

ROBO Cylinder® RCP4 Series



Newest additions to the series!



Side-Mounted Motor Type

Cleanroom Type



High Speed
High power
RCP4

Power CON Realizing

1.5 Times the Speed and Double the Payload

The Power CON 150 series boosts the performance of ROBO Cylinder
 The **side-mounted motor specification** and **cleanroom specification**

- ▶ Improved dynamic performance (the speed is up to 1.5 times and payload is up to twice
 *Specific values vary depending on the model.
- ▶ New functions designed to enhance maintainability enable preventative maintenance,
- ▶ The smart tuning function lets you set up the operation of your equipment optimally with



RCP4 Series Variations

* Smaller size models (Width:32mm) SA3C and RA3C are added.
 Please contact IAI for more details.

Model type	Series	Shape	Type	External view	Actuator size (width)	Stroke	Ball screw lead (mm)	Maximum Speed (mm/s)	Maximum payload (kg)		Page
									Horizontal	Vertical	
Straight motor specification	RCP4	Slider type	SA5C		52mm	50~800	20	1440	6.5	1	P.9
			SA6C		58mm		12	900	9	2.5	P.11
			SA7C		73mm		6	450	18	6	P.13
		Rod type	RA5C		52mm	50~400	3	225	20	12	P.21
			RA6C		61mm		24	800	10	1	P.23
							12	700	15	2.5	
							6	450	25	6	
							3	225	25	12	
							24	1200	20	3	
							16	980	40	8	
							8	490	45	16	
							4	245	45	25	

*The maximum horizontal payload for the rod type is for when an external guide is used in combination.

Controller

Series	Type		
PCON	CB	* Please refer our Controller General Catalog for latest model information and/or contact IAI.	

150% the Output, Achievable with Standard Controllers

standard motorized cylinders to amazing new heights.
(class 10) have been added to the power controller **RCP4** series.

IAI's conventional models*) significantly boosts the productivity of your system.

so less time is needed for maintenance.
ease.



* Smaller size models (Width:32mm) SA3R and SA3C are added.
Please contact IAI for more details.

Model type	Series	Shape	Type	External view	Actuator size (width)	Stroke	Ball screw lead (mm)	Maximum Speed (mm/s)	Maximum payload (kg)		Page
									Horizontal	Vertical	
NEW Side-mounted motor specification	RCP4	NEW Slider type	SA5R		52mm	50~800	20	1440	6.5	1	P.15
			12		900		9	900	9	2.5	P.15
			6		450		18	450	18	6	P.15
			3		225		20	225	20	12	P.15
			20		1280		10	1280	10	1	P.17
		NEW Rod type	SA6R		58mm		12	900	15	2.5	P.17
			6		450		25	450	25	6	P.17
			3		225		25	225	25	12	P.17
			24		1000		20	1000	20	3	P.19
			16		840		40	840	40	8	P.19
NEW Cleanroom specification	RCP4CR	NEW Slider type	SA7R		73mm	50~400	8	490	45	16	P.19
			4		210		45	210	45	25	P.19
			20		800		6	800	6	1.5	P.25
			12		700		25	700	25	4	P.25
			6		450		40	450	40	10	P.25
		NEW Rod type	RA5R		52mm		3	225	60	20	P.25
			24		800		20	800	20	3	P.27
			16		560		50	560	50	8	P.27
			8		420		60	420	60	18	P.27
			4		175		80	175	80	28	P.27
NEW Cleanroom specification	RCP4CR	NEW Slider type	SA5C		52mm	50~800	20	1440	6.5	1	P.29
			12		900		9	900	9	2.5	P.29
			6		450		18	450	18	6	P.29
			3		225		20	225	20	12	P.29
			20		1440		10	1440	10	1	P.31
		NEW Rod type	SA6C		58mm		12	900	15	2.5	P.31
			6		450		25	450	25	6	P.31
			3		225		25	225	25	12	P.31
			24		1200		20	1200	20	3	P.33
			16		980		40	980	40	8	P.33
		NEW Slider type	SA7C		73mm		8	490	45	16	P.33
			4		245		45	245	45	25	P.33

Features

Shorter Takt Time Significantly Boosts

New Functions of **RCP4** Actuator

1

1.5 times higher maximum speed and double the payload when combined with a Power CON 150

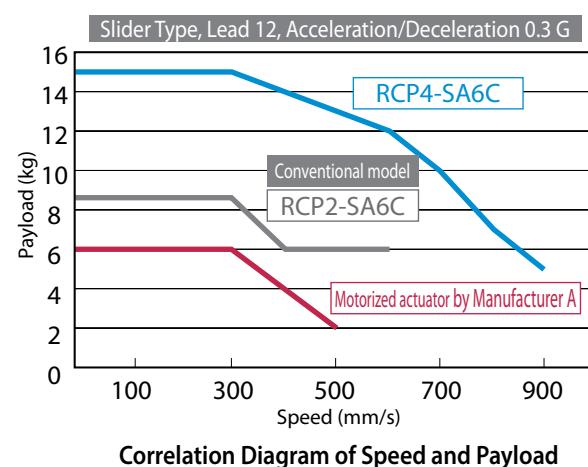
When the new controller (Power CON 150) equipped with our newly developed high-output driver (patent pending) is used, the maximum speed increases significantly by up to 1.5 times the levels achievable with IAI's conventional models, while the payload is greater by up to twice (*).

In addition to these amazing improvements in specifications, the maximum speed does not drop as much even when the payload increases due to increased torque with the high speed motor, meaning that dynamic performance equivalent to that of a higher-class model can be achieved at lower cost.

(* The specific rates of improvement vary depending on the model.



Power CON 150 PCON-CB
(Previous model: PCON-CA)

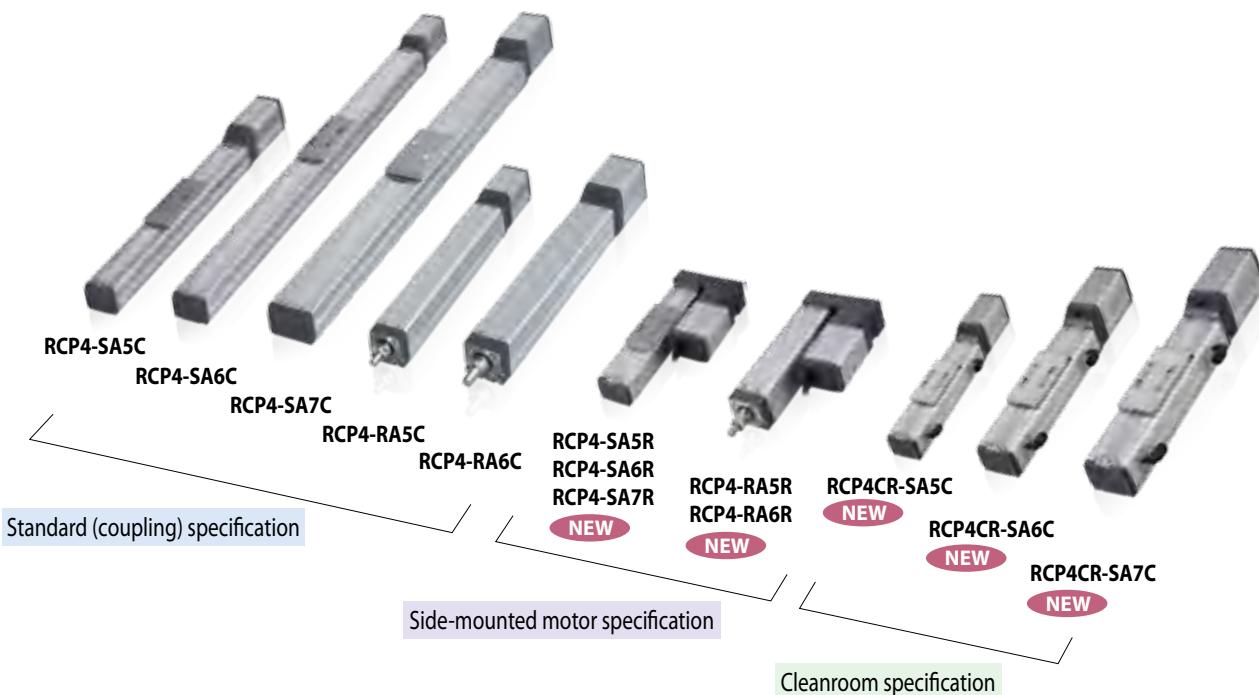


Correlation Diagram of Speed and Payload

2

Extended lineup with the latest additions: the side-mounted motor specification and the cleanroom specification

