

**ROBO Cylinder**  
**Short Length Type**

# RCP2/RCA-SRA

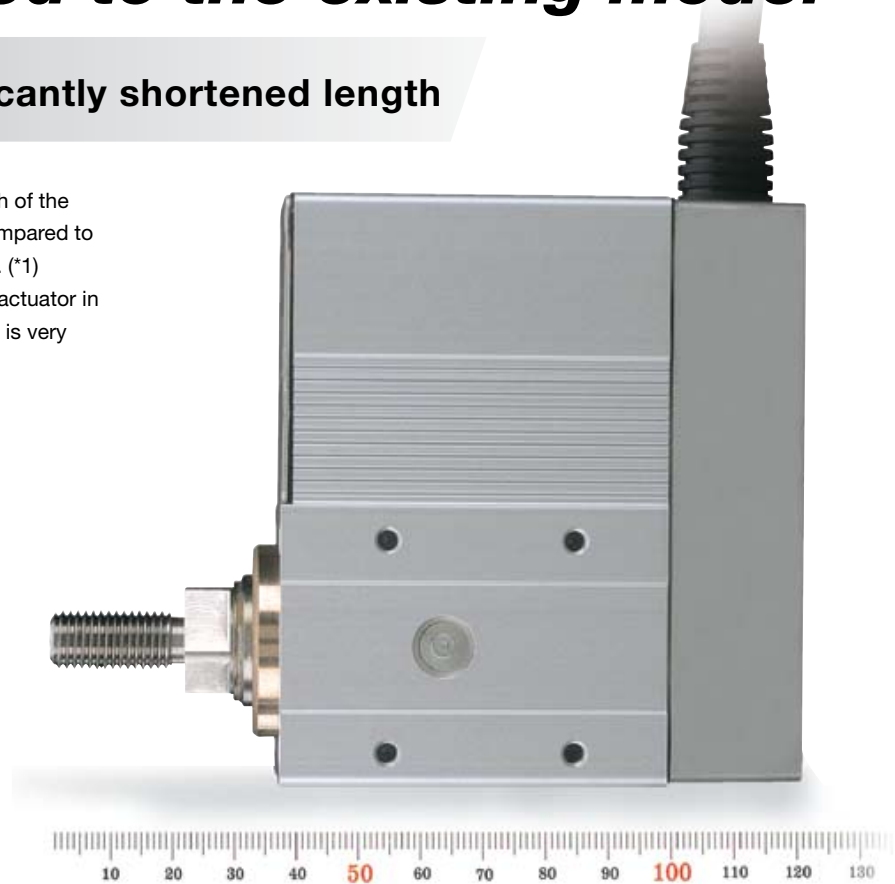


# *We have reduced the length by a maximum of 45% compared to the existing model*

## **1** Significantly shortened length

We have shortened the length of the actuator by up to 129mm compared to the current equivalent model. (\*1)  
Customers can now use the actuator in narrow locations where there is very little space.

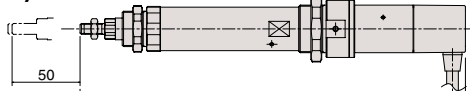
(\*1) Compared to RCA-RA3C



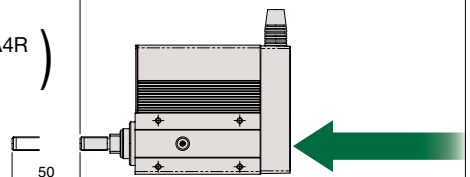
■ Length Comparison with Existing Model

Compared to RCA-RA3C

( RCA-RA3C )  
50 stroke



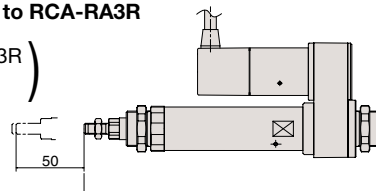
( RCA-SRA4R )  
50 stroke



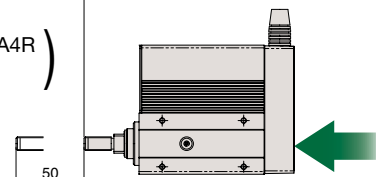
Shortened by 129mm

Compared to RCA-RA3R

( RCA-RA3R )  
50 stroke



( RCA-SRA4R )  
50 stroke



Shortened by 63.5mm

1

## 2

## Choose between a pulse motor or servo motor

Select between 2 types of motors: a pulse motor type suitable for push force and low-speed raising and lowering operations, or a servo motor type effective for stable transportation during high-speed operations

### Pulse motor: RCP2 Series

Usage Low-speed raising and lowering operations, such as clamping and press fitting

### Servo Motor: RCA Series

Usage Positioning during high-speed transfer

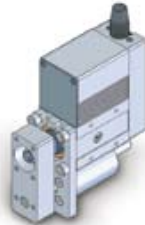
## 3

## A guide type can be selected

A guide type can be selected if a load is applied to the end of a rod, or if a straight motion is required. A single guide or a double guide can be selected, and for the single guide, there are 3 directions that it can be installed.



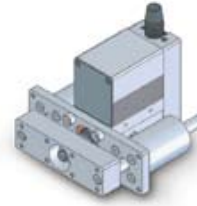
Single guide  
Installed on left



Single guide  
Installed on bottom



Single guide  
Installed on right



Double-guide

## 4

## Flexible Installation method

There are 5 installation surfaces on the actuator. We have also prepared optional front and rear flanges and foot brackets (bottom, side).



Flange  
(Installed on front)



Flange  
(Installed on rear)

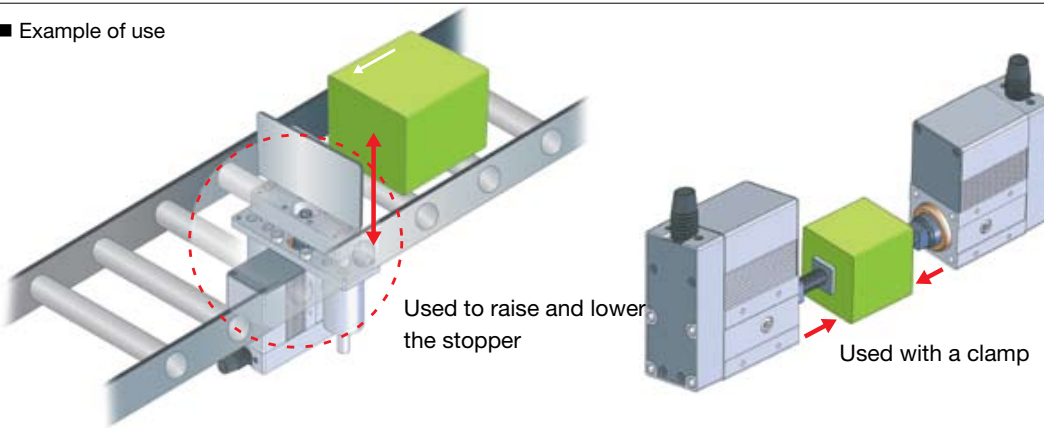








Foot bracket  
(Installed on bottom)



Foot bracket  
(Installed on side)

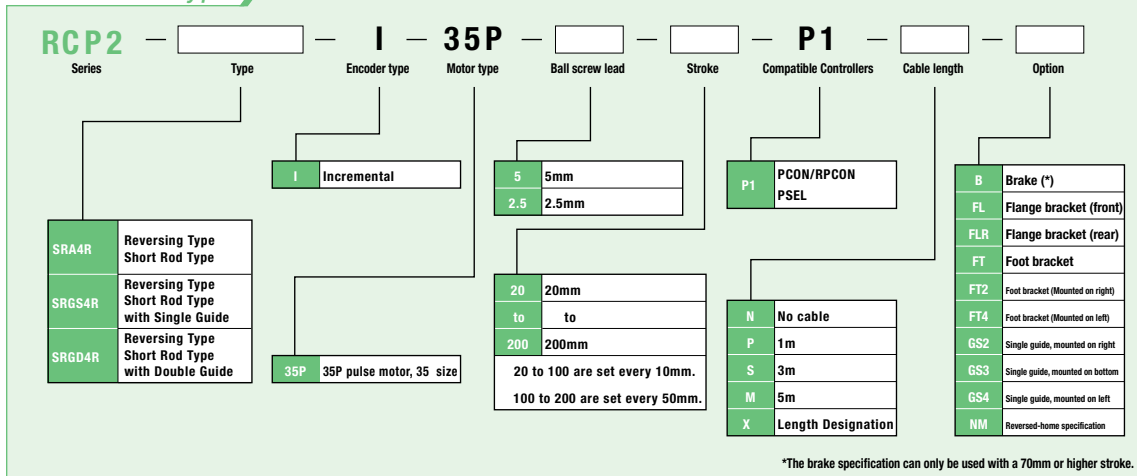
### ■ Example of use



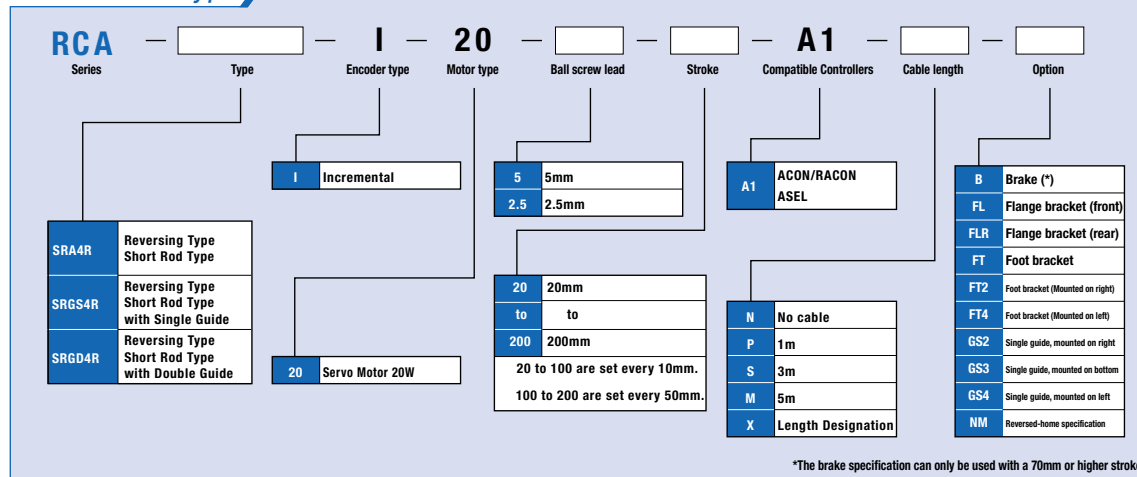
Series Name	Motor type	Type	Stroke	Ball screw lead	Maximum speed	Rated thrust	Maximum load capacity (*)		Maximum pushing force
							Horizontal	Vertical	
RCP2	Pulse motor 35□	Standard (no guide) 	20 to 200mm 20 to 100 are set every 10mm. 100 to 200 are set every 50mm.	5	250	—	10 to 25	2 to 9	90
				2.5	125	—	30 to 35	3 to 15	170
		With single guide 		5	250	—	9 to 24	1 to 8	90
				2.5	125	—	30 to 35	3 to 15	170
		With double guide 		5	250	—	9 to 24	1 to 8	90
				2.5	125	—	30 to 35	3 to 15	170
RCA	Servo Motor 20W	Standard (no guide) 	20 to 200mm 20 to 100 are set every 10mm. 100 to 200 are set every 50mm.	5	250	41	9	3	—
				2.5	125	81	18	6.5	—
		With single guide 		5	250	41	9	2	—
				2.5	125	81	18	5.5	—
		With double guide 		5	250	41	9	2	—
				2.5	125	81	18	5.5	—

