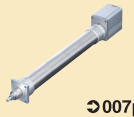
Product Overview

Controller Integrated Type ➲001p

Slider type
Pulse motor (24V)
ERC2

➲003p

Rod type
Pulse motor (24V)
ERC2

➲007p

Single-guide
Pulse motor (24V)
ERC2

➲011p

Double-guide
Pulse motor (24V)
ERC2

➲015p

Slider Type ➲019p

Motor unit type
Pulse motor (24V)
RCP3

➲021p

Coupling type
Pulse motor (24V)
RCP2

➲029p

Motor reversing type
Pulse motor (24V)
RCP2

➲041p

Belt drive type
Pulse motor (24V)
RCP2

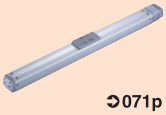
➲053p

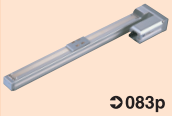
Motor unit type
Servo motor (24V)
RCA2

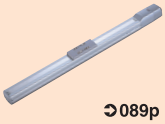
➲057p

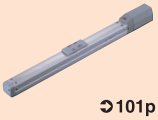
Coupling type
Servo motor (24V)
RCA
Compatible with rapid acceleration and deceleration

➲065p

Built-in type
Servo motor (24V)
RCA

➲071p

Motor reversing type
Servo motor (24V)
RCA

➲083p

Coupling type
Servo motor (100/200V)
RCS2
Compatible with rapid acceleration and deceleration

➲089p

Built-in type
Servo motor (100/200V)
RCS2

➲101p

Motor reversing type
Servo motor (100/200V)
RCS2

➲107p

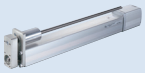
Rod Type ➲119p

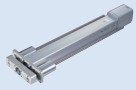
Coupling type
Pulse motor (24V)
RCP2

➲121p

High thrust type
Pulse motor (24V)
RCP2

➲129p

Single-guide
Pulse motor (24V)
RCP2

➲131p

Double-guide
Pulse motor (24V)
RCP2

➲135p

Coupling type
Servo motor (24V)
RCA
Compatible with rapid acceleration and deceleration

➲141p

Built-in type
Servo motor (24V)
RCA

➲145p

Motor reversing type
Servo motor (24V)
RCA

➲149p

Single-guide
Servo motor (24V)
RCA
Compatible with rapid acceleration and deceleration

➲153p

Double-guide
Servo motor (24V)
RCA
Compatible with rapid acceleration and deceleration

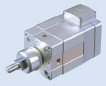
➲161p

Coupling type
Servo motor (100/200V)
RCS2
Compatible with rapid acceleration and deceleration

➲173p

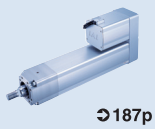
Built-in type
Servo motor (100/200V)
RCS2

➲177p

Full length short type
Servo motor (100/200V)
RCS2

➲179p

Motor reversing type
Servo motor (100/200V)
RCS2

➲183p

Super-high thrust type
Servo motor (100/200V)
RCS2

➲187p

Single-guide
Servo motor (100/200V)
RCS2
Compatible with rapid acceleration and deceleration

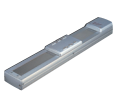
➲189p

Double-guide
Servo motor (100/200V)
RCS2
Compatible with rapid acceleration and deceleration

➲199p

Separate edition
Described in Industrial Robots General Catalog

Single axis robot
ISA/ISPA


Splash Proof single axis robot
ISDA/ISPDA


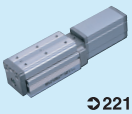
Belt single axis robot
IF


Rotational single axis robot
RS

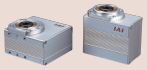

Shaft linear servo
LSA


Large linear servo
LSA


Table Type / Arm Type / Flat Type ➲213p

Table type	Table type	Arm type	Arm type	Flat type
Pulse motor (24V)	Servo motor (24V)	Servo motor (24V)	Servo motor (100/200V)	Servo motor (100/200V)
RCP3	RCA2	RCA	RCS2	RCS2
 ➲215p	 ➲221p	 ➲227p	 ➲233p	 ➲239p

Gripper Type / Rotary Type ➲241p

Gripper type	3-Finger gripper	Gripper type	Rotary type	Rotary type
Pulse motor (24V)	Pulse motor (24V)	Servo motor (100/200V)	Pulse motor (24V)	Servo motor (100/200V)
RCP2	RCP2	RCS2	RCP2	RCS2
 ➲243p	 ➲247p	 ➲255p	 ➲257p	 ➲261p

Cleanroom Type ➲267p

Coupling type	High-speed type	Coupling type	Built-in type	Coupling type	Built-in type
Pulse motor (24V)	Pulse motor (24V)	Servo motor (24V)	Servo motor (24V)	Servo motor (100/200V)	Servo motor (100/200V)
RCP2CR	RCP2CR	RCACR	RCACR	RCS2CR	RCS2CR
 ➲269p	 ➲279p	 ➲281p	 ➲287p	 ➲291p	 ➲303p

Dustproof / Splash-proof ➲307p

Waterproof type	Splash-proof rod type	Splash-proof high thrust type	Splash-proof rod type	Splash-proof rod type
Pulse motor (24V)	Pulse motor (24V)	Pulse motor (24V)	Servo motor (24V)	Servo motor (100/200V)
RCP2W	RCP2W	RCP2W	RCAW	RCS2W
 ➲309p	 ➲311p	 ➲315p	 ➲317p	 ➲321p

Controller ➲323p

Touch Panel Display	Gateway Unit	Simple Absolute Unit	ROBONET	ERC2	PCON
24V input	24V input	24V input	24V input	24V input	24V input
				ERC2	RCP3 RCP2
 ➲333p	 ➲336p	 ➲341p	 ROBO NET ➲343p	 ➲355p	 PCON ➲365p

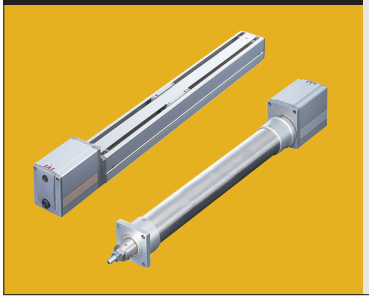
ACON	SCON	PSEL	ASEL	SSEL	XSEL
24V input	100/200V input	24V input	24V input	100/200V input	100/200V input
RCA2 RCA	RCS2	RCP3 RCP2	RCA2 RCA	RCS2	RCS2
 ACON ➲375p	 SCON ➲385p	 PSEL ➲395p	 ASEL ➲405p	 SSEL ➲415p	 X-SEL ➲425p

Technical reference Information

Cleanroom single axis robot	Cleanroom SCARA robot	Splash Proof single axis robot	Splash-proof SCARA robot	Ultra-small/small SCARA	Cartesian robot	Table top robot
ISDACR	IX-NNC	ISWA	IX-NNW	IX-NNN	ICSA3/ICSPA3	TT-A2/A3
						

Model explanation according to category

Controller integrated Type (Slider/Rod Type)

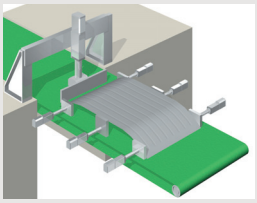


Feature

ERC2 electric actuators are low cost, controller-integrated actuators with a built-in controller. You do not need extra space for a separate controller, minimizing the control area. These electric actuators are available at affordable prices similar to those of air cylinders, and thus are great economical, high-quality candidates for replacing air cylinders.

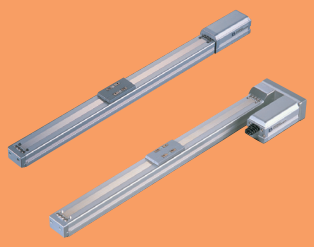
Usage

Transporting, raising, lowering, pushing and pressing when several actuators are used with a single device



Example) Locating of car rear panel

Slider Type

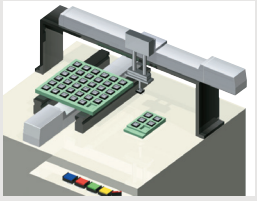


Feature

The slider on the actuator moves back and forth until it is positioned.
The slider is equipped with a built-in linear guide that keeps it straight and the payload balanced.
Select from 3 types of motor installation methods: coupling, built-in (direct connection), motor reversing.

Usage

Product pick & place:
Combining vertical transfers with positioning axis



Example) Pick & Place of product

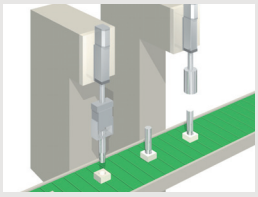
Rod Type

Feature

The rod extends and retracts from the actuator, gets into position and presses.
Select from 3 types of guides: no guide/single guide/double guide.
Select from 3 types of motor installation methods: coupling, built-in (direct connection), motor reversing.

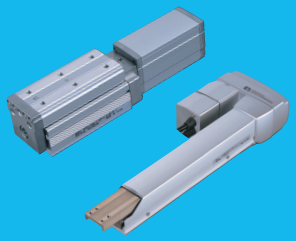
Usage

Raise and lower stocker
to push product
press fitting and crimping work



Example) Assembly of press fits of resin parts

Table Type / Arm Type / Flat Type

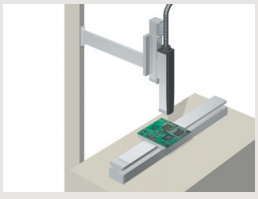


Feature

The table and arm types on the actuator, slide and get into position and then press.
Both the table and arm types are equipped with a built-in linear guide that keeps them straight and the payload balanced.
The attachment for the table and arm type is easy compared to the rod type.

Usage

Used for raising and lowering work part, as a stacker (effective for picking up work part frequently) and for pushing.



Example) Raising and lowering over inkjet head

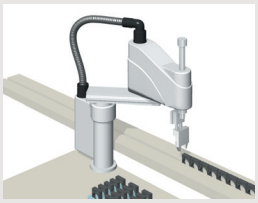
Gripper Type Rotary Type

Feature

The gripper type has an adjustable gripping force with a soft hold feature even for breakable work objects.
The rotary type is positioned at 360 degrees so it can be used like a one-directional, constantly rotating conveyor.

Usage

Gripper: holds and centers work part
Rotary: Rotates and moves work part



Example) Palletization of work partusing SCARA robot

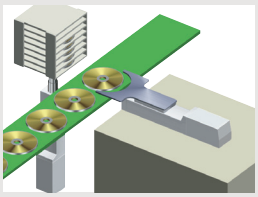
Cleanroom Type

Feature

An actuator for use in cleanrooms with a clean classification of 10 (0.1μm).
A stainless sheet prevents dust produced inside the actuator from getting into the environment which exits through the vacuum resulting in extreme cleanliness.

Usage

Transporting and positioning work part in clean rooms



Example) Stacking disks

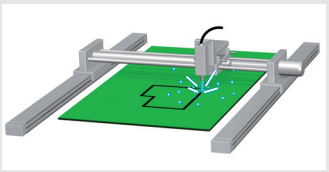
Dustproof and Splash-proof

Feature

This actuator complies with protective configuration IP65, and can be used under harsh environmental conditions exposed to water splashes and dust.

Usage

Processing equipment, foodstuffs equipment, cleaning equipment.
Transporting and positioning mechanism



Example) Using a water jet

Controller

Feature

Compatible with a variety of control methods, such as positioner, solenoid valve control, pulse train control, serial communication, field network, and program operation.

Usage

Simple positioning… positioner, solenoid valve control
Free control…pulse train, serial communications
Simultaneous control with peripherals…field network
Independent controls…Program control

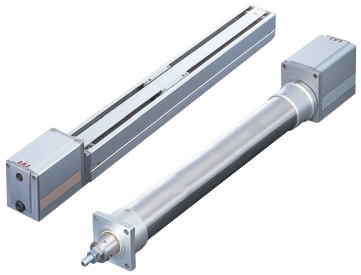
Series explanation

6 ROBO cylinder series configured according to motor type and features.

Pulse motor equipped

ERC2 Series

Controller-integrated type ultra low-priced actuator, with integrated controller.



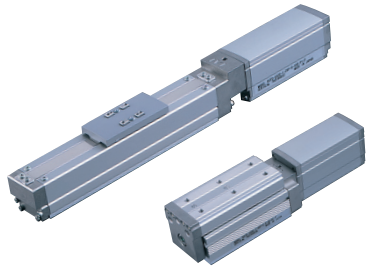
Features

1. Wiring time is decreased because the controller is integrated.
2. Controller installation space is not required, and the control panel can be miniaturized.
3. Exceptional value; actuator price includes the controller.

Controller (built-in) Input power DC24V

RCP3 Series

Lower cost and better maintenance
leads to an even more user-friendly, low-cost actuator.



Features

1. A table type, equipped with a very stiff slide mechanism, has been added.
2. Actuator width 32mm, compact type added.
3. Substantial reduction in time to replace motor unit.

Controller PCON PSEL Input power DC24V

RCP2 Series

High performance actuator,
equipped with a pulse motor capable of high thrust at low speeds.

