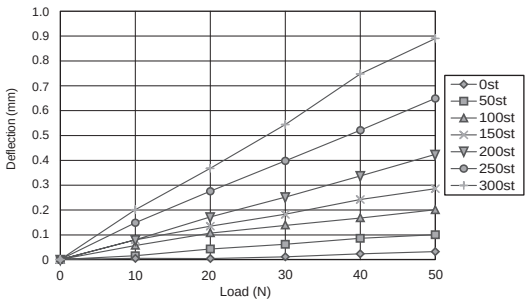
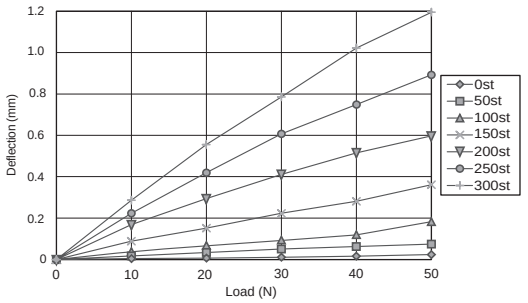


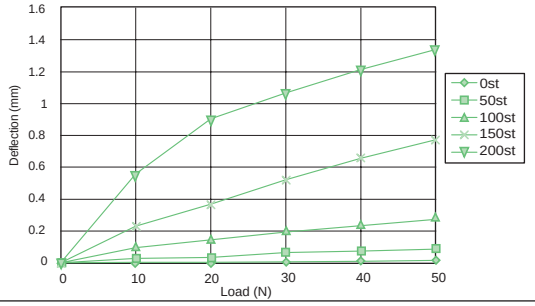
RCS2-RGD7AD / RGD7BD type

■Double Guide <Vertical> Specification



RCP2-RGD3C type

■Double Guide <Horizontal> Specification



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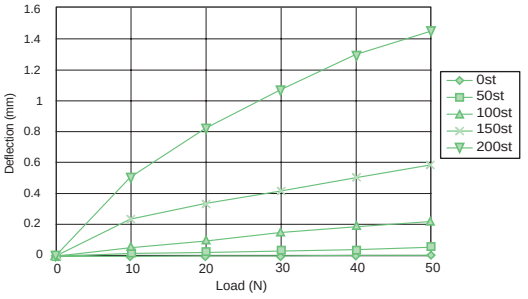
■Double Guide <Vertical> Specification



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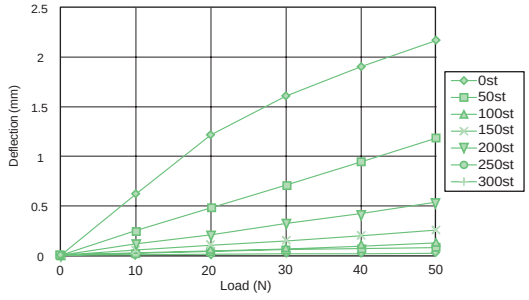
■Double Guide <Horizontal> Specification



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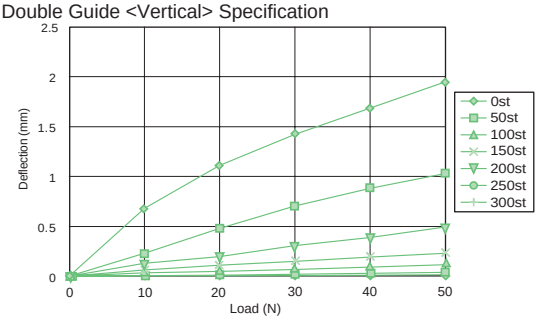

RCP2-RGD6C type

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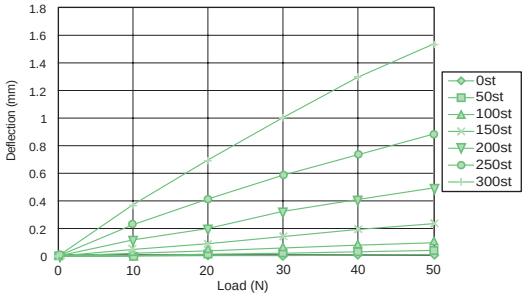

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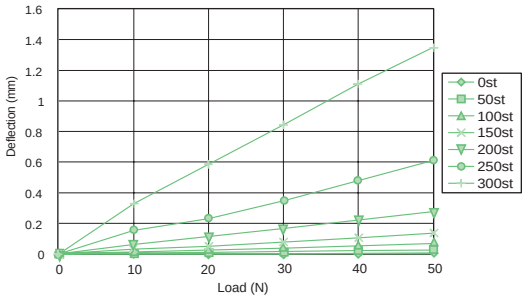

RoboCylinder Overview
Extract Cat. No. 0707-E

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ISO 9001

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