Three slider types (SA5/SA6/SA7) and two rod types (RA5/RA6) are now available in the side-mounted motor specification characterized by a significantly shorter overall length for space-saving design. Three slider types are also available in the cleanroom specification conforming to cleanliness class 10.



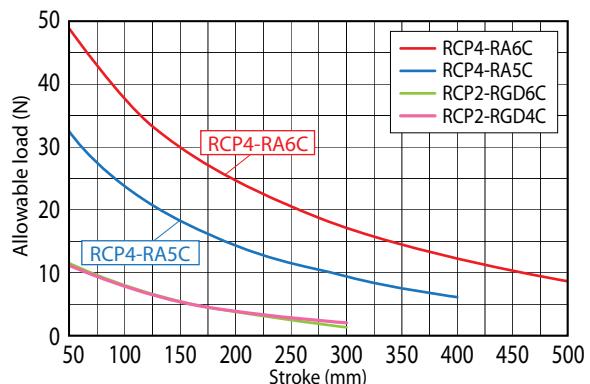
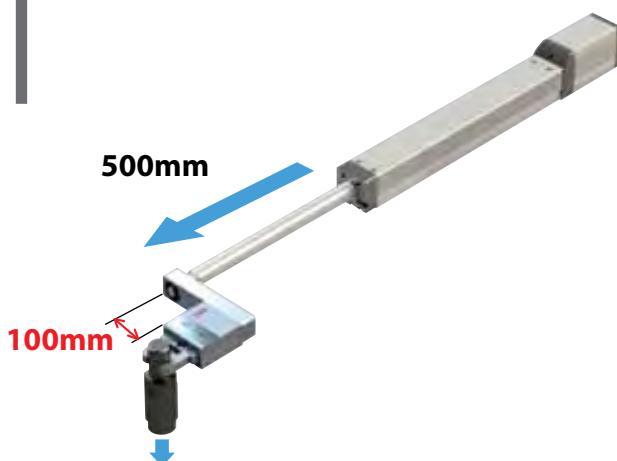
3

the Productivity of Your System

3

The rod type <Radial Cylinder> with a built-in guide mechanism can carry radial loads over a long stroke (500mm).

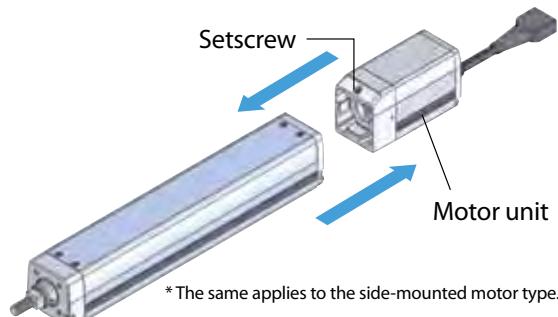
The rod type <Radial Cylinder> has a built-in guide mechanism in the actuator to carry radial loads on the rod over a long stroke of up to 500 mm. The actuator can also support a radial load at a position offset from the center of the rod.



4

Easy replacement of the motor with removal of only one setscrew

The motor has been unitized for easy replacement. The actuator and motor unit can be separated and replaced by removing only one setscrew, so the time required for maintenance becomes significantly shorter.

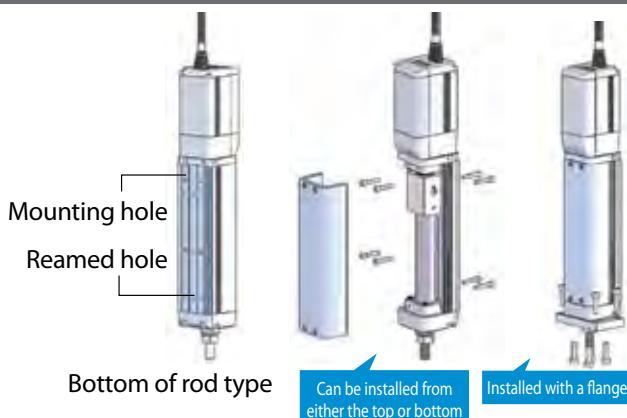


* The same applies to the side-mounted motor type.

5

Slider types have mounting holes compatible with the RCP2

Slider types have mounting holes that are compatible with RCP2 actuators, meaning that you can replace your current RCP2 actuator with a RCP4 with ease. Also, the mounting holes provided on rod types are the same as those provided on slider types, instead of T-slots found on the RCP2, and reamed holes are also provided to significantly improve installation repeatability.



Features

Functions to Enhance Maintainability

Functions of Power CON 150 PCON-CB

6

Keep track of the production volume and utilization ratio with the total movement counter function

The total number of times the actuator has moved is counted and recorded in the controller, and a signal is output to an external device once the pre-defined count is exceeded. This function can be used to keep track of the production volume, utilization ratio, etc.



7

Know when to perform maintenance with the total travel counter function

The total distance travelled by the actuator is counted and recorded in the controller, and a signal is output to an external device once the pre-defined count is exceeded. By using this function, you know when to add grease or perform periodic maintenance.

8

Retain alarm generation times with the calendar function

The calendar function (clock function) lets you add timestamps to the history of alarms, etc. This information is useful in troubleshooting, etc.

Date/Time	Alarm (H/D/B, 0/min)
detected last	FFF PowerCP No Error
History 1	DCE Control power voltage reduction
History 2	FFF PowerCP No Error
History 3	DCE Control power voltage reduction
History 4	FFF PowerCP No Error
History 5	DCE Control power voltage reduction
History 6	DCE Control power voltage reduction
History 7	FFF PowerCP No Error
History 8	
History 9	
History 10	
History 11	
History 12	
History 13	
History 14	
History 15	

9

The smart tuning function lets you set up the operation conditions of your equipment optimally with ease

The smart tuning function is a new feature introduced to the ROBO Cylinder PC software (version 8.03.00.00 or later) and touch panel teaching pendant (model number: CON-PTA). When the actuator is connected to a controller supporting the smart tuning function, all the user needs is to enter the actuator type, transfer load, etc., and the optimal acceleration/deceleration and speed will be set automatically according to the load.

1. Setting the acceleration/deceleration from the speed

Enter a desired speed in the position data table, and the maximum settable acceleration/deceleration will be set automatically according to the pre-defined load-speed combinations.

2. Setting the acceleration/deceleration and speed from the travel

Specify the position data number associated with desired start/end positions of movement and set a desired travel distance, and the combination of acceleration/deceleration and speed that gives the shortest travel time will be set automatically.