Features

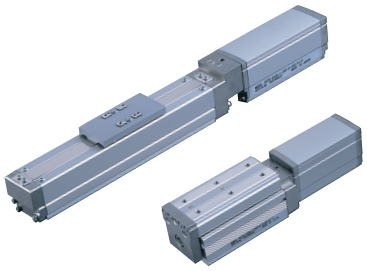
1. Wide variations
2. Capable of generating a strong force.
3. The controller corresponds to various control systems.

Controller PCON PSEL Input power DC24V

Servo motor equipped

RCA2 Series

Low-priced actuator
with improved RCA maintenance.



Features

1. A table type equipped with a very stiff slide mechanism added.
2. Actuator width 32mm, Compact type added.
3. Substantial reduction in time to replace motor unit.

Controller: ACON, ASEL
Input power: DC24V

RCA Series

24 V drive, small type servo actuator
installed the same way as an air cylinder.

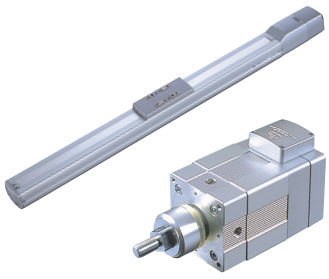
Features

1. Mounted with a similar variety of clamps as used with an air cylinder.
2. Select from 3 types of motor mounting methods: Coupling, Built-in (direct connection), and Reversing.
3. Home check sensor (optional)
4. Optional setting for high acceleration and deceleration speeds, capable of operation at up to 1G.

Controller: ACON, ASEL
Input power: DC24V

RCS2 Series

Small/medium actuators
capable of operating with 100V / 200V power.



Features

1. Maximum speed 1,000mm/s, maximum weight 60kg, maximum stroke 1,000mm.
2. Three or more axis can be combined by using XSEL controller.
3. Select from 3 types of motor mounting methods: Coupling, Built-in (direct connection), and Reversing (not included in all models).
4. Optional setting for high acceleration and deceleration speeds, capable of operation at up to 1G.

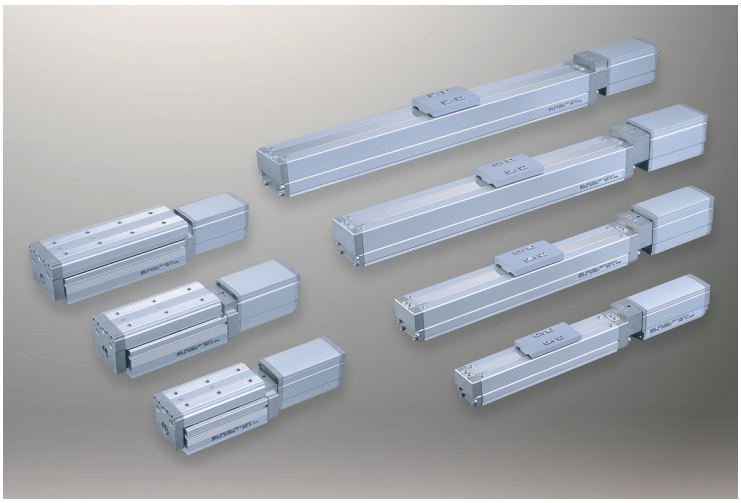
Controller: SCON, SSEL, XSEL
Input power: AC100V/200V

New Product Introduction (Actuator)

ROBO Cylinder RCP3/RCA2 Series

Details of the slider type → start at P21
Details of the table type → start at P215

Continuing progress in user friendliness by reducing costs and improving functionality



New

(1) Our Advancement for Your Benefit.

We have taken the time to completely re-engineer the guide, ball screws and servo motor to reduce manufacturing costs. We are proud to make IAI's high-quality electric actuators even more affordable!

(2) Newly released table type.

A table type has been added that was not available in the conventional lineup. It features a table on the unit that moves back and forth.
Since the table has a guide, it is effective for moment loads and when linear, forward movement is required.

(3) New Ultra-slim Slider Type (32mm in width)

Ideal for applications with space constraints, the new ultra-slim type SA3 (32mm wide) actuator is the ideal choice when only the best will do.

(4) No-Cover Option.

You can choose to have your actuator supplied without the exterior covers and stainless steel dust cover for even more cost savings.

(5) RCP3 equipped with pulse motor RCA2 equipped with servo motor.

The RCP3 is equipped with a pulse motor, resulting in a lower price and excellent pressing operation.
The RCA2 is equipped with a servo motor, and is excellent for high speed, low noise operation.

ROBO Cylinder high acceleration / deceleration compatible RCA/RCS2 Series

RCA (slider) details → from P65
RCA (rod) details → from P141
RCS2 (slider) details → from P89
RCS2 (rod) details → from P173

Achieve 1G with the High-Acceleration/Deceleration ROBO Cylinders

(1) Reduced cycle time by increasing acceleration / deceleration.

Operations of up to 1G acceleration / deceleration translates into shorter cycle times.

(2) No load capacity reduction, even with increased acceleration / deceleration.

Although the acceleration / deceleration have been increased up to 1G, operation is still possible with the same 0.3G payload.

Caution: The payload cannot be increased by lowering acceleration / deceleration speeds.

New

RCA/RCS2

Ultra-high thrust type — RCS2-RA13R Series

Details on →P187

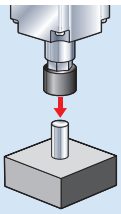
Ultra-high thrust actuator that can also be used for simple press

With the high-output servo motor, these motorized actuators can perform push-motion operation with a maximum push force of 2 tons and also achieve high-precision position control. The RCS2-RA13R series lets you adjust the push force and control positions, which are difficult to do with hydraulic actuators.

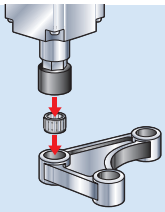
New

RA13R

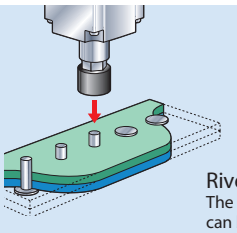
■ Example of Use



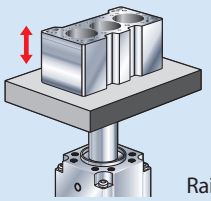
Pin press fit
The press fit position (height) can be adjusted.



Bearing press fit
The push motion speed can be adjusted.



Riveting
The push motion power can be adjusted.



Raising/lowering heavy objects
Up to 300kg can be raised/lowered.

Multi rotation type — RCP2-RTBL/RTCL Series

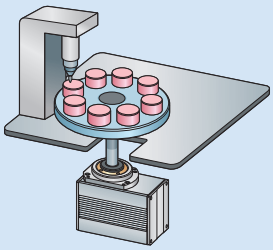
Details on RTBL →P257
Details on RTCL→P259

Multiple Rotation actuators capable of rotating continuously in the same direction

New

RTBL RTCL

■ Example of Use



RCP2-RTBL/RTCL used in an index table (linked rotation) for processing parts

(1) Can be positioned at over 360 degrees.
Since there is no stopper, positioning at over 360 degrees is possible.

(2) Unlimited rotational operation possible.
Since conveyor-like operation with uni-directional rotation is possible, it can also be used for applications in which work part is sent continuously in the same direction.
(* However, the displacement of one time when an infinite rotation operates is within ±360 degrees.)

New Product Introduction (Controller)

Network controller ROBONET

New

Details are → P343

New concept network controller substantially reduces the time required for wiring and installation.

(1) Connectable to a field network.

Can be connected to typical networks such as DeviceNet, CC-Link, and ProfiBus.

(2) Working hours reduced by saving on wiring.

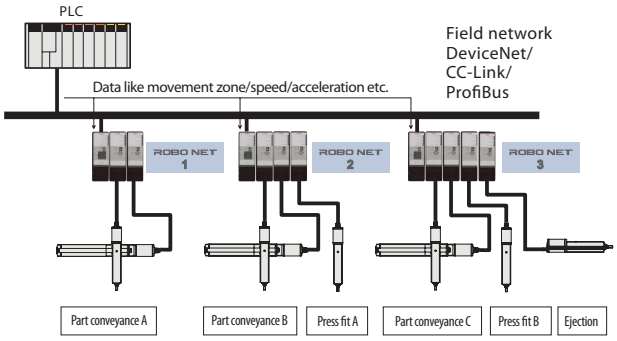
Only a single network cable is required for I/O wiring, which means substantial savings in working hours for wiring.

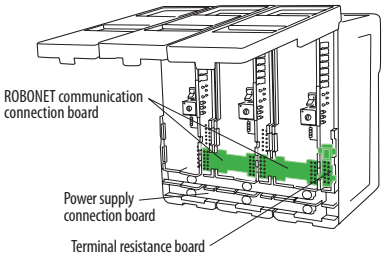
(3) Serial communications easily achieved with function block.

A function block is optionally set to render communications programs unnecessary. (Free of charge)

(4) Operable with movement position and speed numerically specified.

It can be operated by sending movement position and speed data even if positions have not been pre-specified.





(connected part in ROBONET unit)

Simple Absolute Unit PCON/ACON-ABU

Details → P341

New

Incremental specification actuators can be used as simple absolute unit actuators just by connecting them to a PCON/ACON controller.

(simple absolute unit can also be set for ROBONET)

(1) Return to home unnecessary.

Since the rechargeable battery in the simple absolute unit retains encoder data even if the control power is cut, a return to home position is not required when the power is turned on again.

(2) Encoder data can be retained for 20 days.

The encoder data can be retained continuously for up to 20 days.

Touch Panel Display — RCM-PM-01

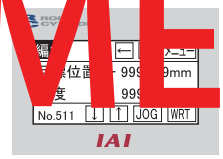
New

Details are → P333

The new touch panel indicator.
It enables CON/ACON/SCON/ERC/ROBONET data input, correction and monitoring.

(1) Position data and parameters can be changed (*1)
Even if neither the teaching pendant nor PC software are connected, movement position, speed, acceleration and other position data, as well as the zone signal region and other parameter changes are possible.
(*1) Not all parameter changes are possible.

(2) Current position, movement speed, and I/O conditions can be monitored
Linked movement, actuator current position, movement speed, controller I/O conditions and other information can be monitored.



Teaching Pendant — CON-T/SEL-T (TD)

Details are → P333

New Teaching pendant where environmental factor and safety specification were enhanced

New

(1) Protective class IP54 compatible
Thanks to excellent dustproof and splash-proof performance, can be used in harsh environments exposed to dust and a degree of water spray.

(2) CE compatible (ANSI™ regulations compatible)
All machines are CE compatible. In addition, the SEL-TD type also complies withUL and ANSI™ regulations.

High thrust motor controller — PCON-CF

New

Details → P365

This controller is only available for high thrust motors in the RCP2 series

ROBO Cylinder High Thrust Type
RCP2-RA10C

ROBO Cylinder High Speed Type
RCP2-HS8C/HS8R

ROBO Cylinder waterproof type
RCP2W-SA16C

Simple operation, high performance/maintenance free/energy savings

Various functions are executable using an easy operation

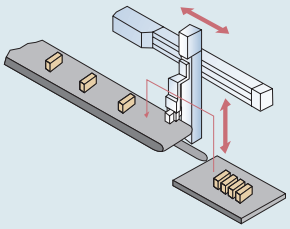
Three types of operating patterns

Switch to one of three movement patterns depending on payload being moved.

【Positioning operation】

Objects attached to the axis sliders and rods can be moved, and positioned with a positioning repeatability of ±0.02m.

(Applications) Conveying work, positioning cameras, etc.

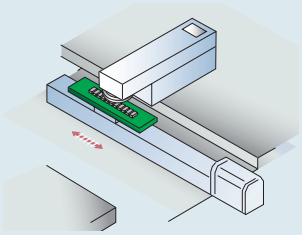


Used for pick and place unit

【Pitch feed operation】

Rather than positioning by coordinate values from home, the distance to move is specified with the current position as the starting point.

(Applications) raising/lowering stocker, pallet movement etc.

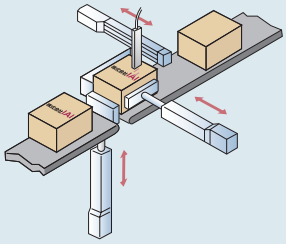


Feed work parts in marking process

【Push-motion operation】

Like an air cylinder, it can be retained with the rod pressed against the work.

(Applications) work press fitting, clamping, etc.



Pressing of work part

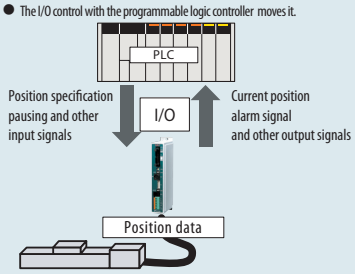
Three kinds of locating methods

Select from among 3 kinds of I/O for high-ranked equipment and controllers.

【Position movement】

As with a solenoid valve, movement to the preset position is controlled just by ON/OFF signal.

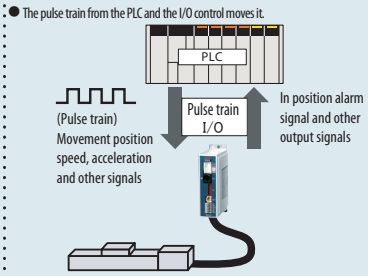
● The I/O control with the programmable logic controller moves it.



【Pulse train input】

Even if the movement destination is not pre-entered into the controller, the movement position, speed, and acceleration can all be freely controlled.