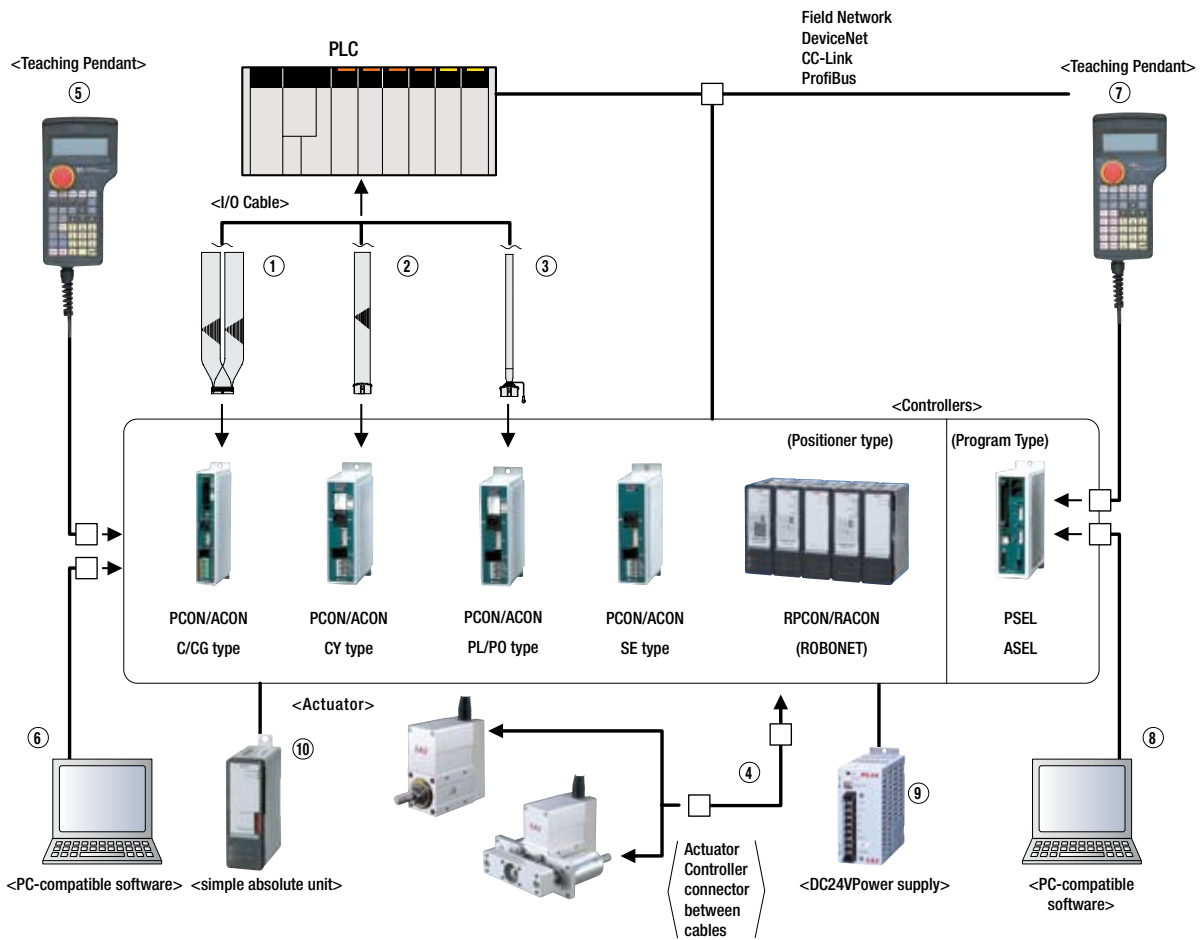
■ Model description

Pulse motor type



Servo Motor Type





No.	Title	Type	Model	Remarks	See page
①	I/O Cable	for use with C/CG Type	CB-PAC-PI0020	Cable length 2m (fitting for controller) for both PCON/ACON	(*)
②		for use with CY Type	CB-PACY-PI0020		(*)
③		for use with PL/PO type (pulse train)	CB-PACPU-PI0020		(*)
④	Actuator Controller connector between cables	A motor/encoder integrated cable for use with RCP2 (PCON/RPCON/PSEL)	CB-PCS-MPA	Cable lengths 1m/3m/5m (required option for actuator)	P19
		A motor/encoder integrated cable for use with RCA (ACON/RACON/ASEL)	CB-ACS-MPA		P19
⑤	Positioner Type Teaching Pendant	Standard Teaching Pendant	CON-T	Cable length 5m for PCON/ACON/ROBONET	P22
		Simple Teaching Pendant	RCM-E		P22
		Data Setting Unit	RCM-P		P22
⑥	Positioner Type PC software	RS232 Connection Type	RCM-101-MW	Auxillary cable for PC connection (5m) for PCON/ACON/ROBONET	P22
		USB Connection Type	RCM-101-USB		P22
⑦	Program Type Teaching Pendant	Standard specification	SEL-T-J	Cable length 5m for both PSEL/ASEL	P22
		ANSI compatible specification	SEL-TD-J		P22
⑧	Program Type PC Software	RS232 Connection Type	IA-101-X-MW-J	Auxillary cable for PC connection (5m) for both PSEL/ASEL	P22
		USB Connection Type	IA-101-X-USB		P22
⑨	DC24V Power supply	100-V input	PS-241		(*)
		200-V input	PS-242		(*)
⑩	simple absolute unit	for PCON	PCON-ABU		(*)
		for ACON	ACON-ABU		(*)

(\*)Refer to ROBO Cylinder General Catalog 2008.

# RCP2-SRA4R

ROBO Cylinder, Short Rod-Type, Actuator Diameter 45mm, Pulse Motor, Motor Reversing Specification

Model Description	<b>RCP2</b>	<b>SRA4R</b>	<b>I</b>	<b>35P</b>			<b>P1</b>		
Series	Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option	
		I: Incremental specification	35P: Pulse motor 35□Size	5: 5mm 2.5: 2.5mm	20:20mm to 200:200mm (10mm pitch setting) *Every 50mm for strokes over 100mm.	P1: PCON RPCON PSEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table	

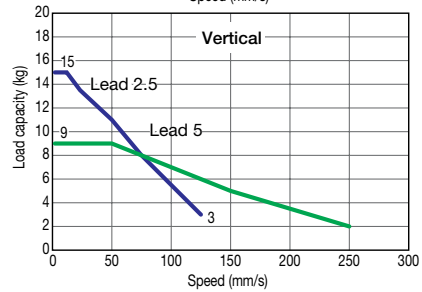
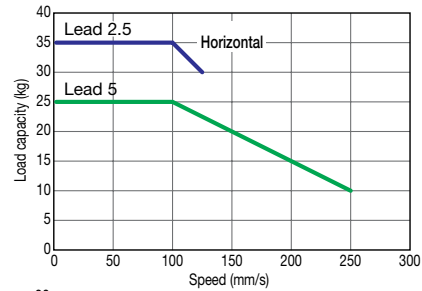
\* See P3 for model descriptions.



- (1) The RCP2 series uses a pulse motor so the load capacity decreases at high speeds. Confirm the payload at the desired speed in the Speed vs. Payload graph at right.
- (2) The payload is the value when operated at 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above values are maximum acceleration.
- (3) The horizontal load capacity assumes use of an external guide. Take note that the interlock may get damaged if external force is applied from any direction other than the moving direction of the rod.

### Speed vs. Payload Graph

Since the RCP2 Series uses a pulse motor, the payload decreases as speed increases. Use the table below to confirm that there is sufficient payload at the desired speed.



### Actuator Specification Table

#### Leads and Payloads

(Note 1) Note that the maximum load capacity decreases as the speed increases.

Model	Lead (mm)	Maximum payload (Note 1)		Maximum pushing force (N) (Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2-SRA4R-I-35P-5--P1-- ③②①	5	25	9	90	20 to 200 (every 10mm)
RCP2-SRA4R-I-35P-2.5--P1-- ③②①	2.5	35	15	170	(Note 3)

Legend Stroke Cable Length Option ③②①

(Note 2) Refer to the push force graph on P17.  
(Note 3) Every 50mm stroke at over 100mm.

#### Stroke and Maximum Speed

Stroke / Lead	20 to 200 (every 10mm)
5	250
2.5	125

(Unit = mm/s)

#### ① Price List by Stroke

① Stroke (mm)	Type code
	Encoder type
20 to 50	SRA4R Incremental
60 to 100	—
150	—
200	—

#### ② Cable Length Price List

Type	Cable symbol
Standard type	P (1m)
	S (3m)
	M (5m)
Special length	X06 (6m) – X10 (10m)
	X11 (11m) – X15 (15m)
	X16 (16m) – X20 (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.  
\*See P19 for maintenance cables.

#### ③ Option Price List

Title	Option code	See page
Brake	B	—
Flange bracket (front)	FL	→P19
Flange bracket (rear)	FLR	→P19
Foot bracket 1 (mounted on bottom)	FT	→P19
Foot brackets 2 (Mounted on right or left side)	FT2/FT4	→P19

\*The brake can be used at 70 stroke or above.