10

Three controller operation types to choose from

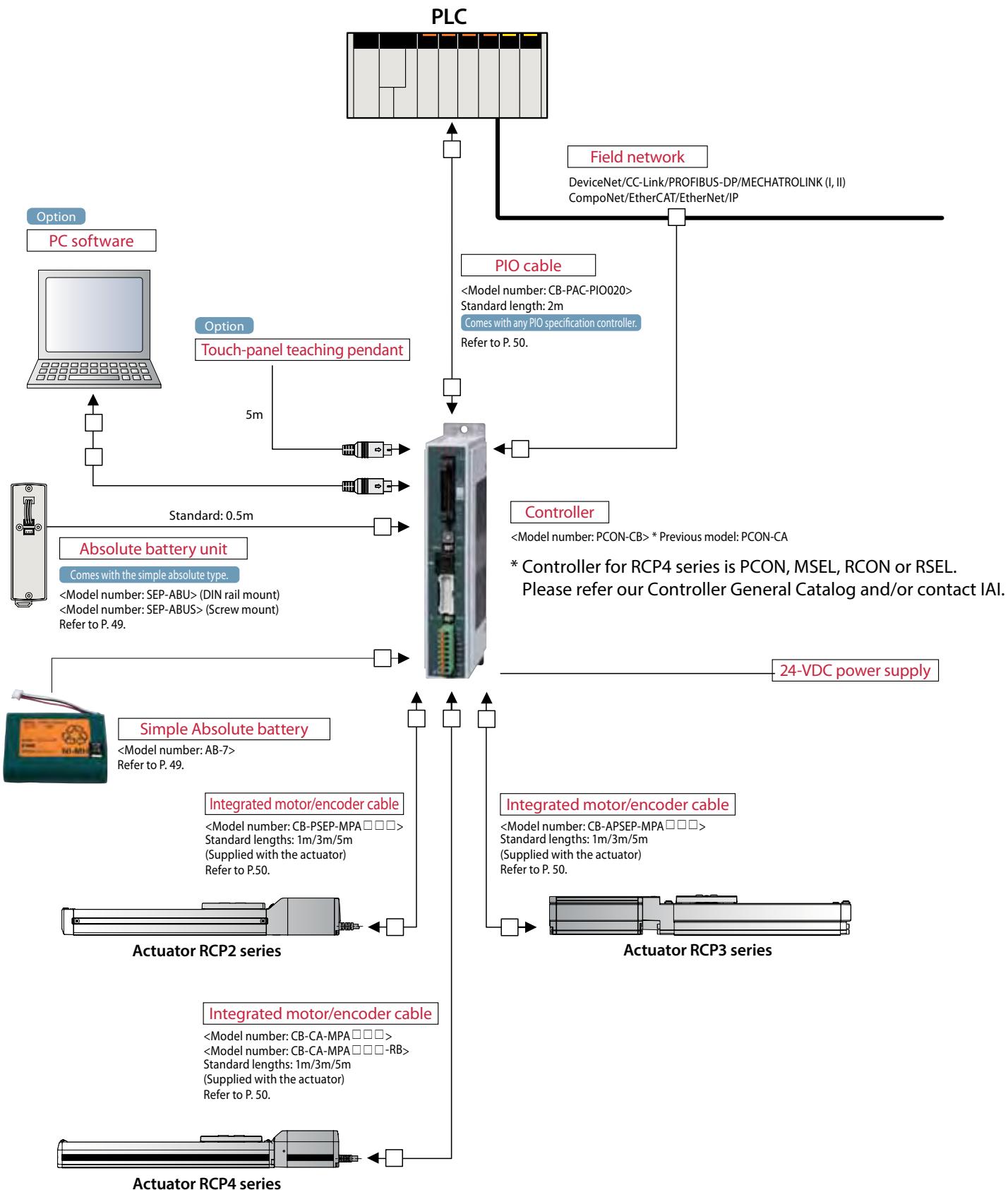
1. Positioner type that operates the actuator via ON/OFF of PIOs

2. Pulse-train type that operates the actuator by sending pulses from the positioning unit

3. Field network type that operates the actuator by sending position data via the network

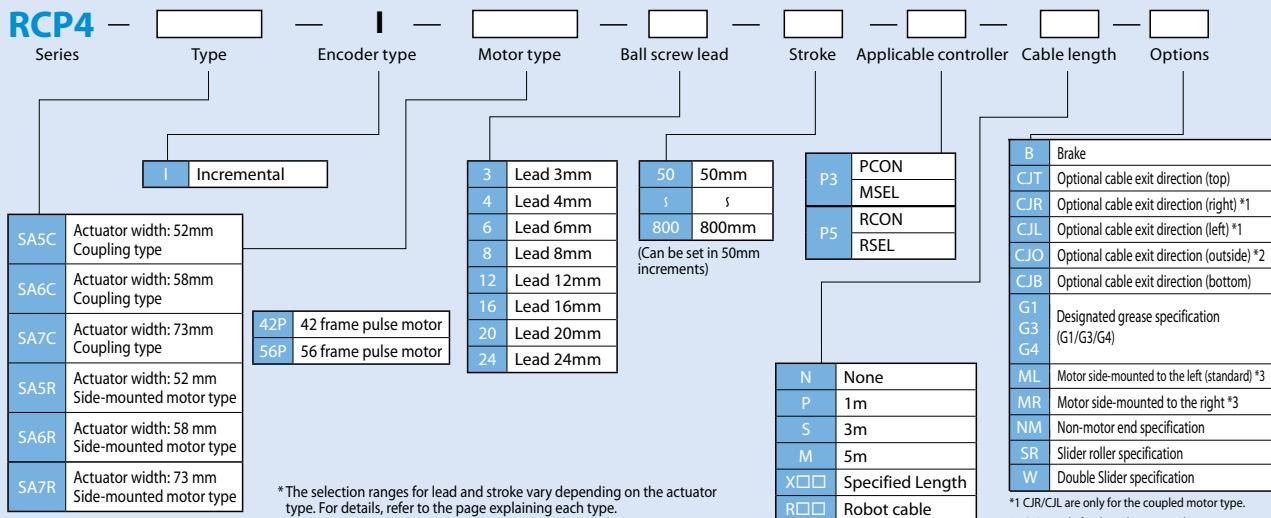
5

System Configuration



Model Specification Items

<Slider type>

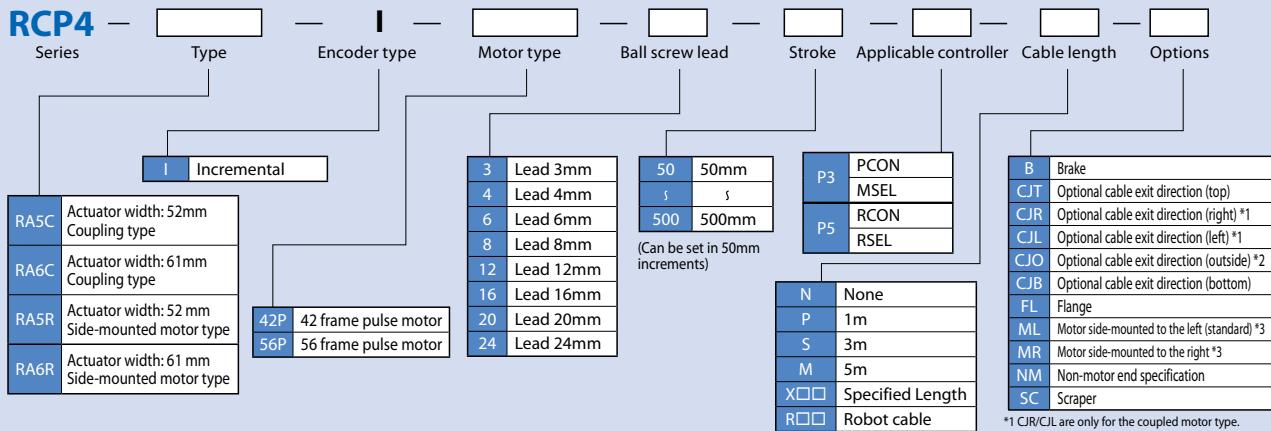


*1 CJR/CJL are only for the coupled motor type.