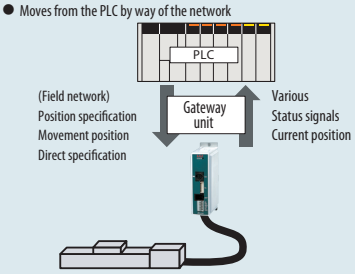
● The pulse train from the PLC and the I/O control moves it.



【Field Network】

Movement can be specified through DeviceNet and CC-Link networks Both position specified movement and movement by direct specification of coordinates values are possible.

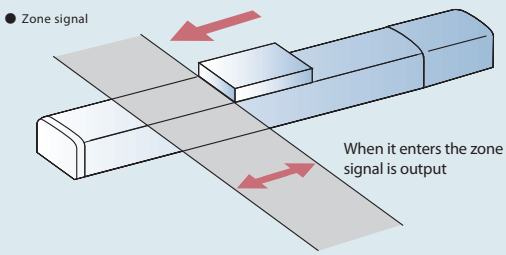
● Moves from the PLC by way of the network



Signal output at arbitrary position through zone signal

With the zone signal function, a range (zone) is freely set between strokes, and a signal is output when the slider moves into the range. This is effective when painting, for example, to output a signal at an arbitrary position. (Up to 2 zone outputs possible) In addition, the P zone signal has been newly set. P zone can be set for each position. The output signal is shared, but up to 256 zone ranges can be set.

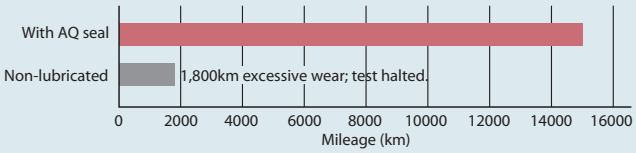
● Zone signal



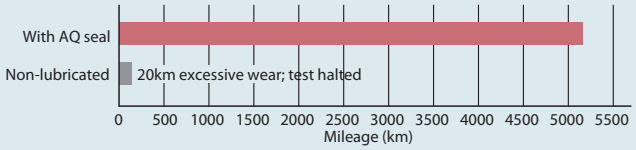
Long-term maintenance free operation is achieved thanks to AQ seal

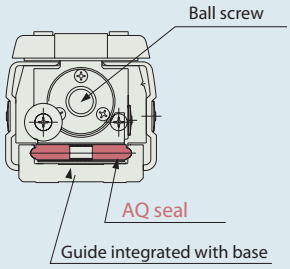
The AQ seal is a lubrication unit that uses lubricating oil solidified in resin as its material. Lubricating oil is supplied by pressing the AQ seal against the guide and ball screw surfaces (steel ball rolling surface). This creates a synergistic effect in combination with grease, enabling long-term maintenance-free operation.

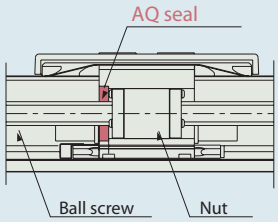
■Guide lifetime (Depends on the presence of the AQ seal)



■Lifetime of ball screw (Depends on the presence of the AQ seal)







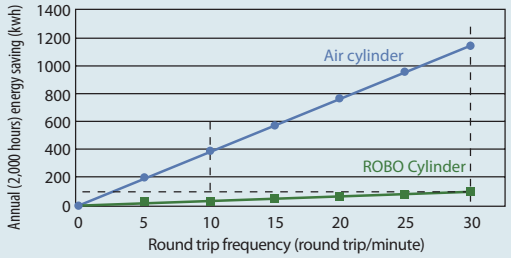
AQ seal effectiveness

- The frequency of troublesome greasing operations is reduced to the absolute minimum. (Achieves maintenance free operation for 5,000 km running length or 3 years)
- This is effective for locations where greasing is difficult due to the structure of the device.
- Environmentally friendly, since extra grease is not needed.

Running costs are between 1/3 to 1/10 that of an air cylinder

With air cylinders, a compressor is needed to create compressed air. That air reaches the air cylinder through piping and is then converted into linear power, a process that results in a substantial loss of energy. On the other hand, with the ROBO Cylinder, the rotational power of the electrically driven motor is converted mechanically into linear power. Because of this, the energy loss is extremely small, and the running costs (electricity bills) are only 1/3 to 1/10 that for an air cylinder (values measured by our company).

Compressor: 0.75kW air cylinder: φ25 stroke: 300
ROBO Cylinder: RCP-RMAI-H-3200 Operating conditions: load conditions and operating conditions are the same



The ROBO Cylinder is already highly energy efficient in comparison to air cylinders
But two even more energy efficient functions have been added.

■Full servo control system

This mode reduces the current of the pulse motor used by the RCP2 series to between 1/2 and 1/4 when stopped. This is effective for substantially reducing power consumption during long stops at the standby position.

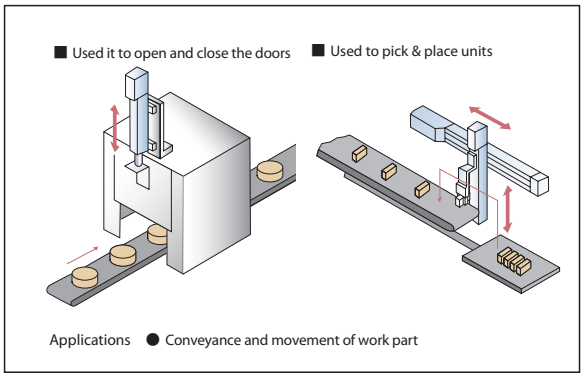
■Automatic servo OFF method

When in position, servo automatically turns OFF after a certain period has elapsed. Power can be conserved in servo OFF condition, since there is no holding current. (A requirement is that no external force be applied in servo OFF condition.)

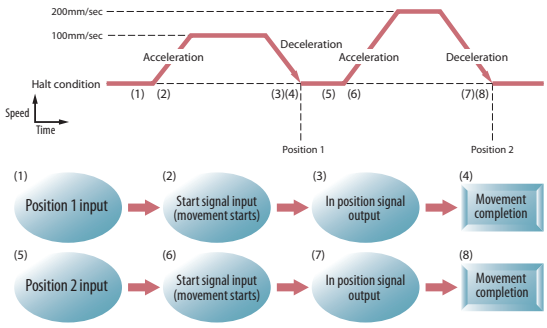
Explanation of Functions

Movement pattern 1 Positioning operation

Work part placed on the axis slider or rod is moved and positioned with a positioning repeatability of +/- 0.02mm.



Operation example



[Features]

- Capable of positioning up to 512 points.
- Can set each position for acceleration/deceleration.
- The in position signal can be output at any position ahead of the specified position, depending on the positioning band settings.
- Acceleration and the deceleration can be separately set.
- Speed can be changed without stopping while moving.

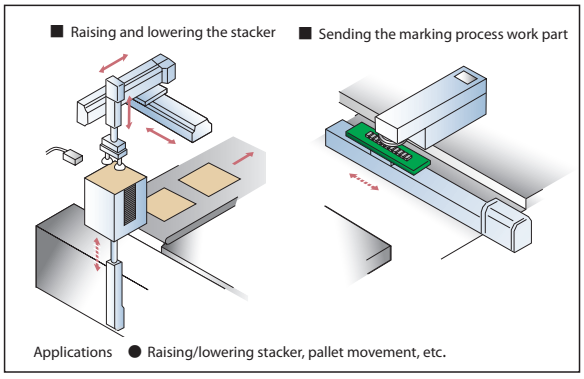
Position Data Table

(set by either teaching pendant or PC software)

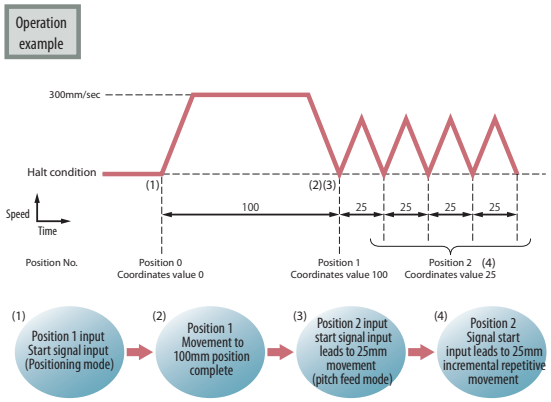
No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Pressing (%)	Positioning band (mm)
1	100	100	0.3	0.3	0	10
2	200	200	0.3	0.3	0	20

Movement pattern 2 Pitch-Feed Function (Incremental Movement Function)

In addition to using the coordinates from the starting point (home) for positioning, it can also use its present position as the starting point to move specified distance.



Operation example



[Features]

- When performing continuous movement with uniform pitch, repetitive movement is possible with data for a single position, even if a number of positioning points are unspecified.
- The pitch movement quantity is easily specified by the position data table.

Position Data Table

(set by either teaching pendant or PC software)

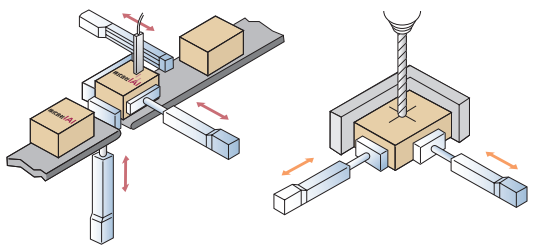
No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Pressing (%)	Positioning band (mm)
1	100	300	0.3	0.3	0	0.1
2	= 25	300	0.3	0.3	0	0.1

(Teaching Pendant)
'= is displayed at the pitch sending mode.

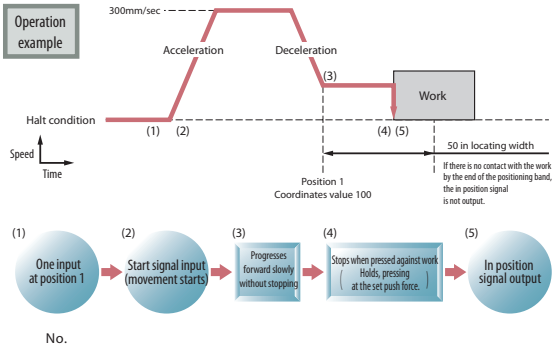
Movement pattern 3 Pressing operation

A rod can stay pressed up against the work part the same way an air cylinder can.

■ Push work part ■ Fixation of work part

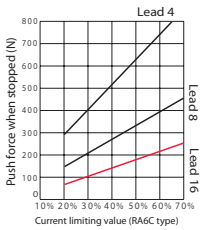


Applications ● Work part detection, press fitting, clamp work parts, etc.



[Features]

- Because the in position signal is output when pressed against the work part, it can be used in combination with the zone signal for work part recognition.
- The push force against the work part (pressing force) can be adjusted by changing the position data table settings values.



Position Data Table

(set by either teaching pendant or PC software)

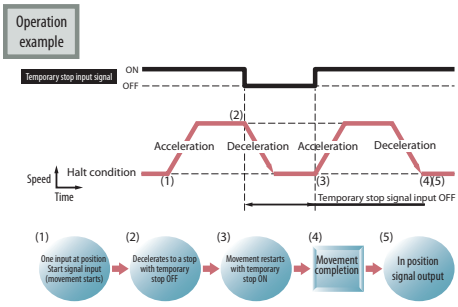
No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Pressing (%)	Positioning band (mm)
1	100	300	0.3	0.3	50	50

Caution Push force precision when stopped is not guaranteed. This is merely a rough estimate. Caution: If the push force is even slightly excessive, pressing errors may occur due to sliding resistance etc.

Temporary stop input

The slider does the deceleration stop with the external signal while moving.

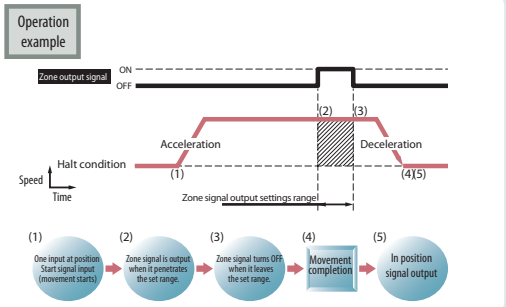
When the temporary stop input is cut, it may decelerate to a stop due to interlock settings with peripherals (collision prevention). When the temporary stop is on, the remaining movement restarts. From the viewpoint of safety, a B contact is used for the signal (operates with signal OFF).



Zone output

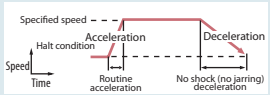
When the slider goes into the set range, the signal is output.

During movement, since the signal can be output at any position (range set by parameter), it can be used for a variety of applications. These include danger area setting, and tact shortening.



Acceleration and Deceleration Can Be Set Differently

ROBO Cylinder acceleration and deceleration settings are performed using a position data table. The acceleration and deceleration can be set separately, and it can decelerate slowly with no shock (jerking) when stopping.



Position data table

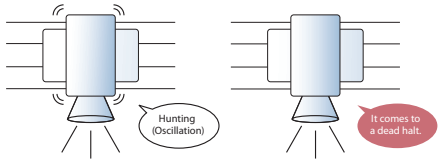
(set by either teaching pendant or PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Pressing (%)	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)

Since there are none of the microvibrations that occur when conventional servo motors stop, it is effective for measurements using a camera.