#### Actuator Specification

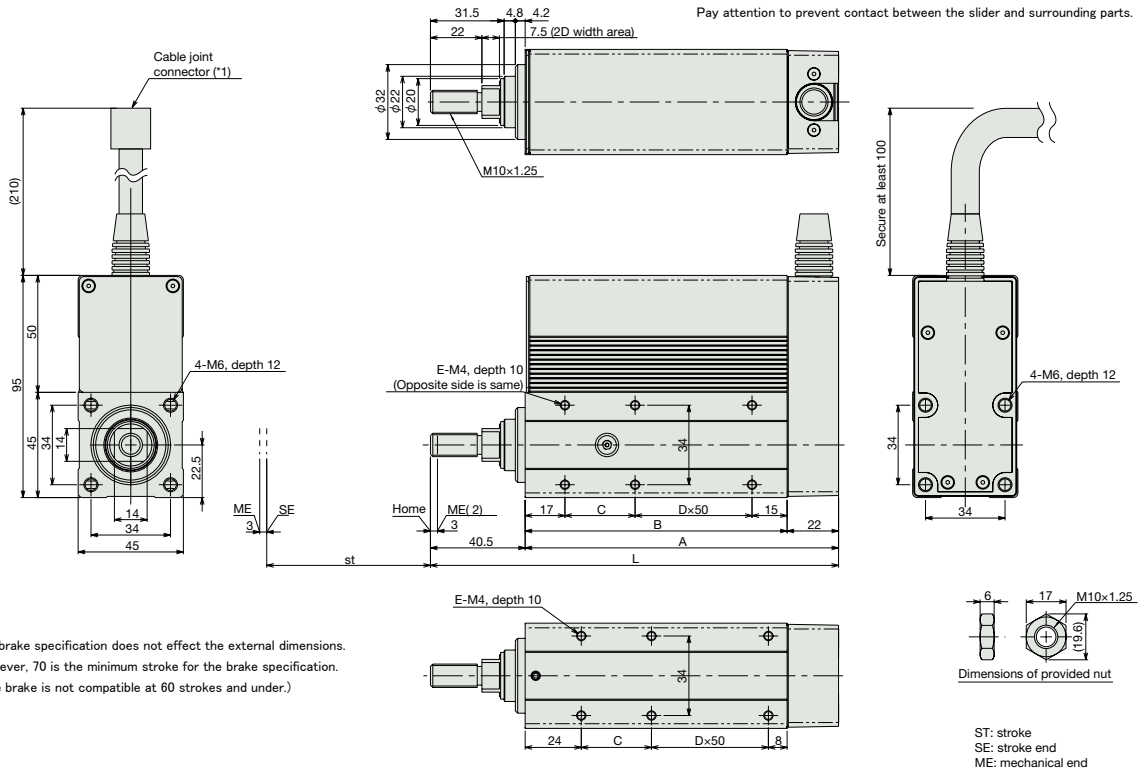
Item	Description
Drive System	Ball screw φ8mm rolled C10
Positioning Repeatability	±0.05mm
Backlash	0.1mm or less
Rod diameter	φ22mm
Non-rotary Rod Precision	—
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

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Dimensions Drawing

(\*1) Connect the motor and encoder cable. See P19 for cable details.  
 (\*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.



\* The brake specification does not effect the external dimensions.  
 However, 70 is the minimum stroke for the brake specification.  
 (The brake is not compatible at 60 strokes and under.)

■ Dimensions and Weight by Stroke (If the unit has a brake, add 0.2kg)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	124.5	134.5	144.5	154.5	164.5	174.5	184.5	194.5	204.5	254.5	304.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	80	90	100	110	160	210
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	0.83	0.89	0.96	1.02	1.08	1.14	1.21	1.27	1.33	1.64	1.95

Compatible Controllers

The RCP2 Series actuators can be operated with the following controllers. Select the type that is compatible with your application.

	External View	Model	Features	Maximum number of positioning points	Input power	Power-supply capacity	See page
Positioner Type		PCON-C-35PI-NP-2-0	Up to 512-point positioning possible	512 points	DC24V	Maximum 2A	→P20
Safety category compatible Positioner type		PCON-CG-35PI-NP-2-0					
Solenoid valve type		PCON-CY-35PI-NP-2-0	Same as solenoid valve Controlled operation enabled	3 points			
Pulse series input type (Differential line driver specification)		PCON-PL-35PI-NP-2-0	Differential line driver compatible Pulse series input type	(-)			
Pulse series input type (Open collector specification)		PCON-PO-35PI-NP-2-0	Open collector compatible Pulse series input type				
Serial communication type		PCON-SE-35PI-N-0-0	Serial communications Special Type	64 points			
Field network type(*1)		RPCON-35P	Field Network Dedicated type	768 points			
Program control type		PSEL-C-1-35PI-NP-2-0	Programmed operation enabled Maximum biaxial operation enabled	1500 points			

(\*1) In addition to the controller, the field network type also requires a Gateway unit (sold separately).

# RCP2-SRGS4R

ROBO Cylinder, Rod-Type with Short Single Guide, Actuator Diameter 45mm, Servo Motor, Motor Reversing Specification

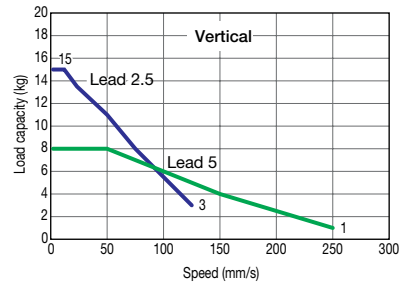
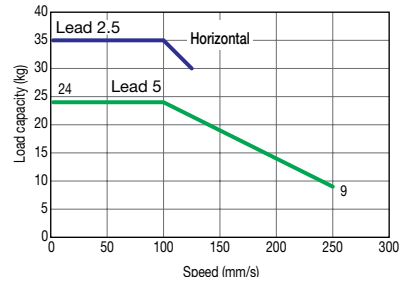
Model Description	<b>RCP2</b>	<b>SRGS4R</b>	<b>I</b>	<b>35P</b>			<b>P1</b>		
Series		Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option
			I: Incremental specification	35P: Pulse motor 35□Size	5: 5mm 2.5: 2.5mm	20:20mm to 200:200mm (10mm pitch setting)	P1: PCON RPCON PSEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table
* See P3 for model descriptions.					*Every 50mm for strokes over 100mm.				



- POINT**  
Notes for selection
- (1) The RCP2 series uses a pulse motor so the load capacity decreases at high speeds. Confirm the payload at the desired speed in the Speed vs. Payload graph at right.
  - (2) The payload is the value when operated at 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above values are maximum acceleration.
  - (3) The horizontal load capacity assumes use of an external guide. See P.18 of the Technical Reference for the load capacities that can be used with the single guide that is provided.

### Speed vs. Payload Graph

Since the RCP2 Series uses a pulse motor, the payload decreases as speed increases. Use the table below to confirm that there is sufficient payload at the desired speed.



### Actuator Specification Table

#### Leads and Payloads

(Note 1) Note that the maximum load capacity decreases as the speed increases.

Model	Lead (mm)	Maximum payload (Note 1)		Maximum pushing force (N) (Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2-SRGS4R-I-35P-5--P1-- ③②①	5	24	8	90	20 to 200 (every 10mm)
RCP2-SRGS4R-I-35P-2.5--P1-- ③②①	2.5	35	15	170	(Note 3)

Legend Stroke Cable Length Option ③②①

(Note 2) Refer to the push force graph on P17.  
(Note 3) Every 50mm stroke at over 100mm.

#### Stroke and Maximum Speed

Lead	Stroke	20 to 200 (every 10mm)
5		250
2.5		125

(Unit = mm/s)

#### ① Price List by Stroke

① Stroke (mm)	Type code
	Encoder type
	Incremental
20 to 50	—
60 to 100	—
150	—
200	—

#### ② Cable Length Price List

Type	Cable symbol
Standard type	<b>P</b> (1m)
	<b>S</b> (3m)
	<b>M</b> (5m)
Special length	<b>X06</b> (6m) – <b>X10</b> (10m)
	<b>X11</b> (11m) – <b>X15</b> (15m)
	<b>X16</b> (16m) – <b>X20</b> (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.  
\*See P19 for maintenance cables.

#### ③ Option Price List

Title	Option code	See page
Brake	<b>B</b>	—
Flange bracket (rear)	<b>FLR</b>	→P19
Foot bracket 1 (mounted on bottom)	<b>FT</b>	→P19
Foot brackets 2 (Mounted on right and left sides)	<b>FT2/FT4</b>	→P19
Guide installation direction change	<b>GS2 to GS4</b>	→P8

\*The brake can be used at 70 stroke or above.  
\*Always input the direction the guide should be mounted on the model.  
\*The guide and foot bracket cannot be used in the same direction.

#### Actuator Specification

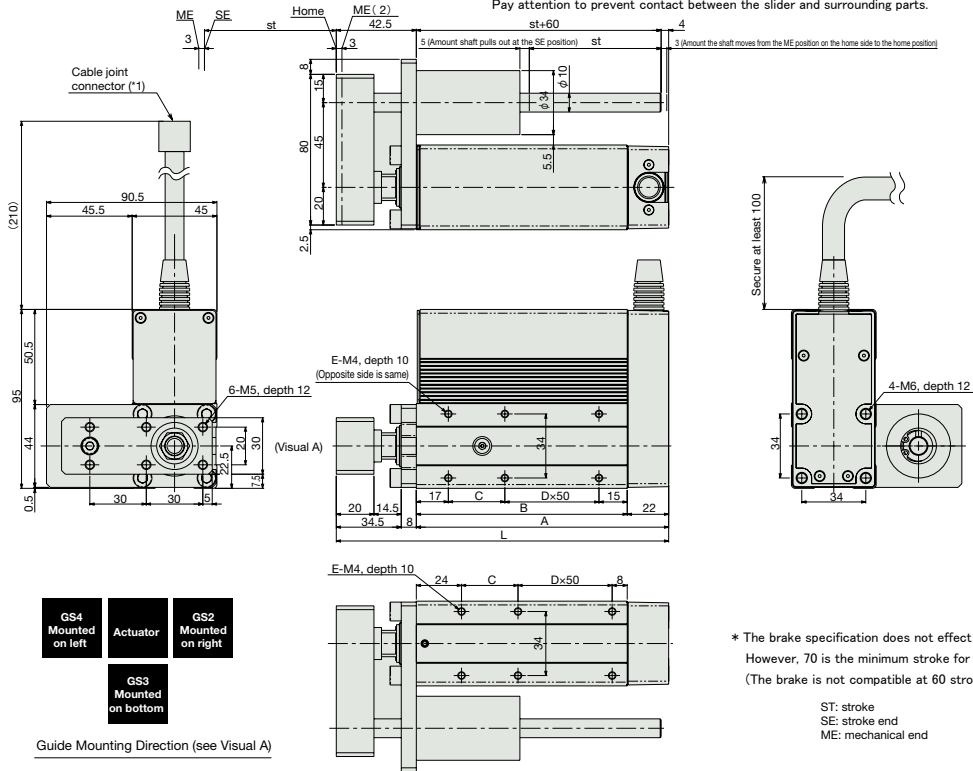
Item	Description
Drive System	Ball screw φ8mm rolled C10
Positioning Repeatability	±0.05mm
Backlash	0.1mm or less
Rod diameter	φ22mm
Non-rotary Rod Precision	±0.05 degrees
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

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Dimensions Drawing

(\*1) Connect the motor and encoder cable. See P19 for cable details.  
 (\*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.