*2 CJO is only for the side-mounted motor type.

*3 Be sure to specify either "ML" or "MR" for the side-mounted motor type.

<Rod type>

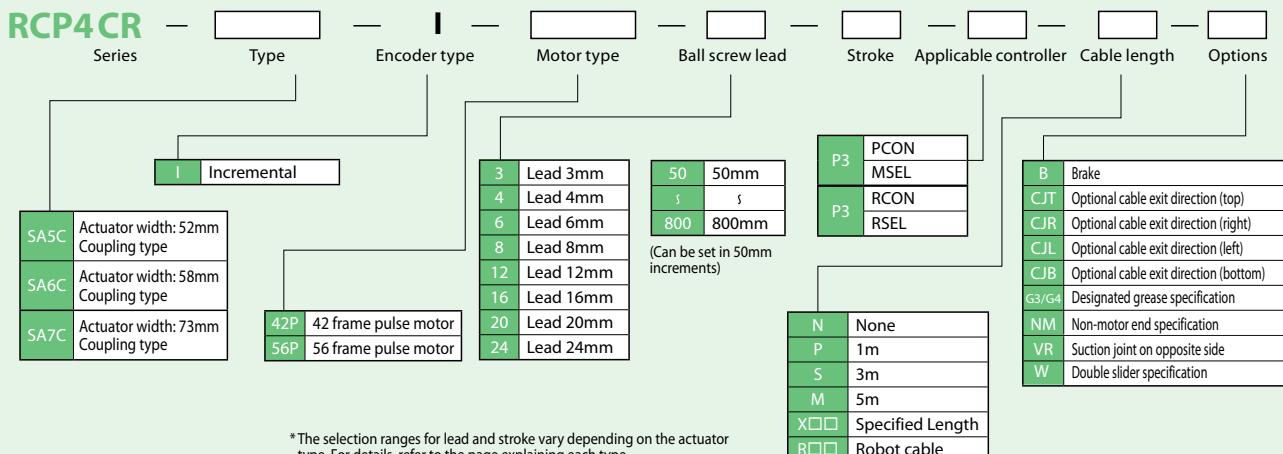


*1 CJR/CJL are only for the coupled motor type.

*2 CJO is only for the side-mounted motor type.

*3 Be sure to specify either "ML" or "MR" for the side-mounted motor type.

<Cleanroom type>



Brake
Option code: B

Applicable models

Description

All models

A mechanism to hold the slider in place when the actuator is used vertically, so that it will not drop and damage the work part, etc., when the power or servo is turned off.

Optional cable exit direction
Option code: CJT
CJR
CJL
CJB
CJO

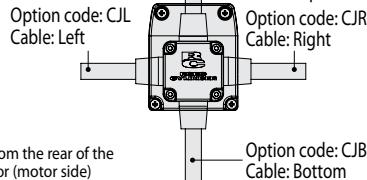
Applicable models

Description

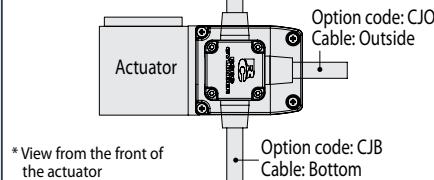
All models

The actuator cable exit direction from the motor cover of the actuator is changed.

Motor coupled type



Side-mounted motor type



Motor side-mounted direction
Option code: ML/MR

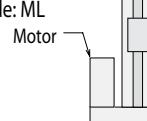
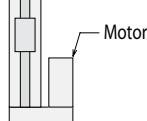
* Be sure to specify either "ML" or "MR" for the side-mounted motor type.

Applicable models

Description

RCP4-SA5R/SA6R/SA7R/RA5R/RA6R

The motor side-mounted direction can be specified. ML and MR represent the left and right, respectively, as viewed from the motor side of the actuator.

Motor side-mounted to the left (standard)
Option code: MLMotor side-mounted to the right
Option code: MR

Non-motor end specification
Option code: NM

Applicable models

Description

All models

Select this option if you want to change the home position of the actuator slider or rod from the normal position (motor end) to the front end.

Flange
Option code: FL

Applicable models

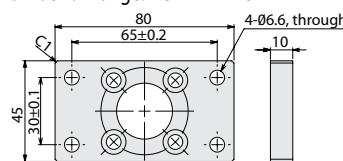
Description

RCP4-RA5C/RA6C/RA5R/RA6R

A bracket used to secure a rod actuator from the actuator side. The flange can be purchased separately later on.

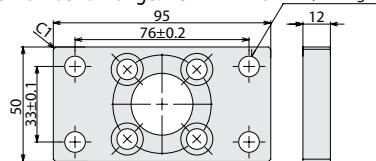
RCP4-RA5 type

Model number of flange: RCP4-FL-RA5



RCP4-RA6 type

Model number of flange: RCP4-FL-RA6 4-09, through



Scraper
Option code: SC

Applicable models

Description

RCP4-RA5C/RA6C/RA5R/RA6R

When a rod actuator is used, select this option if you want to prevent dust attached to the rod from entering the actuator.

Slider roller specification
Option code: SR

Applicable models

Description

RCP4-SA5C/SA6C/SA7C/SA5R/SA6R/SA7R

The slider of the standard slider type specification is changed to the same roller structure of the cleanroom specification.

When the slider roller specification is selected, the appearance and dimensions of the slider cover become the same as those of the cleanroom specification.

Vacuum joint on opposite side
Option code: VR

Applicable models

Description

RCP4CR-SA5C/SA6C/SA7C

The standard specification is that the vacuum joint is installed on the left side of the actuator as viewed from the motor side. This option changes the vacuum joint position to the right side (opposite side).

Designated grease specification (G1/G3/G4)

Applicable models

Description

Most models except rod type

Change the grease applied to the ball screw, linear guide, and rod sliding surface of the actuator to low dust-generating grease for clean environments.

(For standard model: G1: Kuroda C grease, G3: AFF grease, G4: AFE-CA grease)

(For cleanroom specification: G3: AFF grease, G4: AFE-CA grease)

RCP4-SA5C

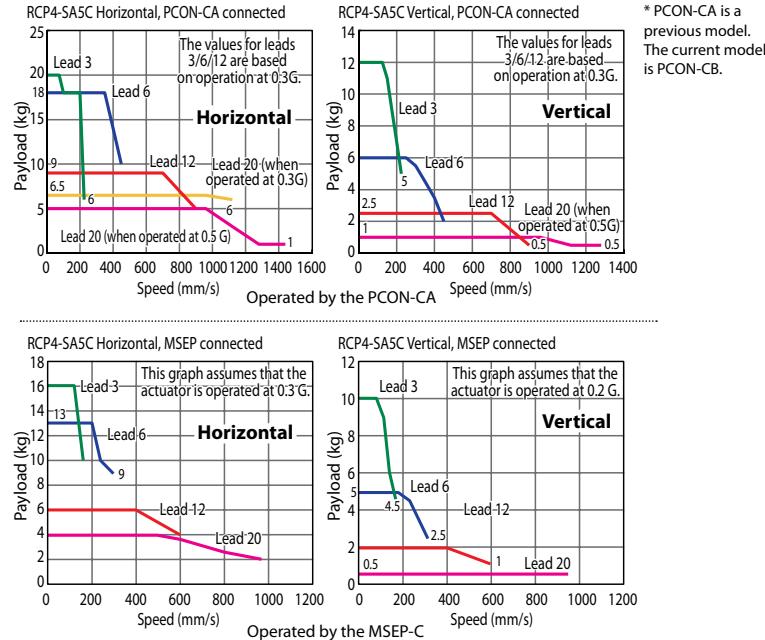
ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 52mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	SA5C	—	I	—	42P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 800: 800mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.													