■ Past AC servo ■ Robo Cylinder (ERC2/RCP2)



Standard ROBO Cylinder Selection Method

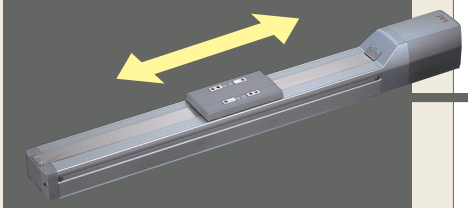
Standard ROBO Cylinder selection progresses through the following STEPS.

STEP 1

Selection of actuator type

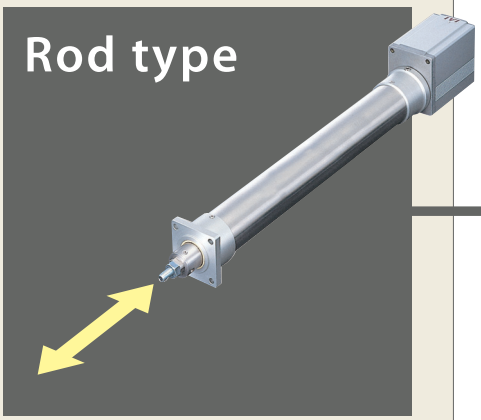
Select either slider type or rod type to suit your application.

Slider type



[Primary applications]
◎Jig and work positioning
◎Product conveyance

Rod type



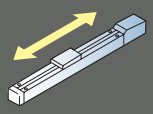
[Primary applications]
◎push and hold
◎press fitting
◎raising/lowering
◎vertical conveyance

STEP 2

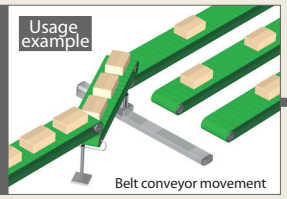
Select by operating direction/application

Select by operating direction Select either vertical or horizontal use.

Horizontal use

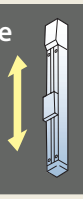


Usage example

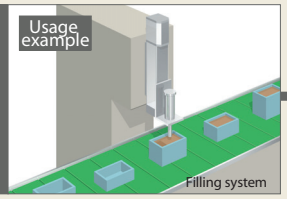


Belt conveyor movement

Vertical use



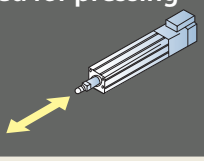
Usage example



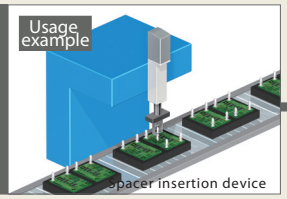
Filling system

Select by application Select whether to use for pressing or conveyance.

Used for pressing

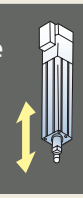


Usage example

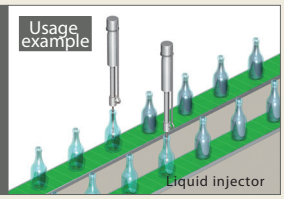


Spacer insertion device

Used for conveyance



Usage example



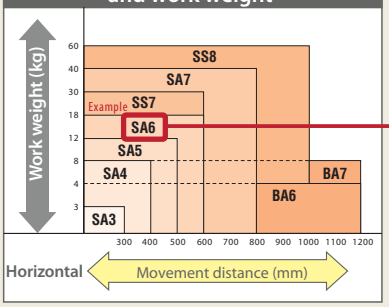
Liquid injector

STEP 3

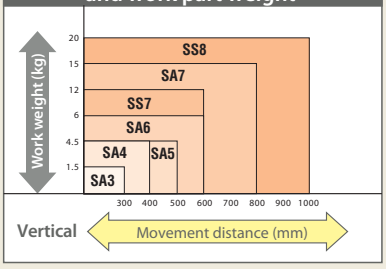
Type selection

Select a type ideal for the conveyance movement distance and the work weight (push force/thrust).

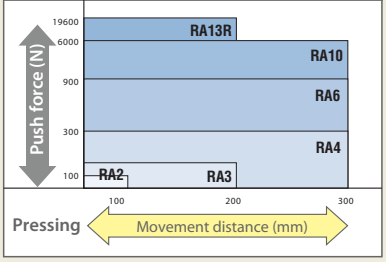
(Horizontal) movement distance and work weight



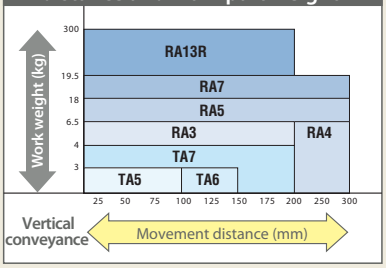
(Vertical) movement distance and work part weight



(Pressing) movement distance and push force



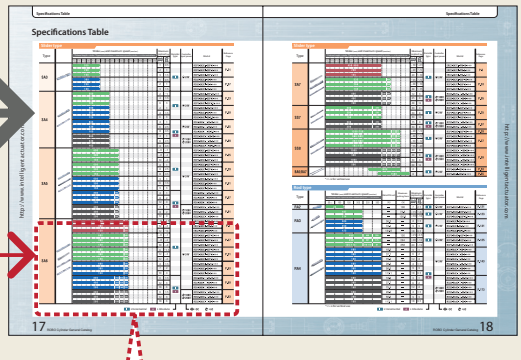
(Vertical conveyance) movement distance and work part weight

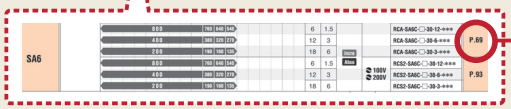


STEP 4

Check the speed in the Specifications Table

See P17 to P22

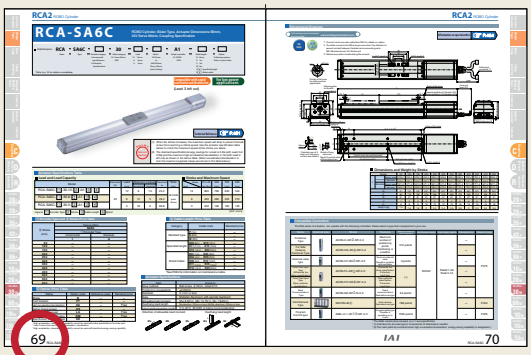




Detailed pages

STEP 5

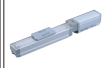
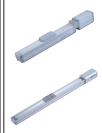
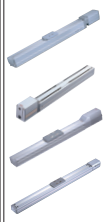
To the document page



Detailed pages

Specifications Table

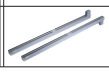
Slider type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use (50 100 150 200 250 300 350 400 450 500 550 600 700 800 900 1000 1100 1200)	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
SA3		300	1	0.5	I	24V	RCP3-SA3C-I-28P-6-***	P.21
		200	2	1			RCP3-SA3C-I-28P-4-***	
		100	3	1.5			RCP3-SA3C-I-28P-2-***	
		300	1	0.5			RCA2-SA3C-I-10-6-***	P.57
		200	2	1			RCA2-SA3C-I-10-4-***	
		100	3	1.5			RCA2-SA3C-I-10-2-***	
SA4		500	2	~1	I	24V	RCP3-SA4C-I-35P-10-***	P.23
		250	4	1.5			RCP3-SA4C-I-35P-5-***	
		125	6	3			RCP3-SA4C-I-35P-2.5-***	
		500	2	1			RCA2-SA4C-I-20-10-***	P.59
		250	4	1.5			RCA2-SA4C-I-20-5-***	
		125	6	3			RCA2-SA4C-I-20-2.5-***	
		665	4	1			RCA-SA4C-□-20-10-***	P.65
		330	6	2.5		24V	RCA-SA4C-□-20-5-***	
		165	8	4.5	I		RCA-SA4C-□-20-2.5-***	
		665	4	1	A	100V 200V	RCS2-SA4C-□-20-10-***	P.89
		330	6	2.5			RCS2-SA4C-□-20-5-***	
		165	8	4.5			RCS2-SA4C-□-20-2.5-***	
SA5		600	~6	~1			RCP3-SA5C-I-42P-12-***	P.25
		300	~8	~2			RCP3-SA5C-I-42P-6-***	
		150	10	~4			RCP3-SA5C-I-42P-3-***	
		600	4	1			RCP2-SA5C-I-42P-12-***	P.29
		300	8	2.5	I		RCP2-SA5C-I-42P-6-***	
		150	8	4.5			RCP2-SA5C-I-42P-3-***	
		600	3	1		24V	RCA2-SA5C-I-20-12-***	P.61
		300	6	1.5			RCA2-SA5C-I-20-6-***	
		150	9	3			RCA2-SA5C-I-20-3-***	
		800 760	4	1			RCA-SA5C-□-20-12-***	P.67
		400 380	8	2			RCA-SA5C-□-20-6-***	
		200 190	12	4	I		RCA-SA5C-□-20-3-***	
		800 760	4	1	A	100V 200V	RCS2-SA5C-□-20-12-***	P.91
		400 380	8	2			RCS2-SA5C-□-20-6-***	
		200 190	12	4			RCS2-SA5C-□-20-3-***	
SA6		600 515	~6	~1.5			ERC2-SA6C-I-PM-12-***	P.3
		300 255	12	~3			ERC2-SA6C-I-PM-6-***	
		150 125	12	~6			ERC2-SA6C-I-PM-3-***	
		600 540	~6	~1			RCP3-SA6C-I-42P-12-***	P.27
		300 270	~8	~2			RCP3-SA6C-I-42P-6-***	
		150 135	10	~4			RCP3-SA6C-I-42P-3-***	
		600 540	6	~1.5	I		RCP2-SA6C-I-42P-12-***	P.31
		300 270	12	~3		24V	RCP2-SA6C-I-42P-6-***	
		150 135	12	~6			RCP2-SA6C-I-42P-3-***	
		600 540	4	1.5			RCA2-SA6C-I-30-12-***	P.63
		300 270	7	2			RCA2-SA6C-I-30-6-***	
		150 135	10	4			RCA2-SA6C-I-30-3-***	
		800 760 640 540	6	1.5			RCA-SA6C-□-30-12-***	P.69
		400 380 320 270	12	3			RCA-SA6C-□-30-6-***	
		200 190 160 135	18	6	I		RCA-SA6C-□-30-3-***	
		800 760 640 540	6	1.5	A	100V 200V	RCS2-SA6C-□-30-12-***	P.93
		400 380 320 270	12	3			RCS2-SA6C-□-30-6-***	
		200 190 160 135	18	6			RCS2-SA6C-□-30-3-***	

I = Incremental A = Absolute

=DC =AC

Slider type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
SA7		450〈400〉	~10	~2.5	I	⊖ 24V	ERC2-SA7C-I-PM-16-***	P.5
		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-***	P.33
		266 240	~40	~10			RCP2-SA7C-I-56P-8-***	
		133 120	40	~15			RCP2-SA7C-I-56P-4-***	
		800 640 480	12	3	I A	⊖ 100V ⊖ 200V	RCS2-SA7C-□-60-16-***	P.95
		400 320 240	25	6			RCS2-SA7C-□-60-8-***	
		200 160 120	40	12			RCS2-SA7C-□-60-4-***	
SS7		600 470	30	4	I	⊖ 24V	RCP2-SS7C-I-42P-12-***	P.35
		300 230	30	8			RCP2-SS7C-I-42P-6-***	
		150 115	30	12			RCP2-SS7C-I-42P-3-***	
		600 470	15	4	I A	⊖ 100V ⊖ 200V	RCS2-SS7C-□-60-12-***	P.97
		300 230	30	8			RCS2-SS7C-□-60-6-***	
SS8		1200〈750〉 1000 〈750〉 860 〈750〉	~20	~3	I	⊖ 24V	RCP2-HS8C-I-86P-30-***	P.39
		666〈600〉 625 〈600〉 515	~40	~5			RCP2-SS8C-I-56P-20-***	P.37
		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	I A	⊖ 100V ⊖ 200V	RCS2-SS8C-□-100-20-***	P.99
		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	-	I	⊖ 24V	RCP2-BA6-I-42P-54-***	P.53
		1500	8	-			RCP2-BA7-I-42P-54-***	P.55

*<> is for vertical use

Rod type

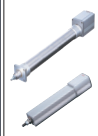
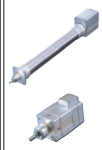
Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use	Rated thrust (N)	Maximum pushing force (N)	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
RA2		25	—	100	7	2.5	I	⊖ 24V	RCP2-RA2C-I-20P-1-***	P.121
RA3		187	—	73.5	~15	~6	I	⊖ 24V	RCP2-RA3C-I-28P-5-***	P.123
		114	—	156.8	~30	~10			RCP2-RA3C-I-28P-2.5-***	
		500	36.2	—	4	1.5			RCA-RA3C-I-20-10-***	P.141
		250	72.4	—	9	3	I	⊖ 24V	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	I	⊖ 24V	RCP2-RA4C-I-42P-10-***	P.125
		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		⊖ 24V	RCA-RA4C-□-20-12-***	P.143
		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	I		RCA-RA4C-□-30-3-***	
		600	18.9	—	3	1	A		RCS2-RA4C-□-20-12-***	P.173
		300	37.7	—	6	2			RCS2-RA4C-□-20-6-***	
		150	75.4	—	12	4		⊖ 100V ⊖ 200V	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-***	