\* The brake specification does not effect the external dimensions.  
 However, 70 is the minimum stroke for the brake specification.  
 (The brake is not compatible at 60 strokes and under.)

ST: stroke  
 SE: stroke end  
 ME: mechanical end

■ Dimensions and Weight by Stroke (If the unit has a brake, add 0.2kg)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5	256.5	306.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	80	90	100	110	160	210
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	1.2	1.27	1.34	1.41	1.48	1.54	1.61	1.68	1.75	2.09	2.43

Compatible Controllers

The RCP2 Series actuators can be operated with the following controllers. Select the type that is compatible with your application.

Title	External View	Model	Features	Maximum number of positioning points	Input power	Power-supply capacity	See page
Positioner Type		PCON-C-35PI-NP-2-0	Up to 512-point positioning possible	512 points	DC24V	Maximum 2A	→P20
Safety category compatible Positioner type		PCON-CG-35PI-NP-2-0					
Solenoid valve type		PCON-CY-35PI-NP-2-0	Same as solenoid valve Controlled operation enabled	3 points			
Pulse series input type (Differential line driver specification)		PCON-PL-35PI-NP-2-0	Differential line driver compatible Pulse series input type	(-)			
Pulse series input type (Open collector specification)		PCON-PO-35PI-NP-2-0	Open collector compatible Pulse series input type				
Serial communication type		PCON-SE-35PI-N-0-0	Serial communications Special Type	64 points			
Field network type(*1)		RPCON-35P	Field Network Dedicated type	768 points			
Program control type		PSEL-C-1-35PI-NP-2-0	Programmed operation enabled Maximum biaxial operation enabled	1500 points			

(\*1) In addition to the controller, the field network type also requires a Gateway unit (sold separately).

# RCP2-SRGD4R

ROBO Cylinder, Rod-Type with Short Guide, Actuator Diameter 45mm, Servo Motor, Motor Reversing Specification

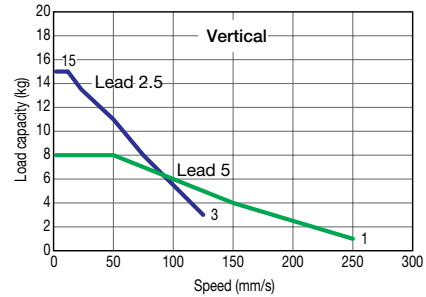
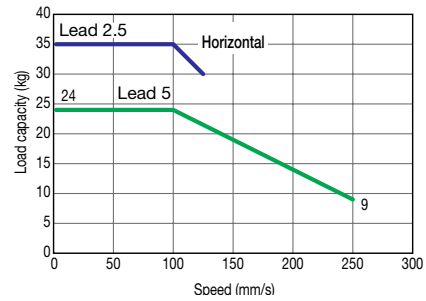
Model Description	<b>RCP2</b> — <b>SRGD4R</b> — <b>I</b> — <b>35P</b> — <input type="checkbox"/> — <input type="checkbox"/> — <b>P1</b> — <input type="checkbox"/> — <input type="checkbox"/>							
Series	Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option
I: Incremental specification	35P: Pulse motor 35□Size	5: 5mm 2.5: 2.5mm	20:20mm to 200:200mm (10mm pitch setting)	P1: PCON RPCON PSEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table		

\* See P3 for model descriptions. \*Every 50mm for strokes over 100mm.



### Speed vs. Payload Graph

Since the RCP2 Series uses a pulse motor, the payload decreases as speed increases. Use the table below to confirm that there is sufficient payload at the desired speed.



- The RCP2 series uses a pulse motor so the load capacity decreases at high speeds. Confirm the payload at the desired speed in the Speed vs. Payload graph at right.
- The payload is the value when operated at 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above values are maximum acceleration.
- The horizontal load capacity assumes use of an external guide. See P.18 of the Technical Reference for the load capacities that can be used with the double guide that is provided.

### Actuator Specification Table

#### Leads and Payloads

(Note 1) Note that the maximum load capacity decreases as the speed increases.

Model	Lead (mm)	Maximum payload (Note 1)		Maximum pushing force (N) (Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2-SRGD4R-I-35P-5--P1-- ③②①	5	24	8	90	20 to 200 (every 10mm)
RCP2-SRGD4R-I-35P-2.5--P1-- ③②①	2.5	35	15	170	(Note 3)

Legend Stroke Cable Length Option ③②①

(Note 2) Refer to the push force graph on P17.  
(Note 3) Every 50mm stroke at over 100mm.

#### Stroke and Maximum Speed

Stroke	20 to 200 (every 10mm)
Lead 5	250
Lead 2.5	125

(Unit = mm/s)

### ① Price List by Stroke

① Stroke (mm)	Type code
	Encoder type
	Incremental
20 to 50	—
60 to 100	—
150	—
200	—

### ② Cable Length Price List

Type	Cable symbol
Standard type	<b>P</b> (1m)
	<b>S</b> (3m)
	<b>M</b> (5m)
Special length	<b>X06</b> (6m) — <b>X10</b> (10m)
	<b>X11</b> (11m) — <b>X15</b> (15m)
	<b>X16</b> (16m) — <b>X20</b> (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.

\*See P19 for maintenance cables.

### ③ Option Price List

Title	Option code	See page
Brake	<b>B</b>	—
Foot bracket 1 (mounted on bottom)	<b>FT</b>	→P19

\*The brake can be used at 70 stroke or above.

\*The foot bracket cannot be mounted on the side.

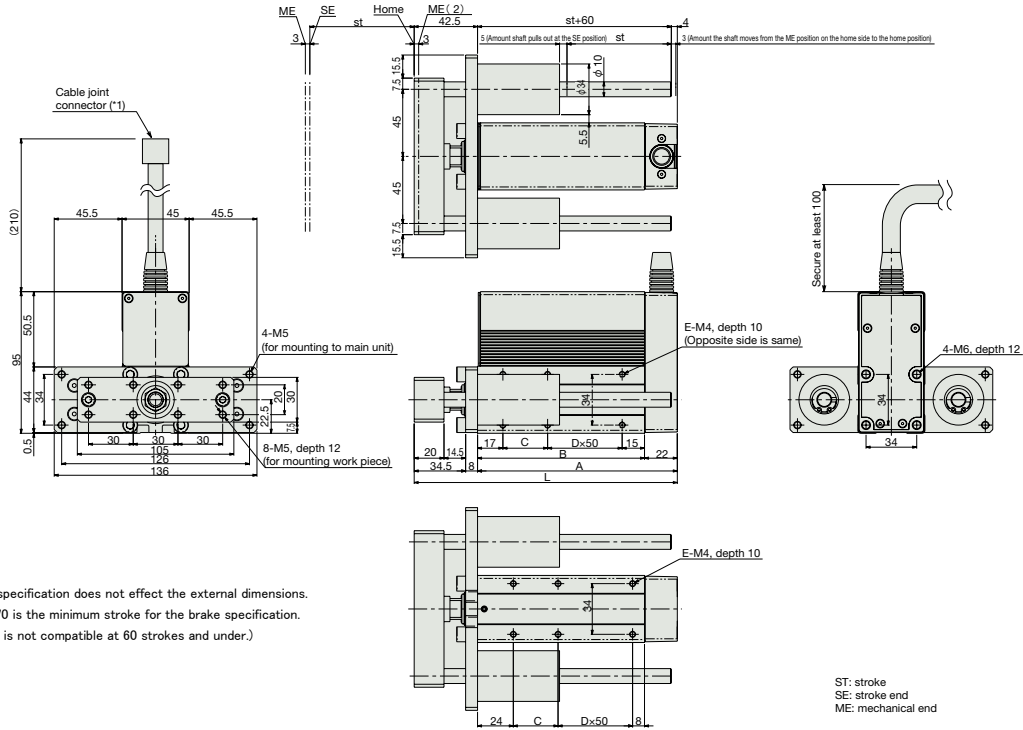
### Actuator Specification

Item	Description
Drive System	Ball screw $\phi$ 8mm rolled C10
Positioning Repeatability	$\pm$ 0.05mm
Backlash	0.1mm or less
Rod diameter	$\phi$ 22mm
Non-rotary Rod Precision	$\pm$ 0.05 degrees
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

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Dimensions Drawing

- (\*1) Connect the motor and encoder cable. See P19 for cable details.
- (\*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.



\* The brake specification does not effect the external dimensions. However, 70 is the minimum stroke for the brake specification. (The brake is not compatible at 60 strokes and under.)

ST: stroke  
SE: stroke end  
ME: mechanical end

■ Dimensions and Weight by Stroke (If the unit has a brake, add 0.2kg)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5	256.5	306.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	80	90	100	110	160	210
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	1.47	1.55	1.62	1.7	1.77	1.84	1.92	1.99	2.07	2.44	2.81

Compatible Controllers

The RCP2 Series actuators can be operated with the following controllers. Select the type that is compatible with your application.

Title	External View	Model	Features	Maximum number of positioning points	Input power	Power-supply capacity	See page
Positioner Type		PCON-C-35PI-NP-2-0	Up to 512-point positioning possible	512 points	DC24V	Maximum 2A	→P20
Safety category compatible Positioner type		PCON-CG-35PI-NP-2-0					
Solenoid valve type		PCON-CY-35PI-NP-2-0	Same as solenoid valve Controlled operation enabled	3 points			
Pulse series input type (Differential line driver specification)		PCON-PL-35PI-NP-2-0	Differential line driver compatible Pulse series input type	(-)			
Pulse series input type (Open collector specification)		PCON-PO-35PI-NP-2-0	Open collector compatible Pulse series input type				
Serial communication type		PCON-SE-35PI-N-0-0	Serial communications Special Type	64 points			
Field network type(*1)		RPCON-35P	Field Network Dedicated type	768 points			
Program control type		PSEL-C-1-35PI-NP-2-0	Programmed operation enabled Maximum biaxial operation enabled	1500 points			

(\*1) In addition to the controller, the field network type also requires a Gateway unit (sold separately).

# RCA-SRA4R

ROBO Cylinder, Short Rod-Type, Actuator Diameter 45mm, Servo Motor, Motor Reversing Specification

Model Description	<b>RCA</b>	<b>SRA4R</b>	<b>I</b>	<b>20</b>			<b>A1</b>		
Series	Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option	
		I: Incremental specification	20: Servo motor 20W	5: 5mm 2.5: 2.5mm	20:20mm to 200:200mm (10mm pitch setting)	A1: ACON RACON ASEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table	

\* See P3 for model descriptions. \*Every 50mm for strokes over 100mm.

For low-power applications



- POINT**  
Notes for selection
- (1) The payload capacity acceleration is 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above value is the maximum acceleration.
  - (2) There is horizontal load capacity when external guides are used. Take note that if external force is applied in any direction other than moving direction the rod, the interlock may get damaged.