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
- (*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P.37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
			Horizontal (kg) Vertical (kg)	
RCP4-SA5C-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA MSEP-C	6.5 4 0.5 (*)	1
RCP4-SA5C-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA MSEP-C	9 6 2	2.5
RCP4-SA5C-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA MSEP-C	18 13 5	6
RCP4-SA5C-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA MSEP-C	20 16 10	12

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	PCON-CA	1440 <1280>	1225	1045	900	785	690	610	
	MSEP-C	960			900	785	690	610	
12	PCON-CA	900 795	665	570	490	425	375	330	
	MSEP-C	600		570	490	425	375	330	
6	PCON-CA	450 395	335	285	245	215	185	165	
	MSEP-C	300		285	245	215	185	165	
3	PCON-CA	225 195	165	140	120	105	90	80	
	MSEP-C	150		140	120	105	90	80	

The values in <> apply when the actuator is used vertically.

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

② Cable Length

Type	Cable symbol		Standard price
	P (1m)	S (3m)	
	M (5m)	X06 (6m) ~X10 (10m)	
Special length	X11 (11m) ~X15 (15m)	X16 (16m) ~X20 (20m)	
	R01 (1m) ~R03 (3m)	R04 (4m) ~R05 (5m)	
	R06 (6m) ~R10 (10m)	R11 (11m) ~R15 (15m)	
	R16 (16m) ~R20 (20m)		
Robot cable			

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 4.9 N·m, Mb: 6.8 N·m, Mc: 11.7 N·m
Allowable overhang	150mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

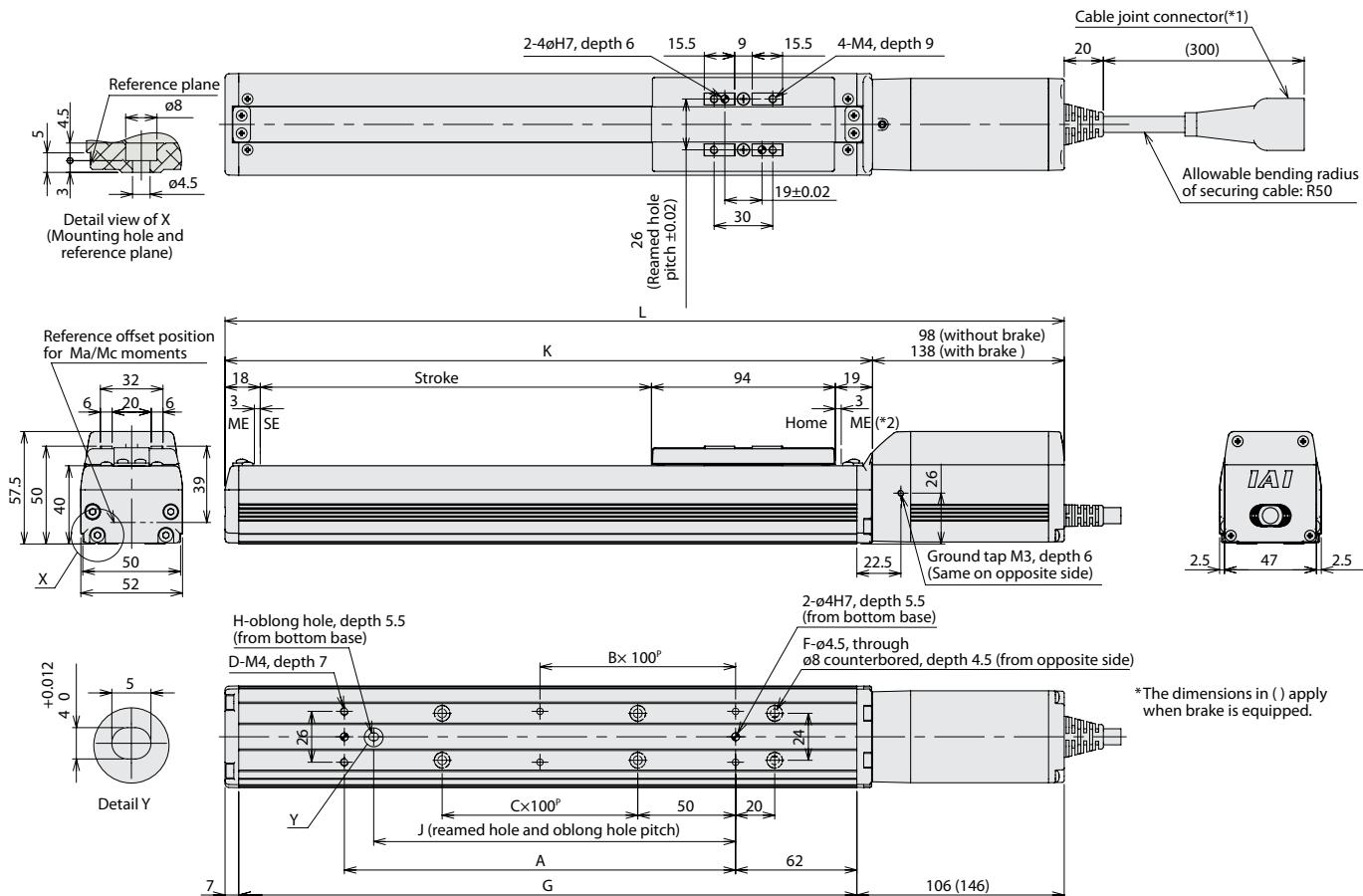
(*1) The value at lead 20 is shown in []. (*2) Based on 5,000km of traveling life

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

		Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		Without brake	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029
	With brake	319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069	
	A	73	100	100	200	200	300	300	300	400	400	500	500	600	600	700	800	
	B	0	0	0	1	1	2	2	3	3	3	4	4	5	5	6	7	
	C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	
	D	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	
	F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
	G	166	216	266	316	366	416	466	516	566	616	666	716	766	816	866	916	
	H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
	K	181	231	281	331	381	431	481	531	581	631	681	731	781	831	881	931	
Mass	Without brake	1.5	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.7	
(kg)	With brake	1.7	1.9	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.5	3.6	3.7	3.9	