*<> is for vertical use

I = Incremental A = Absolute ⊖ =DC ⊖ =AC

Specifications Table

Rod type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke, <> is for vertical use	Rated thrust (N)	Maximum pushing force (N)	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
		50 100 150 200 250 300 mm								
RA5		800 755	63.8	—	12	2	I A	100V 200V	RCS2-RA5C-□-60-16-***	P.175
		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	I	24V	ERC2-RA6C-I-PM-12-***	P.7
		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			RCP2-RA6C-I-56P-16-***	P.127
		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			ERC2-RA7C-I-PM-16-***	P.9
		250〈200〉	—	441	~50	~17.5		24V	ERC2-RA7C-I-PM-8-***	
		125	—	873	~55	~25			ERC2-RA7C-I-PM-4-***	
		600 505	85.3	—	10	2.5			RCS2-RA7AD-I-60-12-***	P.179
		300 250	169.5	—	20	7			RCS2-RA7AD-I-60-6-***	
		150 125	340.1	—	40	15			RCS2-RA7AD-I-60-3-***	
		600 505	141.1	—	15	5.5	I		RCS2-RA7AD-I-100-12-***	
		300 250	283.2	—	30	12.5		100V 200V	RCS2-RA7AD-I-100-6-***	
		800	105.8	—	10	3.5			RCS2-RA7BD-I-100-16-***	P.181
		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			RCS2-RA7BD-I-150-16-***	
		400	318.5	—	35	14.5			RCS2-RA7BD-I-150-8-***	
RA10		250〈167〉	—	1500	~80	~80	I	24V	RCP2-RA10C-I-86P-10-***	P.129
		125	—	3000	150	~100			RCP2-RA10C-I-86P-5-***	
		63	—	6000	300	~150			RCP2-RA10C-I-86P-2.5-***	
RA13R		85 120 125	5106	9800	400	200	I A	100V 200V	RCS2-RA13R-□-750-2.5-***	P.187
		62	10211	19600	500	300			RCS2-RA13R-□-750-1.25-***	

*<> is for vertical use

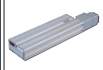
Table type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke, <> is for vertical use	Rated thrust (N)	Maximum pushing force (N)	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
		25 50 75 100 125 150 175 200 mm								
TA5		465〈400〉	—	34	~2	~1	I	24V	RCP3-TA5C-I-35P-10-***	P.215
		250	—	68	~4	~1.5			RCP3-TA5C-I-35P-5-***	
		125	—	136	~6	~3			RCP3-TA5C-I-35P-2.5-***	
		465〈400〉	34	—	2	1			RCA2-TA5C-I-20-10-***	P.221
		250	68	—	3.5	2			RCA2-TA5C-I-20-5-***	
		125	137	—	5	3			RCA2-TA5C-I-20-2.5-***	
TA6		560〈500〉	—	47	~4	~1	I	24V	RCP3-TA6C-I-42P-12-***	P.217
		300	—	95	~6	~2			RCP3-TA6C-I-42P-6-***	
		150	—	189	~8	~4			RCP3-TA6C-I-42P-3-***	
		560〈500〉	17	—	2	0.5			RCA2-TA6C-I-20-12-***	P.223
		300	34	—	4	1.5			RCA2-TA6C-I-20-6-***	
		150	68	—	6	3			RCA2-TA6C-I-20-3-***	
TA7		600〈580〉	—	47	~6	~1	I	24V	RCP3-TA7C-I-42P-12-***	P.219
		300	—	95	~8	~2			RCP3-TA7C-I-42P-6-***	
		150	—	189	~10	~4			RCP3-TA7C-I-42P-3-***	
		600〈580〉	26	—	4	1			RCA2-TA7C-I-30-12-***	P.225
		300	53	—	6	2.5			RCA2-TA7C-I-30-6-***	
		150	105	—	8	4			RCA2-TA7C-I-30-3-***	

*<> is for vertical use

I = Incremental A = Absolute =DC =AC

Arm type/Flat type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use 50mm	100	150	200	250	300	Thrust (N)	Maximum payload (kg) Horizontal	Vertical	Encoder type	Controller input power	Model	Reference Page
A4R		330						39.2	—	2.5	I A	⊖ 24V	RCA-A4R-□-20-10-***	P.227
		165						78.4	—	4.5			RCA-A4R-□-20-5-***	
		330						39.2	—	2.5		≂ 100V ≂ 200V	RCS2-A4R-□-20-10-***	P.233
		165						78.4	—	4.5			RCS2-A4R-□-20-5-***	
A5R		400						33.3	—	2	I A	⊖ 24V	RCA-A5R-□-20-12-***	P.229
		200						65.7	—	4			RCA-A5R-□-20-6-***	
		400						33.3	—	2		≂ 100V ≂ 200V	RCS2-A5R-□-20-12-***	P.235
		200						65.7	—	4			RCS2-A5R-□-20-6-***	
A6R		400						48.4	—	3	I A	⊖ 24V	RCA-A6R-□-30-12-***	P.231
		200						96.8	—	6			RCA-A6R-□-30-6-***	
		400						48.4	—	3		≂ 100V ≂ 200V	RCS2-A6R-□-30-12-***	P.237
		200						96.8	—	6			RCS2-A6R-□-30-6-***	
F5D		800						63.8	—	2	I A	≂ 100V ≂ 200V	RCS2-F5D-□-60-16-***	P.239
		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) 10mm	14	19	20	40	(60)	(80)	100	(120)	(200)	Maximum gripping force (N)	Encoder type	Controller input power	Model	Reference Page
GRS		33.3										21		⊖ 24V	RCP2-GRS-I-20P-1-10	P.243
GRM			36.7									80			RCP2-GRM-I-28P-1-14	P.245
GR8		(60cpm)										45.1	I	≂ 100V ≂ 200V	RCS2-GR8-I-60-5-***	P.255
3-Finger type				200								18			RCP2-GR3LS-I-28P-30-19	P.247
				200								51		⊖ 24V	RCP2-GR3LM-I-42P-30-19	P.249
3-Finger slide type		40										22			RCP2-GR3SS-I-28P-30-10	P.251
			50									102			RCP2-GR3SM-I-42P-30-14	P.253

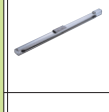
Rotary type

Type		Oscillation angle (degrees) and maximum speed (degrees/sec) 300 degrees	330	360	Maximum Torque (Nm)	Encoder type	Controller input power	Model	Reference Page
RTB-20			600		1.1			RCP2-RTB-I-28P-20-330	P.257
RTB-30			400		1.7			RCP2-RTB-I-28P-30-330	
RTBL-20				600	1.1			RCP2-RTBL-I-28P-20-360	
RTBL-30				400	1.7		⊖ 24V	RCP2-RTBL-I-28P-30-360	
RTC-20			600		1.1	I		RCP2-RTC-I-28P-20-330	P.259
RTC-30			400		1.7			RCP2-RTC-I-28P-30-330	
RTCL-20				600	1.1			RCP2-RTCL-I-28P-20-360	
RTCL-30				400	1.7			RCP2-RTCL-I-28P-30-360	
RT6		500			2.4			RCS2-RT6-I-60-18-300	P.261
RT6R		500			2.4		≂ 100V ≂ 200V	RCS2-RT6R-I-60-18-300	P.263
RT7		500			0.764			RCS2-RT7R-I-60-4-300	P.265

I = Incremental A = Absolute ⊖ =DC ≂ =AC

Specifications Table

Cleanroom type

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use (50 mm / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 700 / 800 / 900 / 1000)	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Referenc Page
SA4		665	4	1	I / A	24V	RCACR-SA4C-□-20-10-***	P.281
		330	6	2.5			RCACR-SA4C-□-20-5-***	
		165	8	4.5			RCACR-SA4C-□-20-2.5-***	
		665	4	1	I / A	100V 200V	RCS2CR-SA4C-□-20-10-***	P.291
		330	6	2.5			RCS2CR-SA4C-□-20-5-***	
		165	8	4.5			RCS2CR-SA4C-□-20-2.5-***	
SA5		600	4	1	I	24V	RCP2CR-SA5C-I-42P-12-***	P.269
		300	8	2.5			RCP2CR-SA5C-I-42P-6-***	
		150	8	4.5			RCP2CR-SA5C-I-42P-3-***	
		800 760	4	1			RCACR-SA5C-□-20-12-***	P.283
		400 380	8	2			RCACR-SA5C-□-20-6-***	
		200 190	12	4	I / A		RCACR-SA5C-□-20-3-***	
		800 760	4	1		100V 200V	RCS2CR-SA5C-□-20-12-***	P.293
		400 380	8	2			RCS2CR-SA5C-□-20-6-***	
		200 190	12	4			RCS2CR-SA5C-□-20-3-***	
SA6		600 540	6	~1.5	I	24V	RCP2CR-SA6C-I-42P-12-***	P.271
		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			RCACR-SA6C-□-30-12-***	P.285
		400 380 320 270	12	3			RCACR-SA6C-□-30-6-***	
		200 190 160 135	18	6	I / A		RCACR-SA6C-□-30-3-***	
		800 760 640 540	6	1.5		100V 200V	RCS2CR-SA6C-□-30-12-***	P.295
		400 380 320 270	12	3			RCS2CR-SA6C-□-30-6-***	
		200 190 160 135	18	6			RCS2CR-SA6C-□-30-3-***	
SA7		533〈400〉 480〈400〉	~25	~5	I	24V	RCP2CR-SA7C-I-56P-16-***	P.273
		266 240	~30	~10			RCP2CR-SA7C-I-56P-8-***	
		133 120	30	~15			RCP2CR-SA7C-I-56P-4-***	
		800 640 480	12	3	I / A	100V 200V	RCS2CR-SA7C-□-60-16-***	P.297
		400 320 240	25	6			RCS2CR-SA7C-□-60-8-***	
		200 160 120	40	12			RCS2CR-SA7C-□-60-4-***	
SS7		600 470	~30	~4	I	24V	RCP2CR-SS7C-I-42P-12-***	P.275
		300 230	~30	~8			RCP2CR-SS7C-I-42P-6-***	
		150 115	~30	~12			RCP2CR-SS7C-I-42P-3-***	
		600 470	15	4	I / A	100V 200V	RCS2CR-SS7C-□-60-12-***	P.299
		400 230	30	8			RCS2CR-SS7C-□-60-6-***	
SS8		1200〈750〉 1000〈750〉 800〈750〉	~20	~3	I	24V	RCP2CR-HS8C-I-86P-30-***	P.279
		666〈500〉 625〈500〉 515〈500〉	~40	~5			RCP2CR-SS8C-I-56P-20-***	P.277
		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	I / A	100V 200V	RCS2CR-SS8C-□-100-20-***	P.301
		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-***	

*<> is for vertical use

I = Incremental A = Absolute =DC =AC

Dustproof and Splash-proof

Type		Stroke (mm) and maximum speed (mm/sec) *Column length = stroke *Figures in the column = maximum speed by stroke , <> is for vertical use	Rated thrust	Maximum pushing force	Maximum payload (kg) Horizontal	Maximum payload (kg) Vertical	Encoder type	Controller input power	Model	Reference Page
		50 100 150 200 250 300 350 400 450 500 550 600 650 700 (mm)	(N)	(N)						
SA16		180	—	N/A	~25	-	I	24V	RCP2W-SA16C-I-86P-8-***	P.309
		133	—	N/A	~35	-			RCP2W-SA16C-I-86P-4-***	
RA4		450〈250〉 (450/250) (350/250)	—	150	~25	~4.5		24V	RCP2W-RA4C-I-42P-10-***	P.311
		190 (190) (175)	—	284	~40	~12			RCP2W-RA4C-I-42P-5-***	
		125〈115〉 (115) (85)	—	358	40	~19	I		RCP2W-RA4C-I-42P-2.5-***	
RA6		320〈265〉	—	240	~40	~5			RCP2W-RA6C-I-56P-16-***	
		200	—	470	50	~17.5		24V	RCP2W-RA6C-I-56P-8-***	
		100	—	800	55	~26			RCP2W-RA6C-I-56P-4-***	
RA10		250〈167〉	—	1500	~80	~80			RCP2W-RA10C-I-86P-10-***	P.315
		125	—	3000	150	~100	I	24V	RCP2W-RA10C-I-86P-5-***	
		63	—	6000	300	~150			RCP2W-RA10C-I-86P-2.5-***	
RA3		500	36.2	—	4	1.5			RCAW-RA3□-I-20-10-***	P.317
		250	72.4	—	9	3	I	24V	RCAW-RA3□-I-20-5-***	
		125	144.8	—	18	6.5			RCAW-RA3□-I-20-2.5-***	
RA4		600	18.9	—	3	1			RCAW-RA4□-□-20-12-***	P.319
		300	37.7	—	6	2			RCAW-RA4□-□-20-6-***	
		150	75.4	—	12	4		24V	RCAW-RA4□-□-20-3-***	
		600	28.3	—	4	1.5			RCAW-RA4□-□-30-12-***	
		300	56.6	—	9	3			RCAW-RA4□-□-30-6-***	
		150	113.1	—	18	6.5	I		RCAW-RA4□-□-30-3-***	
		600	18.9	—	3	1	A		RCS2W-RA4□-□-20-12-***	P.321
		300	37.7	—	6	2			RCS2W-RA4□-□-20-6-***	
		150	75.4	—	12	4		100V 200V	RCS2W-RA4□-□-20-3-***	
		600	28.3	—	4	1.5			RCS2W-RA4□-□-30-12-***	
		300	56.6	—	9	3			RCS2W-RA4□-□-30-6-***	
		150	113.1	—	18	6.5			RCS2W-RA4□-□-30-3-***	