Actuator Specification Table						
Leads and Payloads						
Model	Lead (mm)	Maximum payload (Note 1)		Rated thrust (N)	Stroke (mm)	
RCA-SRA4R-I-20-5--A1-- ③②①	5	Horizontal (kg)	Vertical (kg)		20 to 200 (every 10mm)	Stroke / 20 to 200 (every 10mm)
RCA-SRA4R-I-20-2.5--A1-- ③②①	2.5	18	6.5	81	(Note 1)	125

Legend Stroke Cable Length Option ③②① (Note 1) Every 50mm for strokes over 100mm. (Unit = mm/s)

① Price List by Stroke

① Stroke (mm)	Type code
	<b>SRA4</b>
	Encoder type
	Incremental
20 to 50	—
60 to 100	—
150	—
200	—

② Cable Length Price List

Type	Cable symbol
Standard type	P (1m)
	S (3m)
	M (5m)
Special length	X06 (6m) – X10 (10m)
	X11 (11m) – X15 (15m)
	X16 (16m) – X20 (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.  
\*See P19 for maintenance cables.

③ Option Price List

Title	Option code	See page
Brake	<b>B</b>	—
Flange bracket (front)	<b>FL</b>	→P19
Flange bracket (rear)	<b>FLR</b>	→P19
Foot bracket 1 (mounted on bottom)	<b>FT</b>	→P19
Foot brackets 2 (Mounted on right or left sides)	<b>FT2/FT4</b>	→P19
for energy saving	<b>LA</b>	—

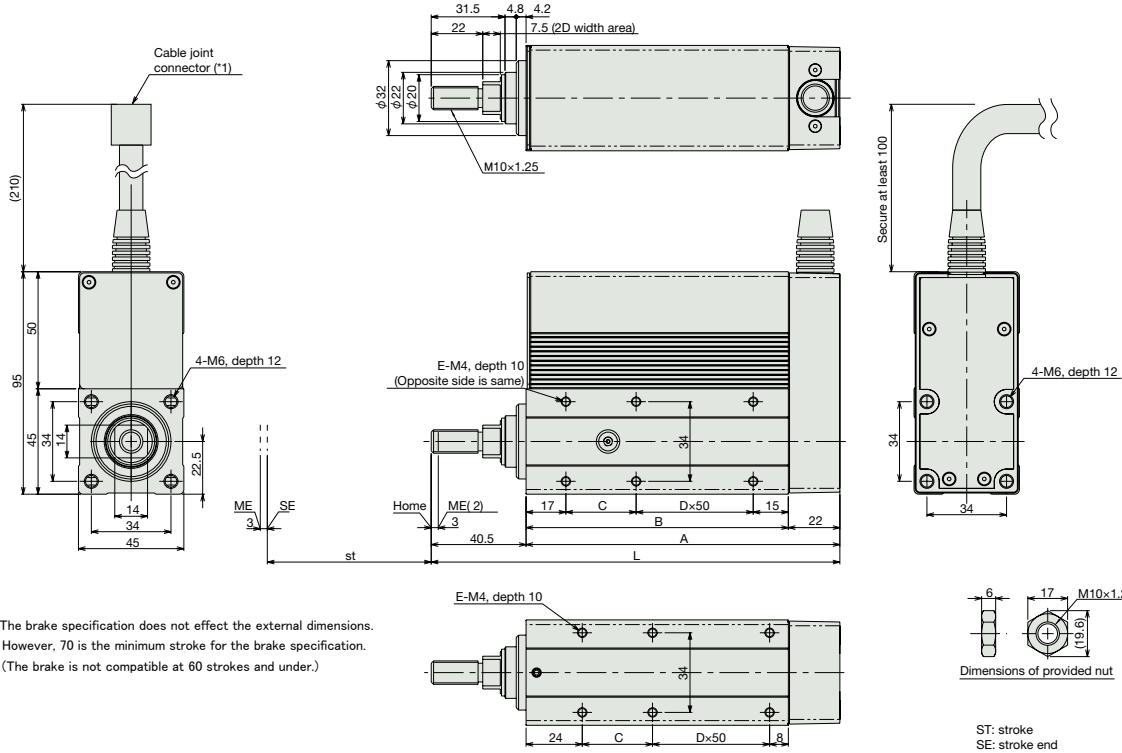
\*The brake can be used at 70 stroke or above.

Actuator Specification

Item	Description
Drive System	Ball screw φ8mm rolled C10
Positioning Repeatability	±0.05mm
Backlash	0.1mm or less
Rod diameter	φ22mm
Non-rotary Rod Precision	—
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

Dimensions Drawing

(\*1) Connect the motor and encoder cable. See P19 for cable details.  
 (\*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.



■ Dimensions and Weight by Stroke (If the unit has a brake, add 0.2kg)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	124.5	134.5	144.5	154.5	164.5	174.5	184.5	194.5	204.5	254.5	304.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	30	40	50	60	60	60
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	0.78	0.84	0.9	0.96	1.03	1.09	1.15	1.21	1.27	1.59	1.9

Compatible Controllers

RCA Series actuators can be operated with the following controllers.. Select the type that is compatible with your application.

Title	External View	Model	Features	Maximum number of positioning points	Input power	Power-supply capacity	See page	
Positioner Type		ACON-C-20①-NP-2-0	Up to 512-point positioning possible	512 points	DC24V	(Standard) Rated 1.3A Peak 4.4A  (energy-saving) Rated 1.3A Peak 2.5A	→P20	
Safety category compatible Positioner type		ACON-CG-20①-NP-2-0						
Solenoid valve type		ACON-CY-20①-NP-2-0	Same as solenoid valve Controlled operation enabled	3 points				
Pulse series input type (Differential line driver specification)		ACON-PL-20①-NP-2-0	Differential line driver compatible Pulse series input type	(-)				
Pulse series input type (Open collector specification)		ACON-PO-20①-NP-2-0	Open collector compatible Pulse series input type					
Serial communication type		ACON-SE-20①-N-0-0	Serial communications Special Type	64 points				(*)2
Field network type (*1)		RACON-20①	Field Network Dedicated type	768 points				
Program control type		ASEL-C-1-20①-NP-2-0	Programmed operation enabled Maximum biaxial operation enabled	1500 points				

(\*1) In addition to the controller, the field network type also requires a Gateway unit (sold separately). \*ASEL is for uniaxial specification. (\*2) is entered as the code (LA) when designating for low-power applications.

# RCA-SRGS4R

ROBO Cylinder, Rod-Type with Short Single Guide, Actuator Diameter 45mm, Servo Motor, Motor Reversing Specification

Model Description	<b>RCA</b>	<b>SRGS4R</b>	<b>I</b>	<b>20</b>			<b>A1</b>		
Series	Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option	
		I: Incremental specification	20: Servo motor 20W	5: 5mm 2.5:2.5mm	20:20mm to 200:200mm (10mm pitch setting)	A1: ACON RACON ASEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table	

\* See P3 for model descriptions. \*Every 50mm for strokes over 100mm.

For low-power applications



- POINT**  
Notes for selection
- (1) The payload capacity acceleration is 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above value is the maximum acceleration.
  - (2) There is horizontal load capacity when external guides are used. See P.18 of the Technical Reference for the load capacities that can be used with the single guide that is provided.

## Actuator Specification Table

### Leads and Payloads

Model	Lead (mm)	Maximum payload (Note 1)		Rated thrust (N)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCA-SRGS4R-I-20-5--A1-- ③②①	5	9	2	41	20 to 200 (every 10mm)
RCA-SRGS4R-I-20-2.5--A1-- ③②①	2.5	18	5.5	81	(Note 1)

Legend Stroke Cable Length Option ③②①

(Note 1) Every 50mm for strokes over 100mm.

(Unit = mm/s)

### Stroke and Maximum Speed

Lead	Stroke	20 to 200 (every 10mm)
	5	
2.5		125

### ① Price List by Stroke

① Stroke (mm)	Type code
	Encoder type
	Incremental
20 to 50	—
60 to 100	—
150	—
200	—

### ② Cable Length Price List

Type	Cable symbol
Standard type	<b>P</b> (1m)
	<b>S</b> (3m)
	<b>M</b> (5m)
Special length	<b>X06</b> (6m) – <b>X10</b> (10m)
	<b>X11</b> (11m) – <b>X15</b> (15m)
	<b>X16</b> (16m) – <b>X20</b> (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.

\*See P19 for maintenance cables.

### ③ Option Price List

Title	Option code	See page
Brake	<b>B</b>	—
Flange bracket (rear)	<b>FLR</b>	→P19
Foot bracket 1 (mounted on bottom)	<b>FT</b>	→P19
Foot brackets 2 (Mounted on right and left sides)	<b>FT2/FT4</b>	→P19
Guide mounting direction	<b>GS2 to GS4</b>	→P14
For low-power applications	<b>LA</b>	—

\*The brake can be used at 70 stroke or above.

\*Always input the direction the guide should be mounted on the model.

\*The guide and foot bracket cannot be used in the same direction.

### Actuator Specification

Item	Description
Drive System	Ball screw $\phi$ 8mm rolled C10
Positioning Repeatability	$\pm$ 0.05mm
Backlash	0.1mm or less
Rod diameter	$\phi$ 22mm
Non-rotary Rod Precision	$\pm$ 0.05 degrees
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

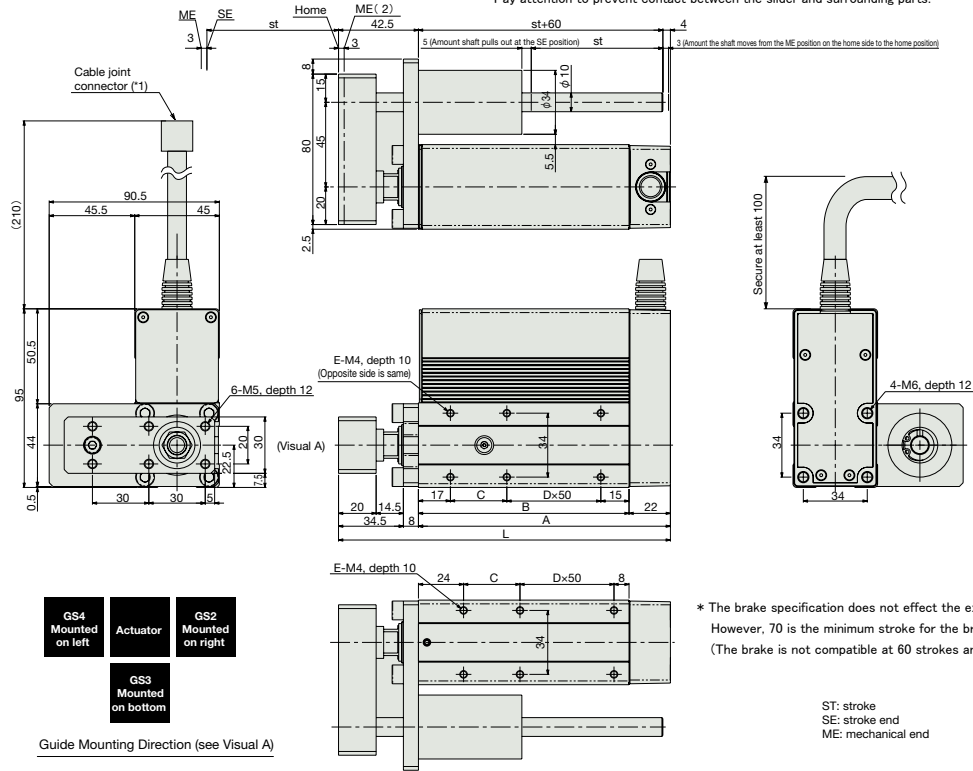
# 13

RCA-SRGS4R



Dimensions Drawing

(\*1) Connect the motor and encoder cable. See P19 for cable details.  
 (\*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.