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-SA6C

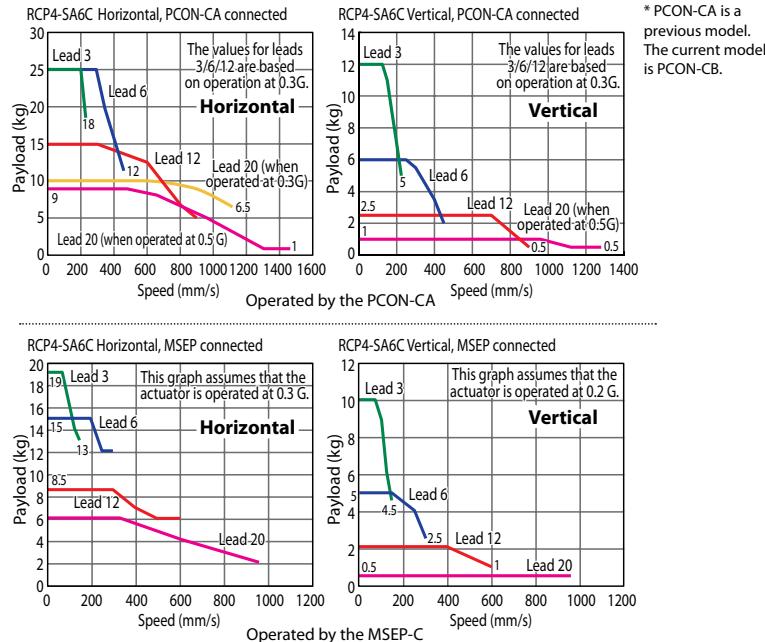
ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 58 mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	SA6C	—	I	—	42P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
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(*)The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P.37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload



Actuator Specifications

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Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
			Horizontal (kg) Vertical (kg)	
RCP4-SA6C-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA MSEP-C	10 6 0.5 (*)	1
RCP4-SA6C-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA MSEP-C	15 8.5 2	2.5
RCP4-SA6C-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA MSEP-C	25 15 5	6
RCP4-SA6C-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA MSEP-C	25 19	12 10

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2 G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	PCON-CA	1440 <1280>	1230	1045	905	785	690	615	
	MSEP-C	960		905	785	690	615		
12	PCON-CA	900	795	670	570	490	430	375	335
	MSEP-C	600		570	490	430	375	335	
6	PCON-CA	450	395	335	285	245	215	185	165
	MSEP-C	300		285	245	215	185	165	
3	PCON-CA	225	195	165	140	120	105	90	80
	MSEP-C	150		140	120	105	90	80	

The values in <> apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
Special length	M (5m)	—
	X06 (6m) ~X10 (10m)	—
Robot cable	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
R01 (1m) ~R03 (3m)	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
R06 (6m) ~R10 (10m)	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
R16 (16m) ~R20 (20m)	R16 (16m) ~R20 (20m)	—
	R17 (17m) ~R22 (22m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 8.9 N·m, Mb: 12.7 N·m, Mc: 18.6 N·m
Allowable overhang	220mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1) The value at lead 20 is shown in []. (*2) Based on 5,000km of traveling life

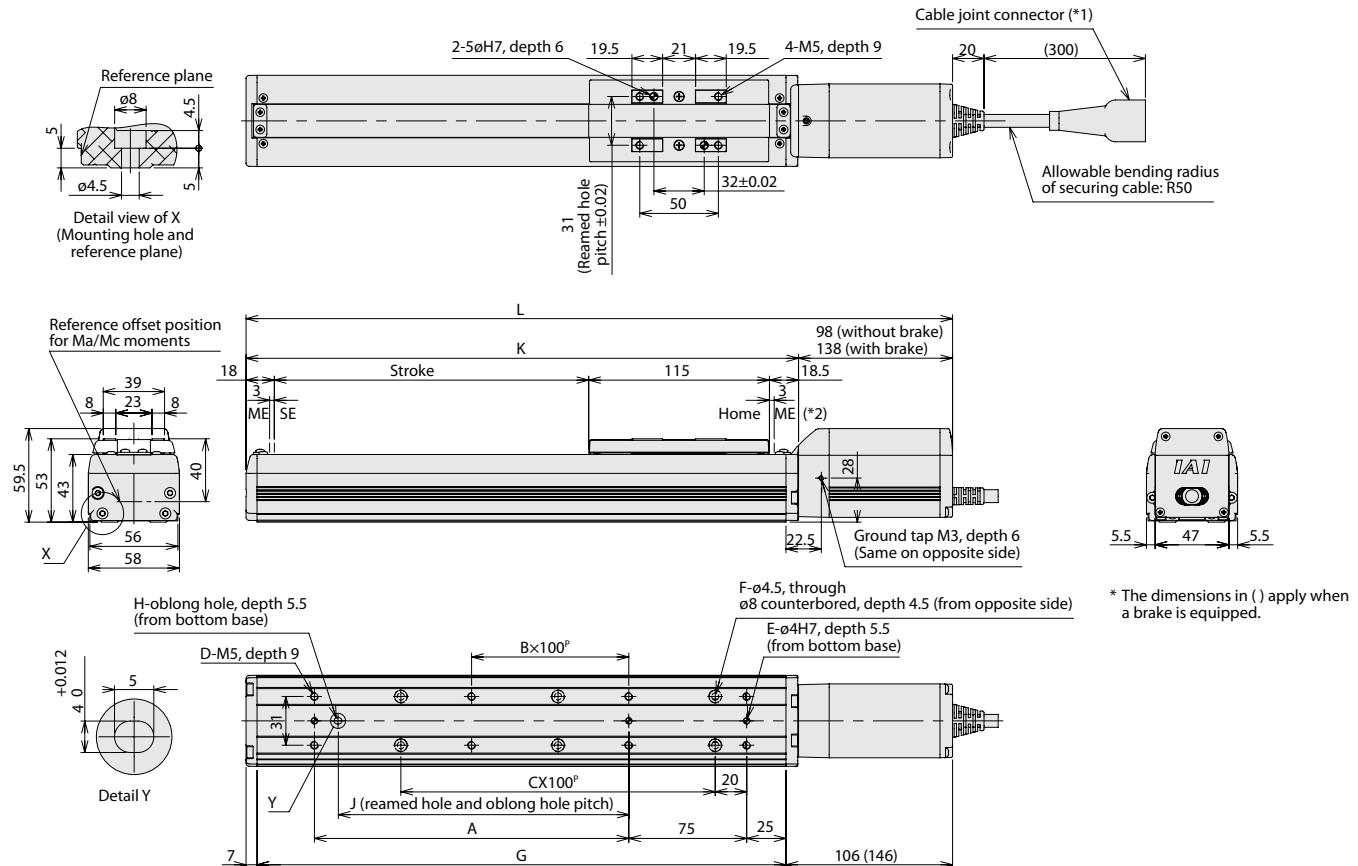
* Please see page 7 and 8 of the RCP4 catalog (CJ0182-4A-UST-1.2A) for all available options.

Dimensional Drawings

CAD drawings can be downloaded from the website. www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without brake	299.5	349.5	399.5	449.5	499.5	549.5	599.5	649.5	699.5	749.5	799.5	849.5	899.5	949.5	999.5	1049.5
	With brake	339.5	389.5	439.5	489.5	539.5	589.5	639.5	689.5	739.5	789.5	839.5	889.5	939.5	989.5	1039.5	1089.5
A		0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B		0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E		2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
G		186.5	236.5	286.5	336.5	386.5	436.5	486.5	536.5	586.5	636.5	686.5	736.5	786.5	836.5	886.5	936.5
H		0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J		0	85	85	185	185	285	385	385	485	485	585	585	685	685	785	785
K		201.5	251.5	301.5	351.5	401.5	451.5	501.5	551.5	601.5	651.5	701.5	751.5	801.5	851.5	901.5	951.5
Mass (kg)	Without brake	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.1	4.3
	With brake	2.2	2.3	2.5	2.6	2.8	3.0	3.1	3.3	3.4	3.6	3.7	3.9	4.1	4.2	4.4	4.5