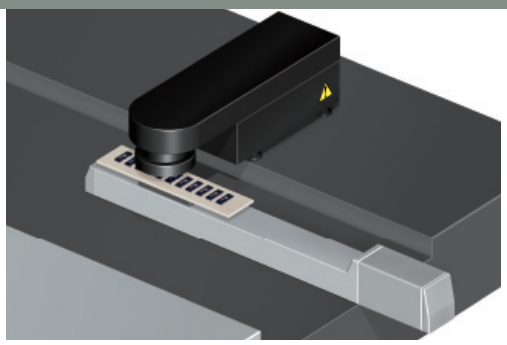
*<> is for vertical use

I = Incremental A = Absolute

=DC =AC

Marking machine

Pitch feed

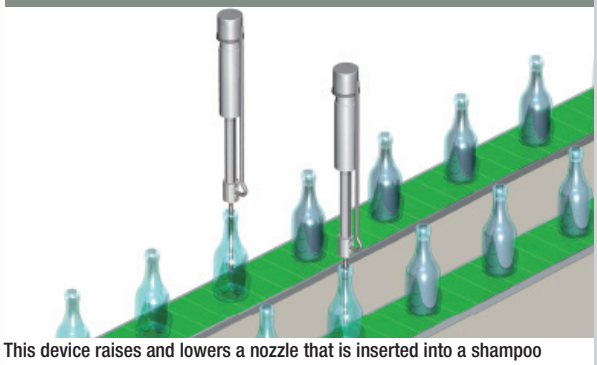


ROBO Cylinder's pitch feed mode is used to feed work pieces in a leather marking process.

Actuator	ERC2-SA6 (P3)	Controller	Built-in (P355)

Liquid injector

Positioning

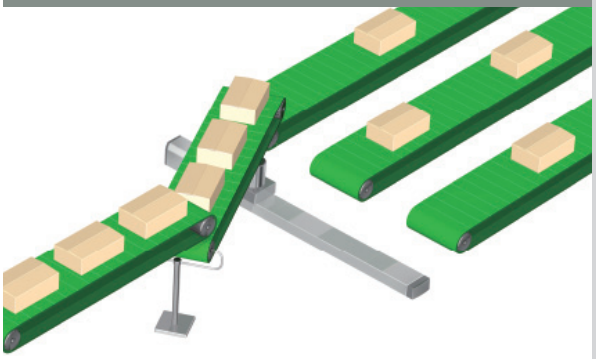


This device raises and lowers a nozzle that is inserted into a shampoo container while it inserts shampoo. This uses pulse train control to adjust speed.

Actuator	RCA-RA3C (P141)	Controller	ACON-PL (P375)

Belt conveyor movement

Positioning

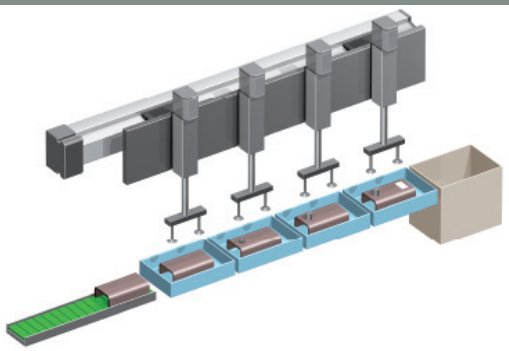


Work pieces can be sorted at high speeds.

Actuator	RCS2-SS8C (P99)	Controller	SCON-C (P385)

Parts transfer system

Positioning

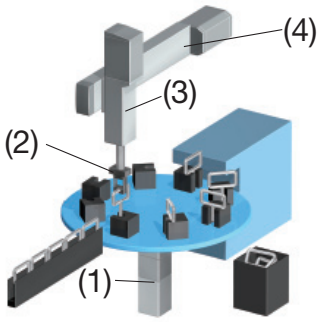


A ROBO Cylinder is used to move works to vertical positions on a transfer device to various processes to provide a compact line.

Actuator	RCA-RA4C (P143)	Controller	ACON-CY (P375)

Parts inspection system

Pitch feed

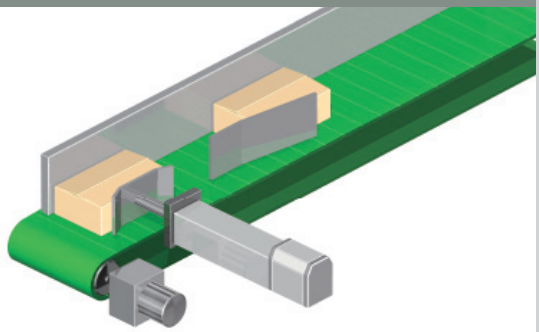


All operations including horizontal/vertical movement, gripping and rotation are performed with ROBO Cylinders alone. Connecting the controller to a field network also makes it possible to reduce wiring.

Actuator	(1) RCS2-RT6 (P261) (2) RCP2-GRM (P245) (3) RCP2-RA6C (P127) (4) RCP2-SS8C (P37)	Controller	PCON-SE (P365) SCON-C (P385)

Alignment of works

Pressing

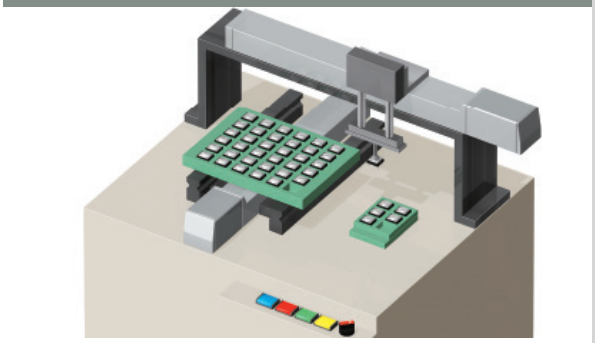


Work pieces are pushed against the wall using the push motion operation, and then aligned.

Actuator	RCP2-RA4C (P125)	Controller	PCON-CY (P365)

Pick & place machine

Pitch feed Positioning

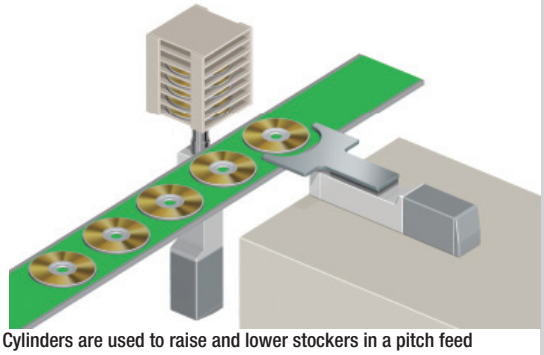


ROBO Cylinder is used on the X axis and Y axis.
This is a low-cost pick & place unit.

Actuator RCA-SA5C (P67) **Controller** ACON-C (P375)

Disc stacker

Pitch feed Positioning

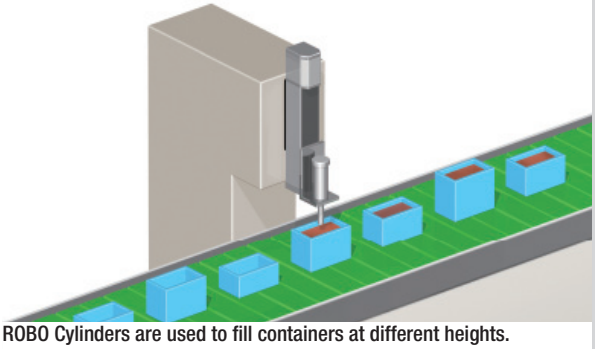


ROBO Cylinders are used to raise and lower stockers in a pitch feed operation. ROBO Cylinders use the acceleration/deceleration function for inserting stocker discs.

Actuator RCP2-RA6C (P127) RCP2-SA6C (P31) **Controller** ACON-CY (P375)

Filling system

Positioning

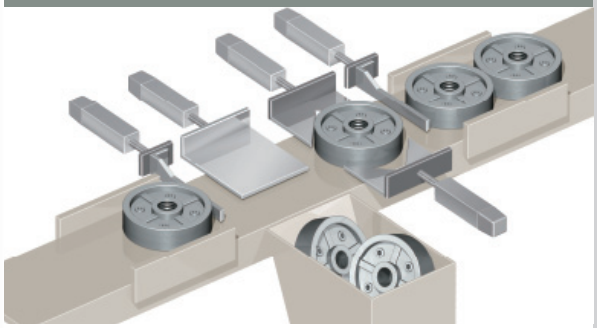


ROBO Cylinders are used to fill containers at different heights.
Control of multiple positions makes it possible to handle many item types.

Actuator RCP3-TA5C (P215) **Controller** PCON-C (P365)

Automotive screw inspection system

Positioning

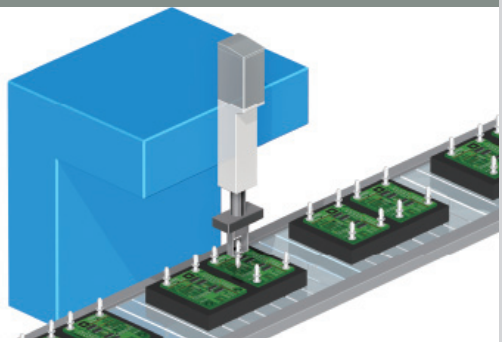


Multiple ROBO Cylinder axes are used in a screw inspection line, to help with positioning work pieces, positioning during inspection, and sorting defective parts. The controller uses XSEL5, and one controller can control all axes.

Actuator RCS2-RA5C (P175) **Controller** XSEL-P (P425)

Spacer insertion system

Pressing

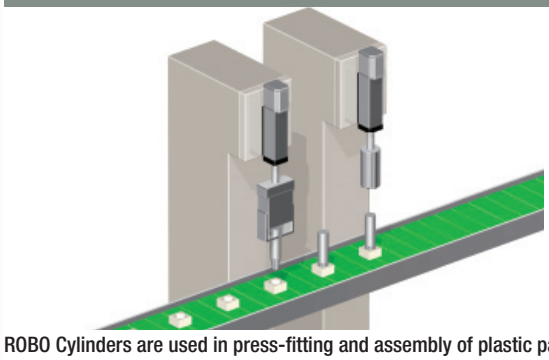


The push motion operation of the ROBO Cylinder is used to insert spacers in printed circuit boards.

Actuator RCP2-RA6C (P127) RCP2-GRS (P243) **Controller** PCON-C (P365)

Press-fitting system

Positioning Pressing



ROBO Cylinders are used in press-fitting and assembly of plastic parts. Assembly is done using positioning, and press-fitting is done using a push motion operation.

Actuator RCP2-RA4C (P125) RCP2-RA6C (P127) **Controller** PCON-C (P365)

Model Descriptions

Models in each ROBO Cylinder series are designated by the items shown below.
See the explanations that follow for information on each item. The range of selections for each item (lead, stroke, etc.) varies by type, so refer to the page for each type for more information.

Explanation of Items

Series	–	Type	–	Encoder type	–	Motor type	–	Lead	–	Stroke	–	Compatible Controllers	–	Cable length	–	Option
①		②		③		④		⑤		⑥		⑦		⑧		⑨

① Series

This indicates the 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 the following table.

Type	Material/guide	Actuator width	Motor coupling method
S (slider) B (belt) R (rod) H (high speed) T (table) A (arm) F (flat)	A (aluminum) S (steel) GS (single guide type) GD (double guide type)	2 (width 25) 3 (width 30) 4 (width 40/42/45) 5 (width 52/54/55) 6 (width 58/64) 7 (width 60/68) 7A (width 75, rod 30) 7B (width 75, rod 35) 8 (width 80) 10 (width 100) 16 (width 158)	C (coupling) D (built-in) R (reversing) U (motor underneath)

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

* The gripper and rotary types are unique models.

③ Encoder type

This indicates whether the encoder installed in the actuator is an absolute type or an incremental type.

A: Absolute type	Not required to return home because it retains the current position of the slider, even if the power is turned off or lost.
I: Incremental type	If the power is turned off or lost, the slider position data is also lost, so it needs to return home every time power is turned on.

④ Motor type

This shows the wattage of the motor installed in the actuator.
"PM" is specified for all models in the ERC2 Series.
The RCP3/RCP2Series uses a pulse motor, so this shows motor size (20P=20□motor), not the wattage.

⑤ Lead

This indicates the ball screw lead (distance the slider moves per one revolution of the ball screw).

⑥ Stroke

This indicates the controller for the actuator (operating range). (in units of mm or degrees.)

⑦ Compatible controllers (I/O type)

This indicates the controller types that can be connected. For the ERC2 Series, this indicates the I/O (input/output signal) type, since the controller is built-in.