■ Dimensions and Weight by Stroke (If the unit has a brake, add 0.2kg)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5	256.5	306.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	80	90	100	110	160	210
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	1.15	1.21	1.28	1.35	1.42	1.49	1.56	1.62	1.69	2.03	2.38

Compatible Controllers

RCA Series actuators can be operated with the following controllers. Select the type that is compatible with your application.

Title	External View	Model	Features	Maximum number of positioning points	Input power	Power-supply capacity	See page
Positioner Type		ACON-C-20I①-NP-2-0	Up to 512-point positioning possible	512 points	DC24V	(Standard) Rated 1.3A Peak 4.4A  (energy-saving) Rated 1.3A Peak 2.5A  (*2)	→P20
Safety category compatible Positioner type		ACON-CG-20I①-NP-2-0					
Solenoid valve type		ACON-CY-20I①-NP-2-0	Same as solenoid valve Controlled operation enabled	3 points			
Pulse series input type (Differential line driver specification)		ACON-PL-20I①-NP-2-0	Differential line driver compatible Pulse series input type	(-)			
Pulse series input type (Open collector specification)		ACON-PO-20I①-NP-2-0	Open collector compatible Pulse series input type				
Serial communication type		ACON-SE-20I①-N-0-0	Serial communications Special Type	64 points			
Field network type (*1)		RACON-20I①	Field Network Dedicated type	768 points			
Program control type		ASEL-C-1-20I①-NP-2-0	Programmed operation enabled Maximum biaxial operation enabled	1500 points			

(\*1) In addition to the controller, the field network type also requires a Gateway unit (sold separately).

\*ASEL is for uniaxial specification.

(\*2) is entered as the code (LA) when designating for low-power applications.

# RCA-SRGD4R

ROBO Cylinder, Rod-Type with Short Double Guide, Actuator Diameter 45mm, Servo Motor, Motor Reversing Specification

Model Description	<b>RCA</b>	<b>—SRGD4R</b>	<b>I</b>	<b>— 20</b>			<b>A1</b>		
	Series	Type	Encoder type	Motor type	Lead	Stroke	Compatible Controllers	Cable length	Option
			I: Incremental specification	20: Servo motor 20W	5: 5mm 2.5: 2.5mm	20: 20mm to 200: 200mm (10mm pitch setting)	A1: ACON RACON ASEL	N: None P: 1m S: 3m M: 5m X□□: Length designation	Options below See Pricing Table

\* See P3 for model descriptions. \*Every 50mm for strokes over 100mm.

For low-power applications



**POINT**  
Notes for selection

- (1) The payload capacity acceleration is 0.3G acceleration (0.2G acceleration in vertical operation with lead 2.5). The above value is the maximum acceleration.
- (2) There is horizontal load capacity when external guides are used. See P.18 of the Technical Reference for the load capacities that can be used with the double guide that is provided.

### Actuator Specification Table

#### Leads and Payloads

Model	Lead (mm)	Maximum payload (Note 1)		Rated thrust (N)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCA-SRGD4R-I-20-5--A1-- ③②①	5	9	2	41	20 to 200 (every 10mm) (Note 1)
RCA-SRGD4R-I-20-2.5--A1-- ③②①	2.5	18	5.5	81	

#### Stroke and Maximum Speed

Lead	Stroke	20 to 200 (every 10mm)
	5	
2.5		125

Legend Stroke Cable Length Option ③②①

(Note 1) Every 50mm for strokes over 100mm.

(Unit = mm/s)

#### ① Price List by Stroke

① Stroke (mm)	Type code
	Encoder type
	Incremental
20 to 50	—
60 to 100	—
150	—
200	—

#### ② Cable Length Price List

Type	Cable symbol
Standard type	<b>P</b> (1m)
	<b>S</b> (3m)
	<b>M</b> (5m)
Special length	<b>X06</b> (6m) – <b>X10</b> (10m)
	<b>X11</b> (11m) – <b>X15</b> (15m)
	<b>X16</b> (16m) – <b>X20</b> (20m)

\*A built-in motor-encoder cable is standard, and meets the robot cable specification.  
\*See P19 for maintenance cables.

#### ③ Option Price List

Title	Option code	See page
Brake	<b>B</b>	—
Foot bracket1(mounted on bottom)	<b>FT</b>	→P19

\*The brake can be used at 70 stroke or above.  
\*The foot bracket cannot be mounted on the side.

#### Actuator Specification

Item	Description
Drive System	Ball screw $\phi$ 8mm rolled C10
Positioning Repeatability	$\pm$ 0.05mm
Backlash	0.1mm or less
Rod diameter	$\phi$ 22mm
Non-rotary Rod Precision	$\pm$ 0.05 degrees
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (without condensation)
Service life	5000km

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RCA-SRGD4R



## Diagram Showing Relationship Between Push Force & Current-Limiting

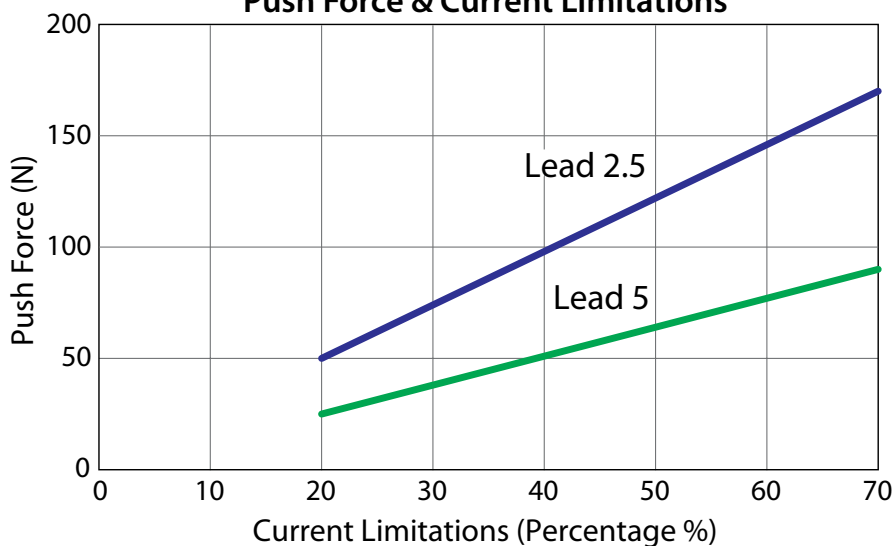
The push force applied in push-motion operation can be changed freely by changing the current-limiting value in the controller.

Use the graph below to check the required push force.

### Caution for Use

- The relationships of push force the and current-limiting value represent reference values and may differ slightly from actual values.
- If the current-limiting value is less than 20%, the push force may fluctuate. Keep the current-limiting value to 20% or above.
- The travel speed is fixed to 20 mm/s during push-motion operation.
- For applications requiring the use of push operation, please use the RCP2. (Pulse Motor)

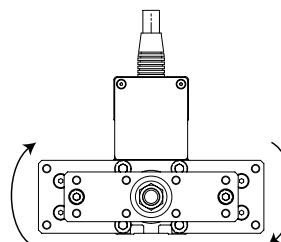
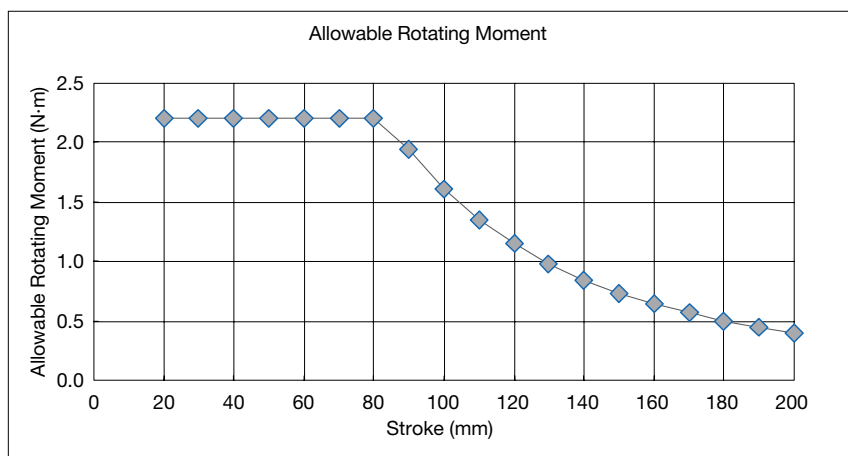
### RCP2-SRA4R/SRGS4R/SRGD4R Drawing Showing Correlation Between Push Force & Current Limitations



## Allowable Rotating Torque

If rotating torque is to be applied, keep the torque within the range specified below.

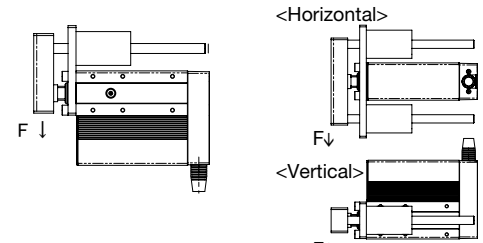
Take note that standard and single-guide types cannot receive rotating torque.



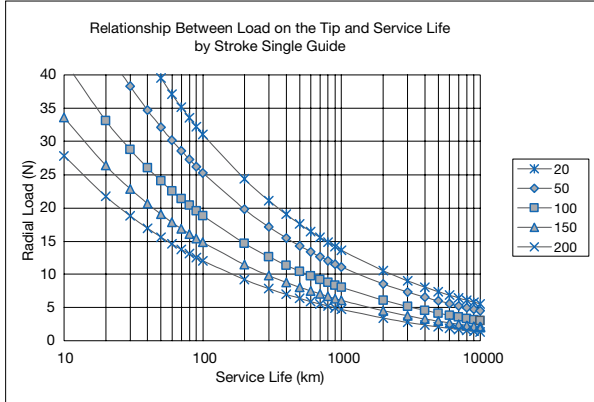
Relationship Between Allowable Load at Tip & Traveling Life

The greater the load at the guide tip, the shorter the traveling life becomes.