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-SA7C

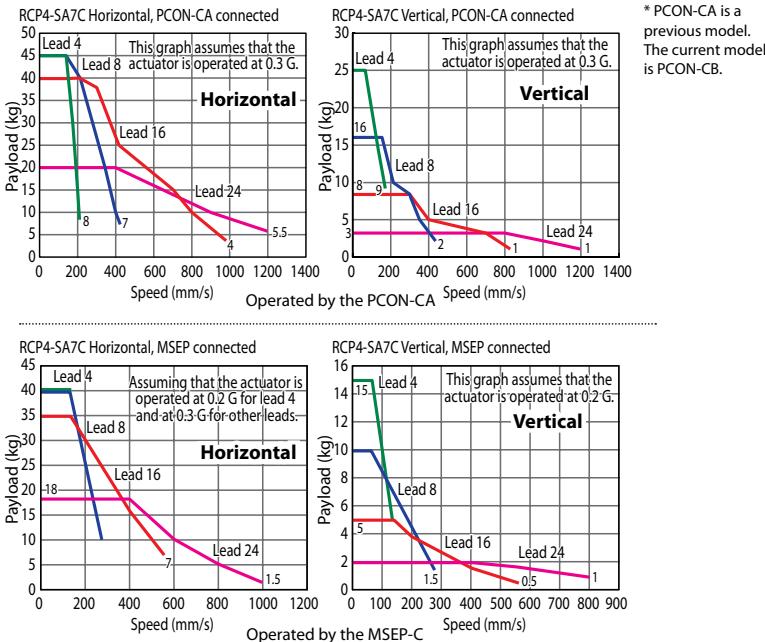
ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 73mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	SA7C	—	I	—	56P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
I: Incremental specification	56P: Pulse motor, size 56□	24: 24mm 16: 16mm 8: 8mm 4: 4mm	50: 50mm 80: 80mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.													



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*)The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P.37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
			Horizontal (kg) Vertical (kg)	
RCP4-SA7C-I-56P-24-①-P3-②-③	24	PCON-CA	20 3	50~800 (every 50mm)
		MSEP-C	18 2 (*)	
RCP4-SA7C-I-56P-16-①-P3-②-③	16	PCON-CA	40 8	50~800 (every 50mm)
		MSEP-C	35 5 (*)	
RCP4-SA7C-I-56P-8-①-P3-②-③	8	PCON-CA	45 16	50~800 (every 50mm)
		MSEP-C	40 10 (*)	
RCP4-SA7C-I-56P-4-①-P3-②-③	4	PCON-CA	45 25	
		MSEP-C	40 (*) 15 (*)	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	500 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
24	PCON-CA	1200			1155	1010	890	790	
	MSEP-C		1000<800>				890<800>	790	
16	PCON-CA	980<840>	865<840>	750	655	580	515		
	MSEP-C			560					
8	PCON-CA	490	430	375	325	290	255		
	MSEP-C		280					255	
4	PCON-CA	245<210>	215<210>	185	160	145	125		
	MSEP-C		140						125

The values in <> apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
Special length	M (5m)	—
	X06 (6m) ~X10 (10m)	—
Robot cable	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
R01 (1m) ~R03 (3m)	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
R06 (6m) ~R10 (10m)	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
R16 (16m) ~R20 (20m)	R16 (16m) ~R20 (20m)	—
		—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø12mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 13.9 N·m, Mb: 19.9 N·m, Mc: 38.3 N·m
Allowable overhang	230mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

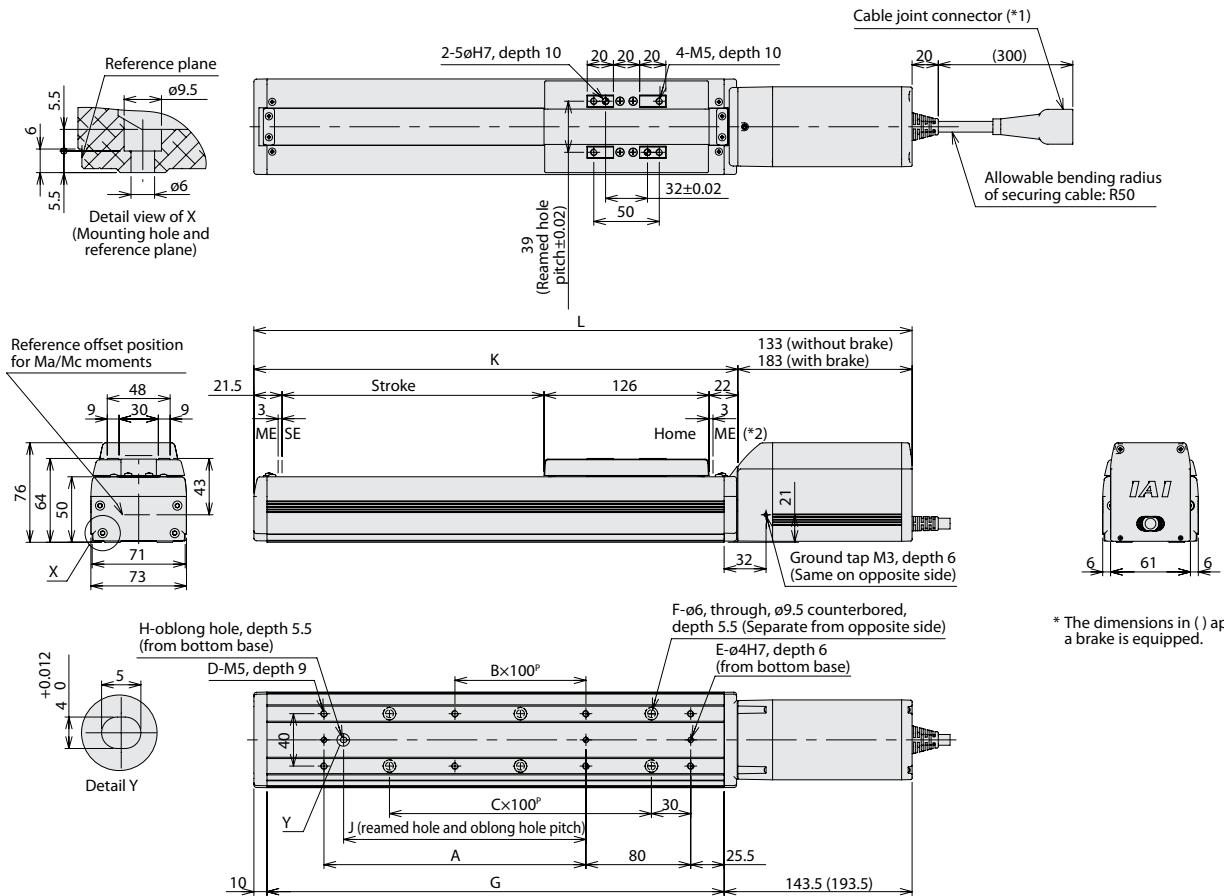
(*1) The value at lead 24 is shown in []. (*2) Based on 5,000km of traveling life

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



* The dimensions in () apply when a brake is equipped.

■ Dimensions and Mass by Stroke

	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without brake	352.5	402.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	1052.5	1102.5
	With brake	402.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	1052.5	1102.5	1152.5
A		0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B		0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E		2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
G		199	249	299	349	399	449	499	549	599	649	699	749	799	849	899	949
H		0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J		0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
K		219.5	269.5	319.5	369.5	419.5	469.5	519.5	569.5	619.5	669.5	719.5	769.5	819.5	869.5	919.5	969.5
Mass (kg)	Without brake	3.4	3.6	3.8	4.1	4.3	4.6	4.8	5.1	5.3	5.6	5.8	6.0	6.3	6.5	6.8	7.0
	With brake	3.9	4.1	4.3	4.6	4.8	5.1	5.3	5.6	5.8	6.1	6.3	6.5	6.8	7.0	7.3	7.5

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-SA5R

ROBO Cylinder, Slider Type, Side-mounted Motor Type, Actuator Width 52mm, 24-V Pulse Motor

Model Specification Items	RCP4	— SA5R —	I	— 42P —	□	— Lead —	□	— Stroke —	□	— Applicable controller —	□	— Cable length —	□	— Options —
	Series	— Type	— Encoder type	— Motor type	I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 80: 80mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.			
														* Be sure to specify either "ML" or "MR" as the motor side-mounted direction.