⑧ Cable length

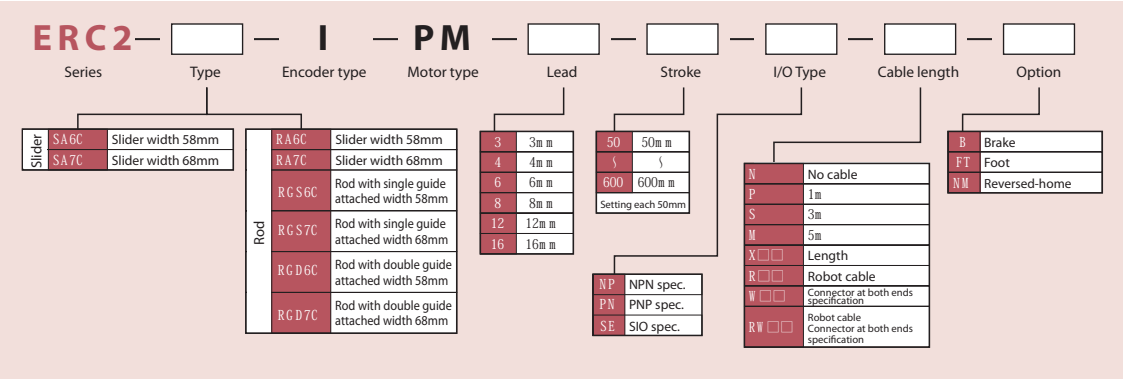
This indicates the length of the motor-encoder cable connecting the actuator and controller.

⑨ Option

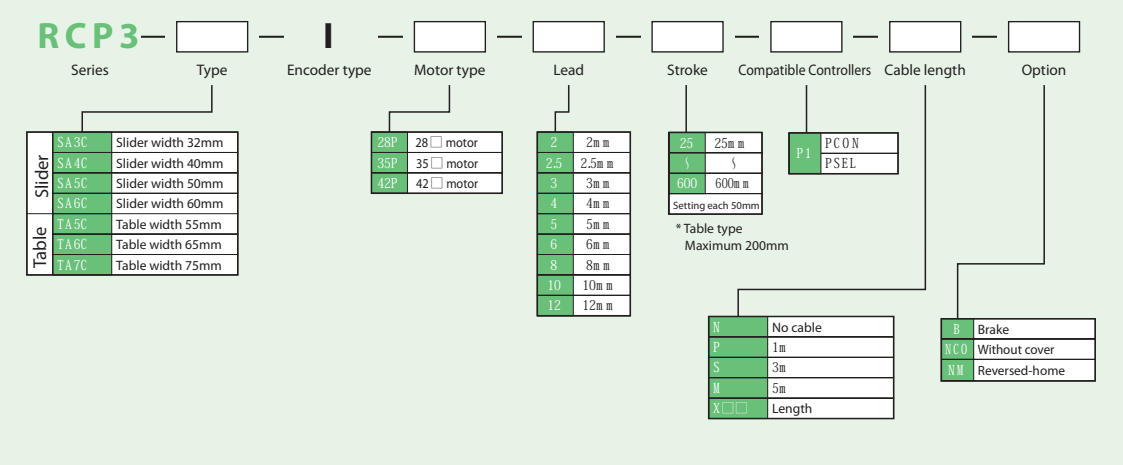
This indicates options that can be installed on the actuator. (See P437 to 446 of the Technical Reference for details.)
*If multiple options are selected, specify them in alphabetical order. (Example: A3-B-FT)