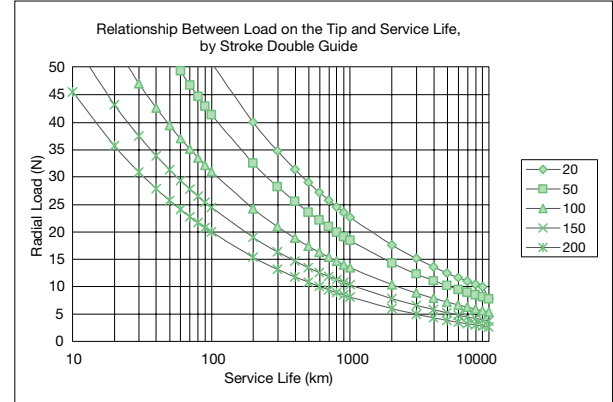
Select an appropriate model by considering an optimal balance between load and life.



Single guide type



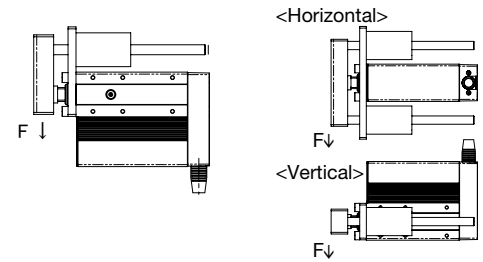
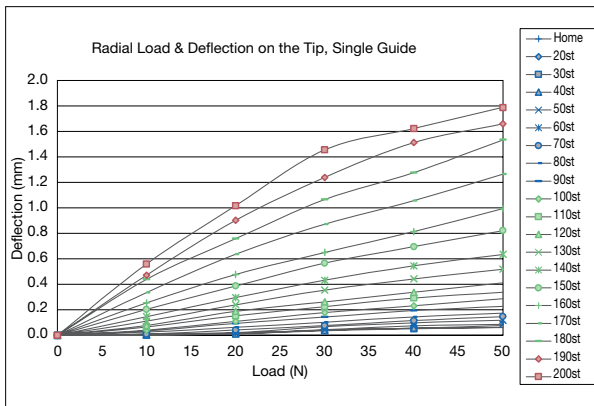
Double guide type (vertical and horizontal)



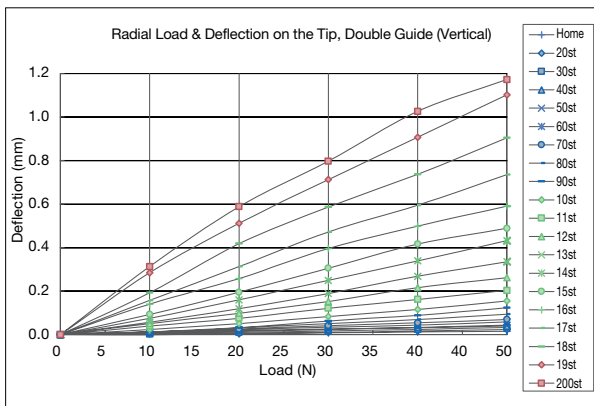
Radial Load & Deflection at Tip

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

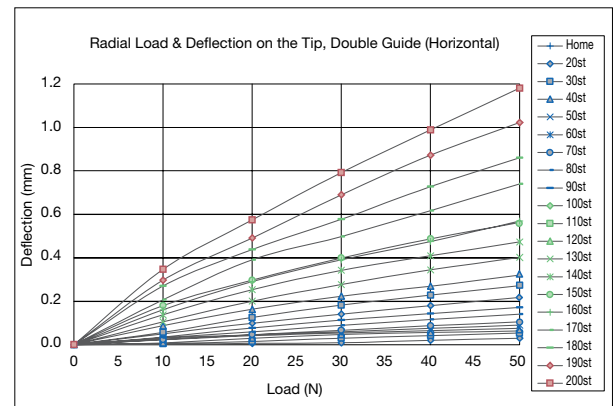
Single guide type



Double guide type (vertical)

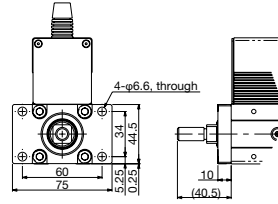


Double guide type (horizontal)



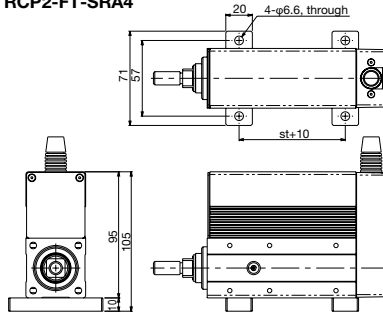
## Actuator options (flange/foot brackets)

### Model Options [FL] Single Model, RCP2-FL-SRA4



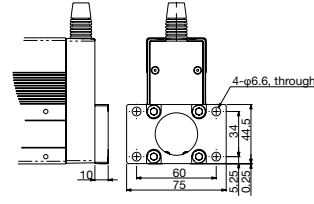
When flange bracket (front) is mounted

### Model Options [FT] Single Model, RCP2-FT-SRA4



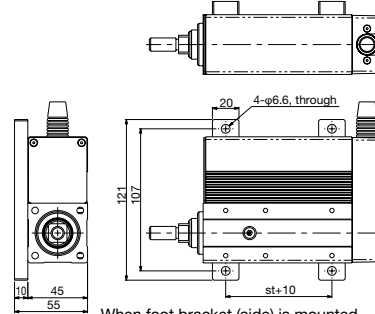
When foot bracket (bottom) is mounted

### Model Options [FLR] Single Model, RCP2-FL-SRA4



When flange bracket (rear) is mounted

### Model Options [FT2 (mounted on right side)/FT4 (mounted on left side)] Single Model, RCP2-FTS-SRA4



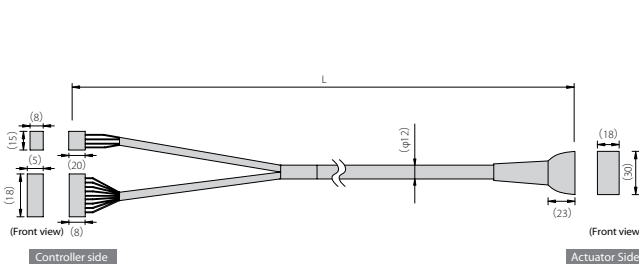
When foot bracket (side) is mounted

## Maintenance parts (motor-encoder cable)

### Motor-encoder cable for RCP2

Model **CB-PCS-MPA** □ □ □

\*Enter the cable length (L) for □□□, up to a maximum compatible length of 20m.  
Example: 080=8m

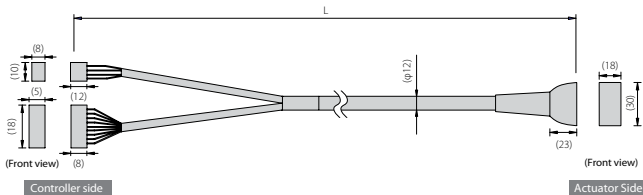


Signal	Pin No.	Wire color	Signal	Pin No.
A	B1	Black	A1	A
VMM	A2	White	B1	VMM
/A	A1	Red	A2	/A
B	B3	Green	B2	B
VMM	B2	Yellow	A3	VMM
/B	A3	Brown	B3	/B
			A4	NC
			B4	NC
BK+	14	Pink (Red*)	A5	BK+
BK-	13	Pink (Blue*)	B5	BK-
LS+	16	White (Red*)	A6	LS+
LS-	15	White (Blue*)	B6	LS-
A+	12	Orange (Red*)	A7	A+
A-	11	Orange (Blue*)	B7	A-
B+	10	Gray (Red*)	A8	B+
B-	9	Gray (Blue*)	B8	B-
NC	8		A9	NC
VPS	7	Orange (Blue* consecutive)	B9	VPS
VCC	6	Gray (Red* consecutive)	A10	VCC
GND	5	Gray (Blue* consecutive)	B10	GND
NC	4		A11	NC
FG	1	Shield	B11	FG

### Motor-encoder cable for RCA

Model **CB-ACS-MPA** □ □ □

\*Enter the cable length (L) for □□□, up to a maximum compatible length of 20m.  
Example: 080=8m



Signal	Pin No.	Wire color	Pin No.	Signal
U	1	Red	A1	U
V	2	Yellow	B1	V
W	3	Black	A2	W
			B2	NC
			A3	NC
			B3	NC
BK+	16	Yellow (Red*)	A4	BK+
BK-	15	Yellow (Blue*)	B4	BK-
LS+	18	Pink (Red*)	A5	LS+
LS-	17	Pink (Blue*)	B5	LS-
A+	14	White (Red*)	A6	A+
A-	13	White (Blue*)	B6	A-
B+	12	Orange (Red*)	A7	B+
B-	11	Orange (Blue*)	B7	B-
Z+	10	Gray (Red*)	A8	Z+
Z-	9	Gray (Blue*)	B8	Z-
-	8		A9	-
/PS	7	Orange (Red* consecutive)	B9	/PS
VCC	6	Orange (Blue* consecutive)	A10	VCC
GND	5	Gray (Red* consecutive)	B10	GND
NC	4	Gray (Blue* consecutive)	A11	NC
FG	1	Shield	B11	FG



Controllers for RCP2/RCA

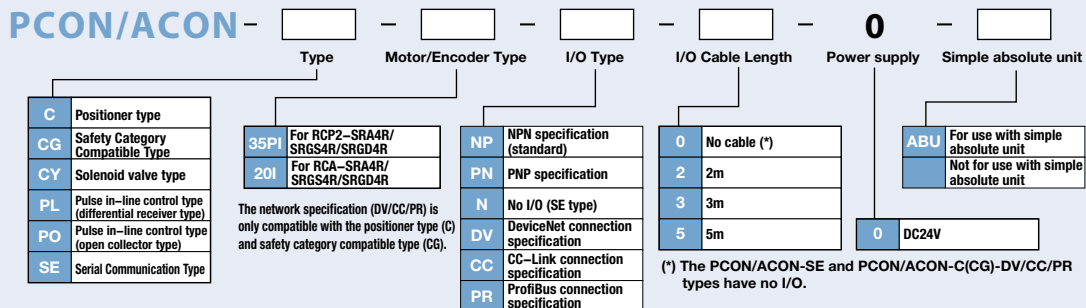
Model List

Model	PCON/ACON					RPCON RACON (ROBONET)	PSEL/ASEL
	C	CG	CY	PL/PO	SE		
Name	Positioner type	Safety category compatible type	Solenoid valve type	Pulse in-line control type	Serial Communication Type	Field Network type	Program Type
Appearance							
Features	Positioner can be positioned for up to 512 points.	Safety category compatible specification	Can be operated using the same control as an air cylinder.	An in-line pulse can be used to control as desired	Serial Communication Dedicated Controller (*1)	Can be operated through DeviceNet CC-Link Profibus	Programmable, Built-in Sequence Function

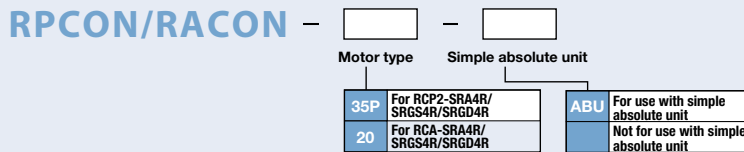
(\*1) A Gateway unit (sold separately) is required to use RPCON/RACON.

Model

PCON/ACON Controller

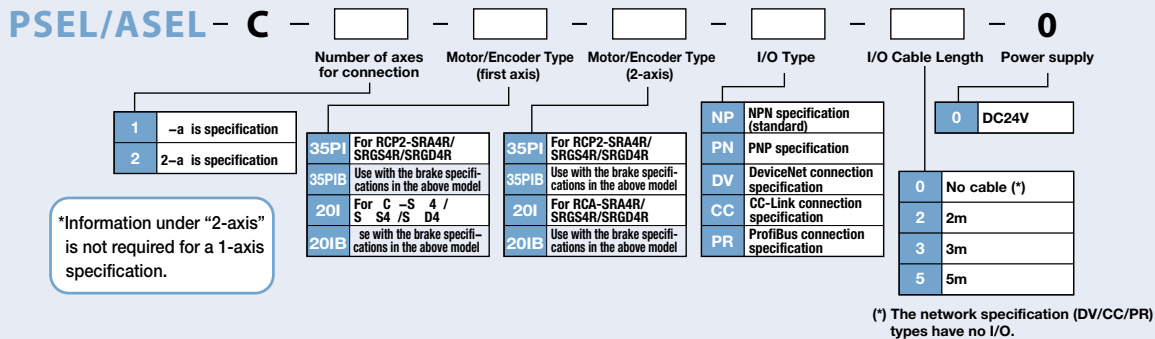


ROBONET Controller



\* A Gateway unit is required to connect a network when using the RPCON/RACON types. See the ROBONET catalog for details.

PSEL/ASEL Controller



## Specification Table

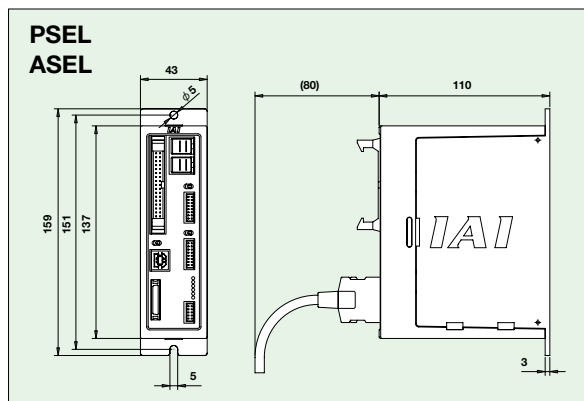
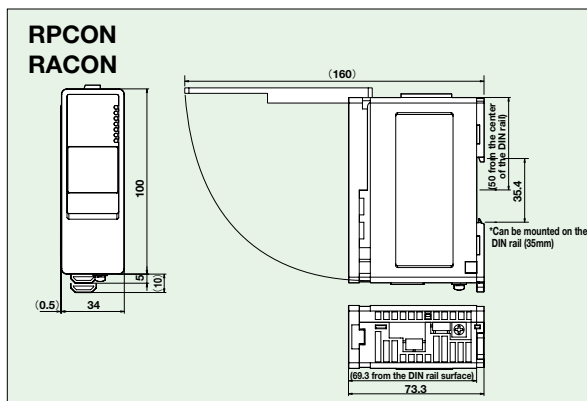
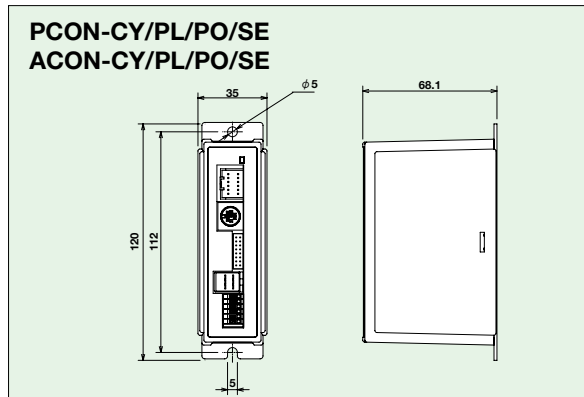
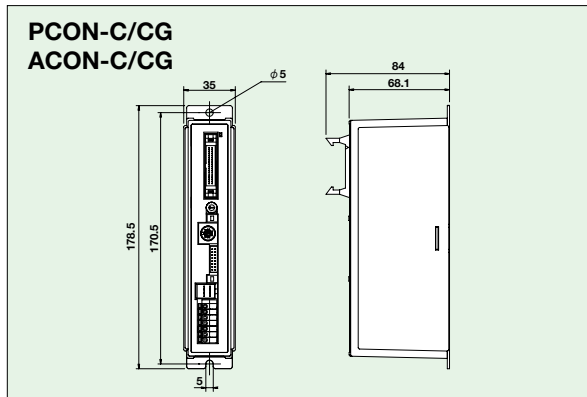
Item	Specification							
	PCON/ACON						RPCON/RACON (ROBONET)	PSEL/ASEL
Controller type	C	CG	CY	PL	PO	SE		
Maximum number of control axes	1-axis						Up to 16-axis can be connected and operated.	2-axes
Operation method	Positioner type		Solenoid valve type	Pulse series input type		Serial Communication Type	Field Network	Program
Number of positions	512 points		3 points	-		64 points	768 points	1500 points
I/O connector	40-pin connector		12-pin connector	14-pin connector		-	-	34-pin connector
Number of I/O	16 input, 16 output		4 input 6 output	4 input, 4 output		-	-	24 input 8 output
Serial communications	RS485							RS232
Peripheral Device Cables for communicating	CB-PAC-PIO		CB-PACY-PIO	CB-PACPU-PIO		CB-RCB-CTL002	-	CB-DS-PIO
Command pulse input method	-			Differential line driver	Open collector		-	
Maximum input pulse frequency	-			200kpps	60kpps		-	
Position detection method	Incremental encoder							
Motor/Encoder cable	CB-PCS-MPA□□□ (for PCON)/CB-ACS-MPA□□□ (for ACON)(Max. length 20m)							
Input power	DC24V±10%							
Power-supply capacity	RCP2 (all models)		Maximum 2A				Max. 2A (*1)	Max. 5.5A
	RCA	SRA4R SRG54R SRGD4R	Rated 1.3A, max. 4.4A (standard specification) Rated 1.3A, max. 2.5A (low-power specification)				(*2)	(*3)
Dielectric strength voltage	DC500V 1MΩ						DC500V 10MΩ	
Ambient operating temperature, Ambient operating humidity.	0 to 40°C 10 to 95% (free from condensation or corrosive gases)							
Ingress Protection	IP20							
Mass	Approx. 300g		Approx. 130g			Approx. 200g	Approx. 450g	

(\*1) During use, the following amount of power is required: 2A x the number of units used, plus the power consumed by the Gateway unit (approx. 0.6A).

(\*2) The following power capacity is required for RACON: ACON power capacity x number of units used, plus the power consumed by the Gateway unit (approx. 0.6A).

(\*3) The following power capacity is required for ASEL: ACON power capacity x number of control axes, plus the power for the control unit (1.2A).

## Dimensional Outline Drawing



# 21

Controller Options

Teaching Pendant

This is a teaching device that provides information on functions such as position input, running tests, and monitoring.

Item	RCM-E	RCM-P	CON-T	SEL-T-J	SEL-TD-J
Exterior dimensions					
Compatible controllers	PCON/ACON/RPCON/RACON			PSEL/ASEL	
Position input	○	○	○	○	○
Program input	×	×	×	○	○
Actuator operation		×	○	○	○
Display	16 characters x 2 lines, LCD display			20 characters x 4 lines, LCD display	
3 position enabling switch	×	×	×	×	○
Compatible with the ANSI standard	×	×	×	×	○
Compatible with the CE mark	×	×	○	○	○
Compatible with the UL standard	×	×	×	×	○
Cable length	5m				
Ambient operating temperature, humidity	0 to 40°C temperature, 85% RH or less				
Ingress Protection	-	-	-	IP54	-
Mass	Approx. 400g	Approx. 360g	Approx. 400g	Approx. 400g	Approx. 400g

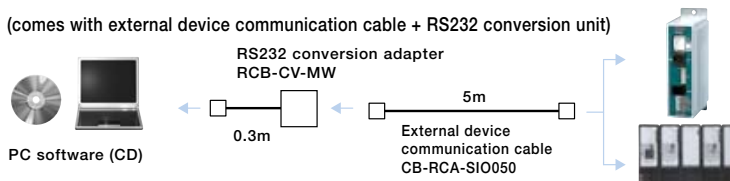
PC-compatible software (Windows only)

**Feature** A startup support software program offering program/position input function, test operation function, monitoring function, and more. The functions needed for debugging have been enhanced to help reduce the startup time.

PC-compatible software for PCON/ACON/RPCON/RACON (for RS232 connection)

**Model RCM-101-MW** (comes with external device communication cable + RS232 conversion unit)

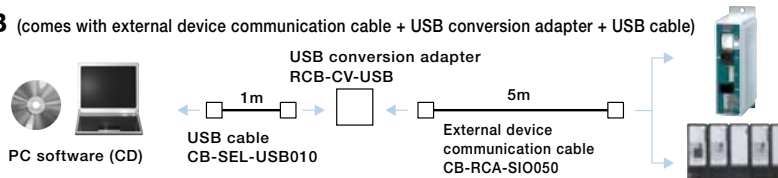
**Configuration**



PC-compatible software for PCON/ACON/RPCON/RACON (for USB connection)

**Model RCM-101-USB** (comes with external device communication cable + USB conversion adapter + USB cable)

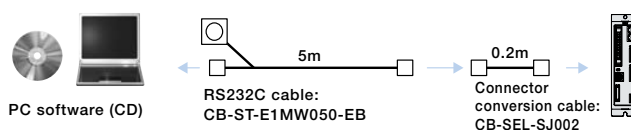
**Configuration**



PC-compatible software for PSEL/ASEL (for RS232 connection)

**Model IA-101-X-MW-J** (comes with RS232C cable + connector conversion cable)

**Configuration**



PC-compatible software (for USB connection)

**Model IA-101-X-USB** (for USB cable)

**Configuration**