ERC2 Series/RCP3 Series

ERC2 series

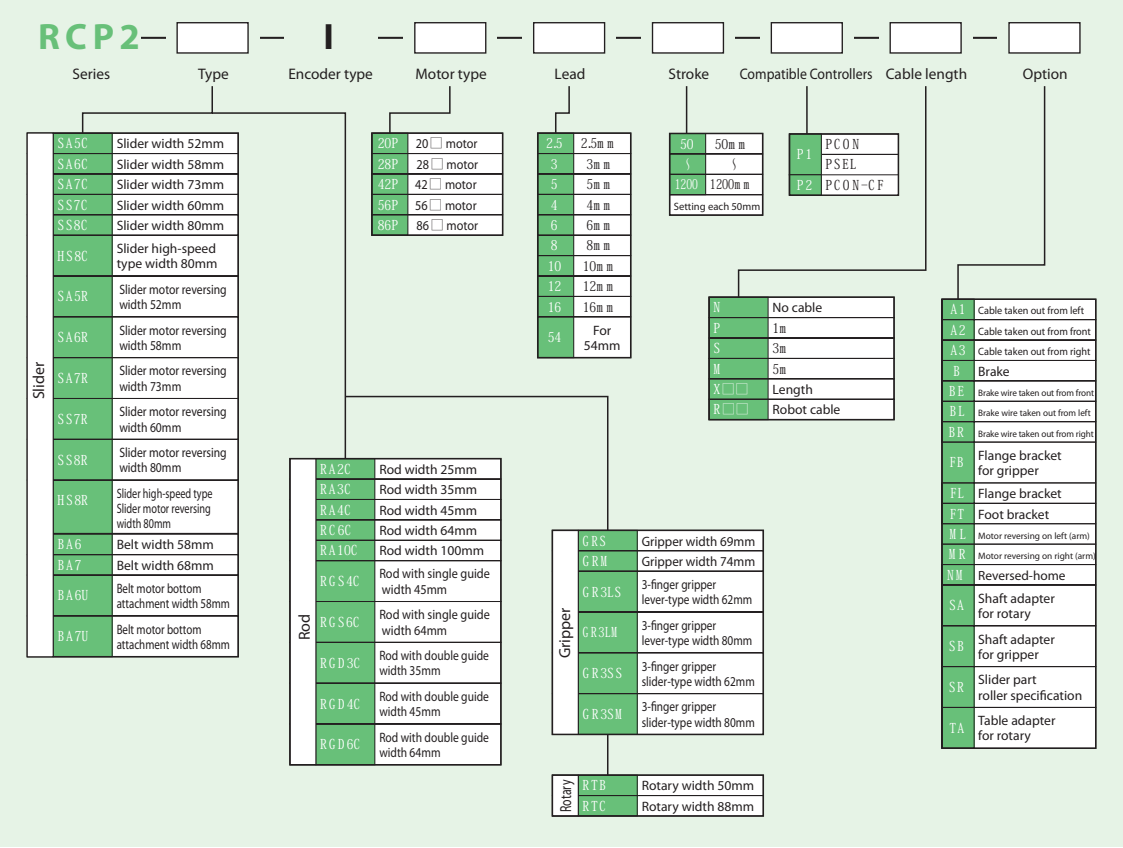


RCP3 series

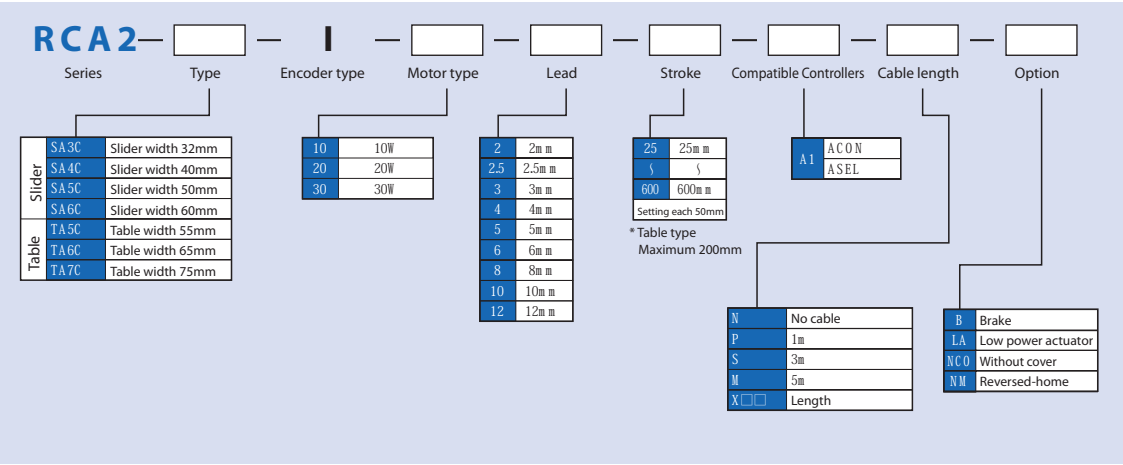


RCP2 Series/RCA Series

RCP2 series

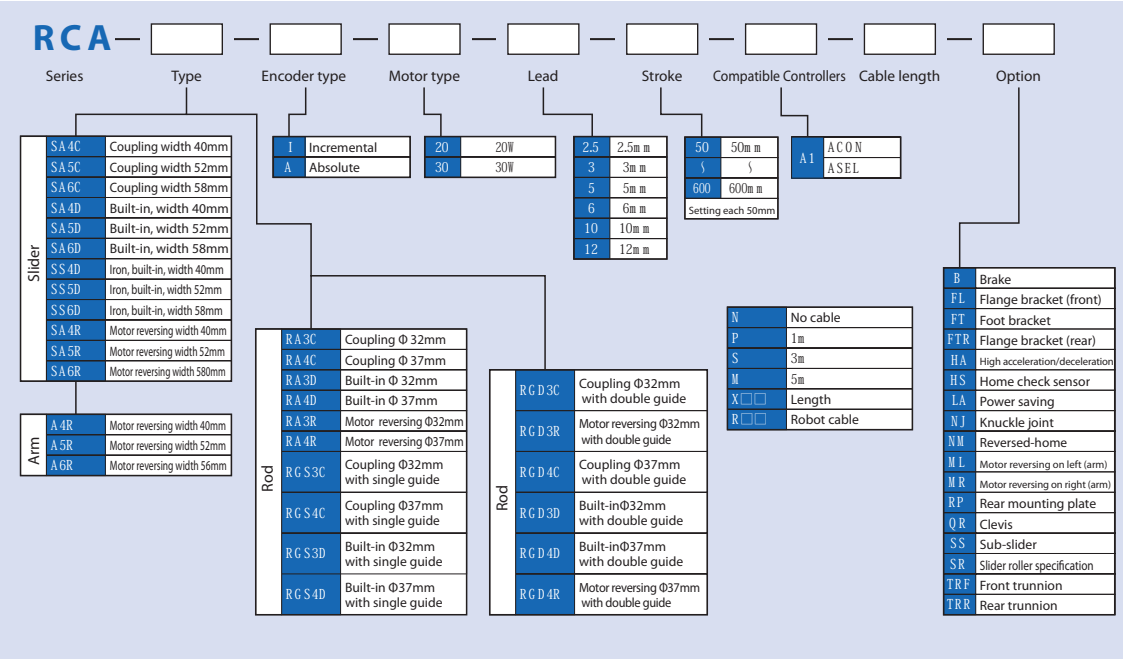


RCA2 series

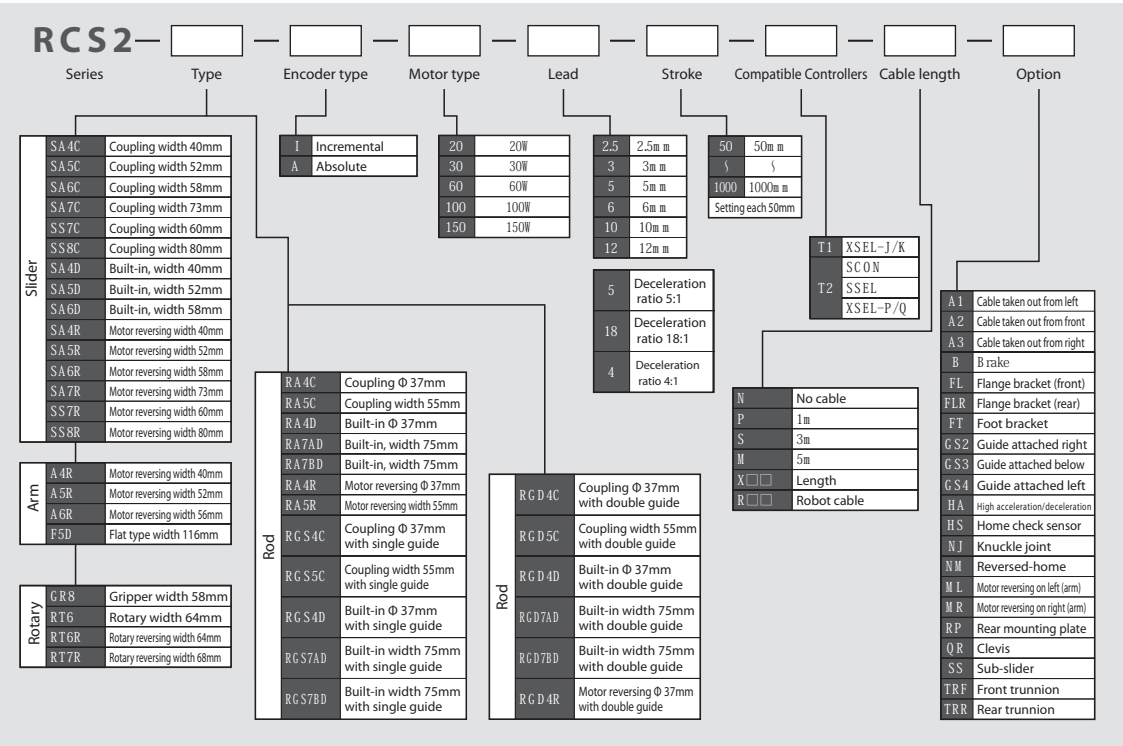


RCA2 Series/RCS2 Series

RCA series

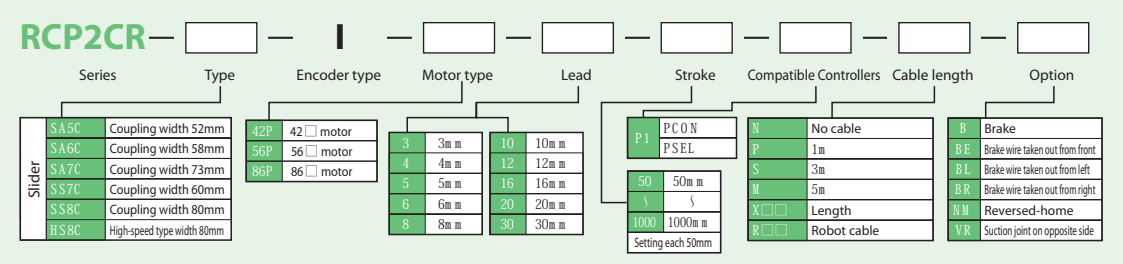


RCS2 series

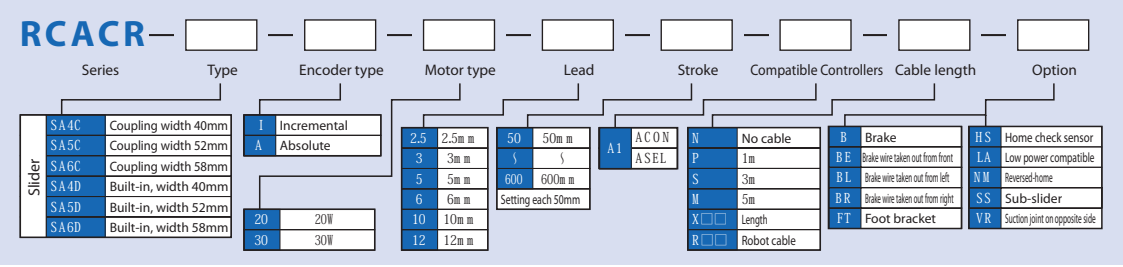


Cleanroom Series

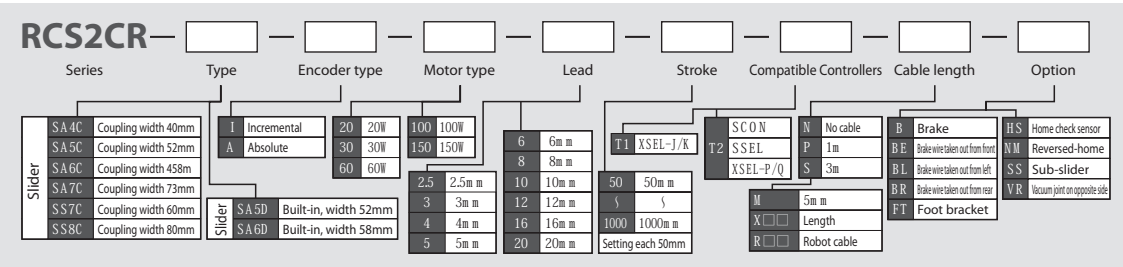
RCP2CR series



RCACR series

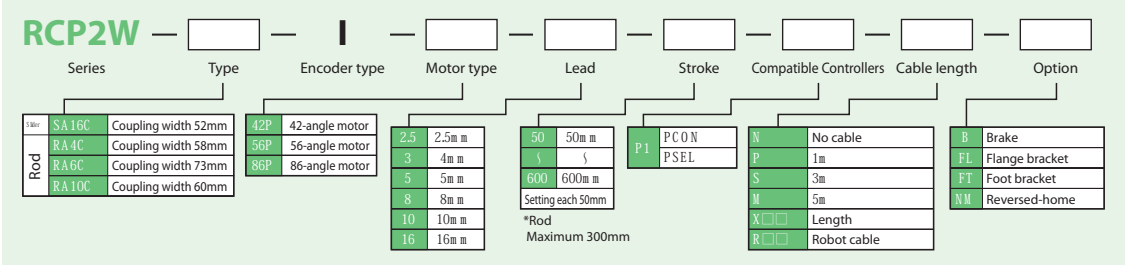


RCS2CR series

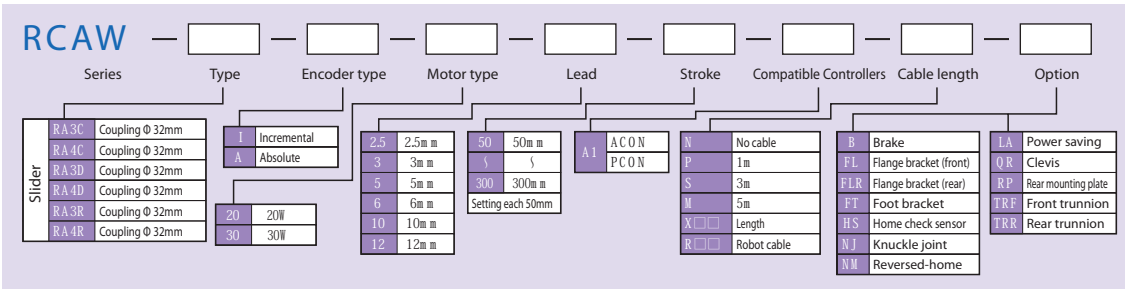


Dust-Proof and Splash-Proof Series

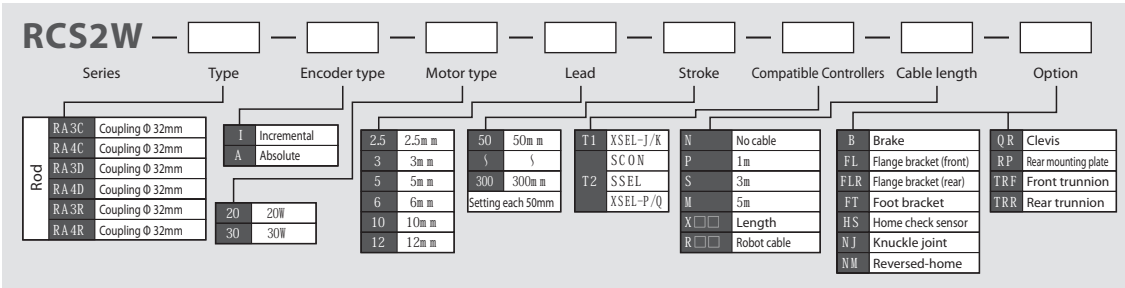
RCP2W Series



RCAW Series



RCS2W Series



ROBO Cylinder Series Cautions

■Note on Catalog Specifications (Common to All Models)

Speed

Speed refers to the set speed when moving the slider (or rod, arm, or output axis).
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. 473 to 486 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).
Please use the Specification List on P17-22 when selecting a model.
② The time it takes to reach a set speed differs depending on acceleration (deceleration).
③ If the travel distance is too short, the specified speed may not be achieved.
④ As the stroke length of the axis increases, the maximum speed decreases due to hazardous RPMs.
(See the tables Stroke & Maximum Speed on the various pages.)
⑤ If the RCP2 high-speed slider types (HS8C/HS8R) and RCP2 belt types (BA6/BA7) are moved at low speeds, vibration and resonant sound may occur, so be sure to use these at or above the minimum speeds listed on each page.
⑥ When calculating moving time, please take acceleration, deceleration, and convergence time into consideration, in addition to the time it takes to move at a specific speed.
⑦ The slider type, rod type, flat type, and gripper type can be programmed in increments of 1mm/sec.
The rotary type can be programmed in increments of 1 degree/sec.

Acceleration/ Deceleration

Acceleration is the rate of change in speed from a stopped state until the unit reaches the set speed.
Deceleration is the rate of change in speed from a set speed until the unit stops.
Both are specified in "G" in programs (0.3 G = 2,940 mm/sec2). *For the rotary type, 0.3G=2,940 degrees/sec2.

<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 0.3G (0.2G for leads of 2.5, 3, or 4, or the actuator is used for vertically). The load capacity is specified at the rated acceleration speed.(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 use the unit at or below the rated acceleration, or use a high-speed acceleration type that can handle accelerations of up to 1G maximum acceleration).
④ Acceleration can be set with a program, in increments of 0.01G.

Duty

IAI's actuators should be used at a duty of 50% or below.
If an actuator is used at levels over 50% duty, an excessive load error may occur.

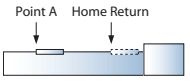
$$\text{Duty} = \frac{\text{Operating time}}{\text{Operating time} + \text{stop time}} \times 100$$

Positioning Repeatability

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

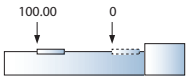
Positioning Repeatability

Accuracy 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.



Rod type (rod end vibration)

The standard rod type does not have vibration and load resistance on the rod ends taken into consideration, so if there is likely to be vibration on the rod ends, non-rotational accuracy, or if force will be applied in a direction other than the proper direction that the unit travels, make sure to use a type with a guide, or combine the unit with an external guide.

Motor

Motors will vary depending on series. ERC2/RCP2 (CR)/RCP3: Pulse motor
RCA (CR)/RCA2: Servo motor (24V RCS2 (CR): Servo motor (200V)
Some slight vibration may occur with the pulse motor and 24V servo motor when the motor is turned on while the servo is on.

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.

<Please note:>
-If the power is turned off and back on again, the incremental specification will need to return home. Pay attention to prevent contact between the slider and surrounding parts.
-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.

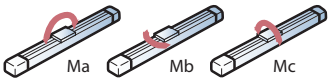
Encoder type The (incremental/ absolute) service life of the actuator

<Please note:>
There are 2 types of encoders that can be installed to the actuator: incremental and absolute.The incremental specification needs to have the return to home operation when the power is turned on. The absolute specification does not need to return to home, but it will no longer function if the battery that stores the absolute data goes dead, so be aware of the battery service life.

Load moment (Ma, Mb, Mc)

The numbers for load moment are based on assumptions of 5,000 km for SA4, SA5, SA6, and SA7, and 10,000 km for SS7 and SS8. If the unit is used at a moment value exceeding its specification value, the guide's service life will decrease. (See P452 of the Technical Reference for the moment calculation method.)

Direction of load moment on slider type



Service life

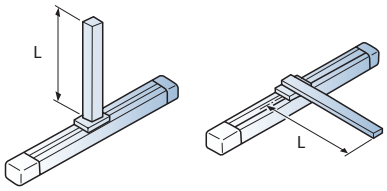
The service life of an actuator varies significantly depending on the operating conditions. With the slider type and rod type, the service life is estimated from the specified moment and the rated load of the ball screw, respectively. If the unit is operated with the respective values at the rated values, the slider type can run for 5,000 km or 10,000 km (refer to the above explanation of moment) of service life while the rod type can run for 5,000 km. If the unit is operated at a load that is smaller than the rated conditions, the service life will be longer. If the load exceeds the rated conditions, then the service life will be shorter.

Brake

If the actuator will be installed and used vertically, select the brake specification (optional) so that the slider (rod) won't fall and break the equipment when the power is turned off or in the event of an emergency stop.
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)

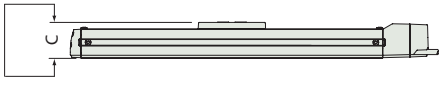
"Overhang load length" indicates a reference offset with which an actuator on which a work, bracket or other object is installed away from the actuator/slider center can move smoothly.
If the allowable overhang load length specified for each model is exceeded, vibration or settling delay may occur. Always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



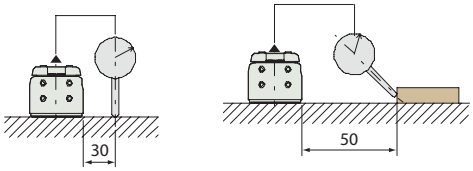
Accuracy level

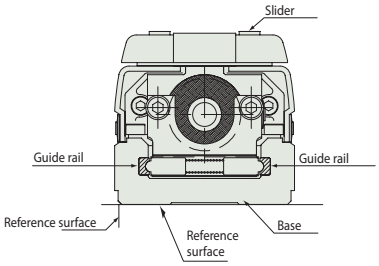
The accuracy of the slider type ROBO Cylinder is as follows.
Since the base and bottom surfaces of the actuator are used as reference surfaces for the way the slider moves, use these surfaces to adjust the parallelism of the actuator during installation.

Parallelism between actuator mounting surface (bottom face of base) and load mounting surface (top face)
ERC2: within ± 0.1mm RCP2/RCA/RCS2: within ± 0.05mm



Parallelism with mounting frame (If the actuator is fixed on a smooth surface *1)
ERC2: within ± 0.1mm RCP2/RCA/RCS2: within ± 0.05mm





*RCP2W-SA16C is a sliding guide, so parallelism does not apply.

Conditions: The above values are for 20°C. *1: Flatness: Max. 0.05mm