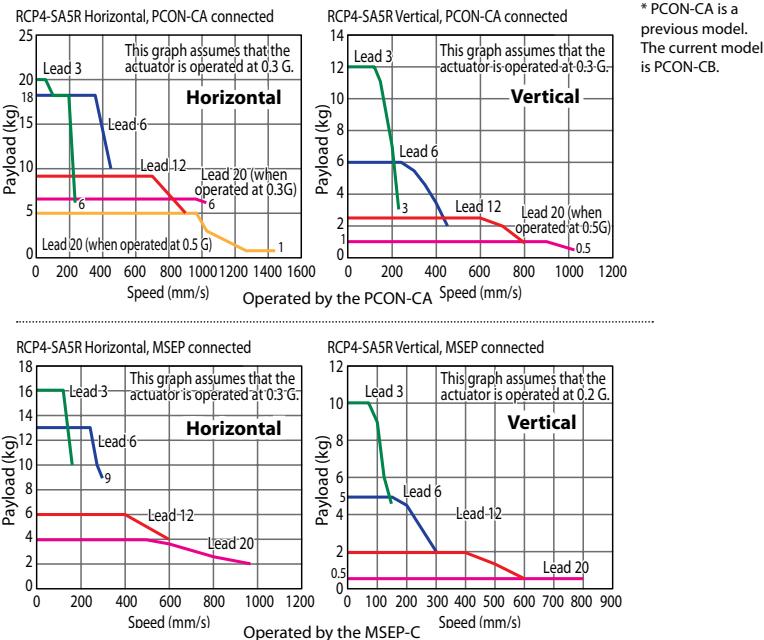


The "Motor side-mounted to the left (ML)" option is selected for the actuator shown above.



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*)The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P.37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
			Horizontal (kg) Vertical (kg)	
RCP4-SA5R-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA	6.5 1	
		MSEP-C	4 0.5 (*)	
RCP4-SA5R-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA	9 2.5	
		MSEP-C	6 2	
RCP4-SA5R-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA	18 6	
		MSEP-C	13 5	
RCP4-SA5R-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA	20 12	
		MSEP-C	16 10	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	PCON-CA	1440 <1120>	1225<1120>	1045	900	785	690	610	
	MSEP-C	960<800>			900<800>	785	690	610	
12	PCON-CA	900<800>	795	665	570	490	425	375	330
	MSEP-C		600		570	490	425	375	330
6	PCON-CA	450	395	335	285	245	215	185	165
	MSEP-C		300		285	245	215	185	165
3	PCON-CA	225	195	165	140	120	105	90	80
	MSEP-C		150		140	120	105	90	80

The values in <> apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
Robot cable	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (outside)	CJO	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Motor side-mounted to the left (standard)	ML	P8	—
Motor side-mounted to the right	MR	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 4.9 N·m, Mb: 6.8 N·m, Mc: 11.7 N·m
Allowable overhang	150mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

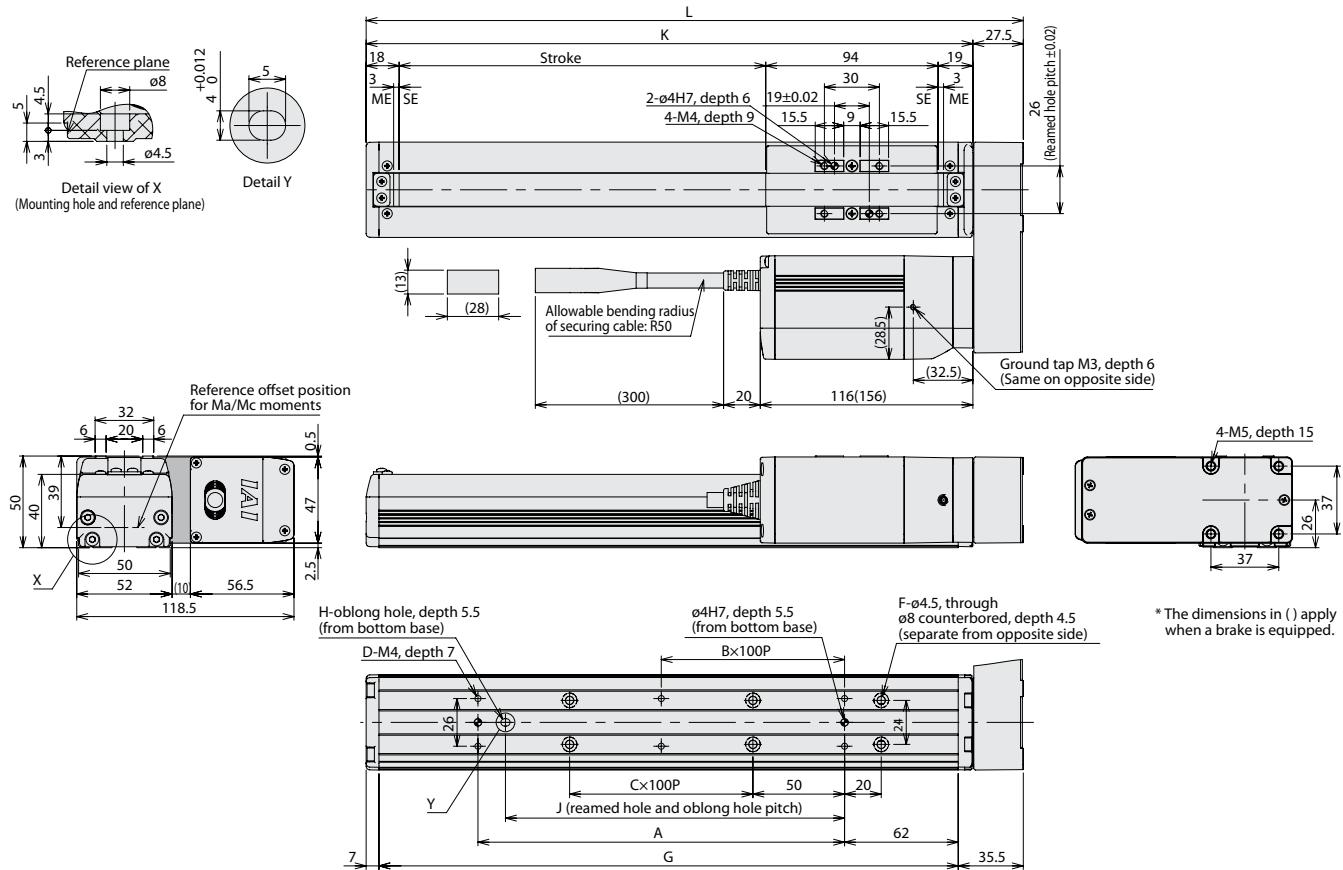
(*1) The value at lead 20 is shown in []. (*2) Based on 5,000km of traveling life.

Dimensional Drawings

CAD drawings can be downloaded from the website. www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	
A	73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
B	0	0	0	1	1	2	2	3	3	4	4	5	6	6	7		
C	0	0	1	1	2	2	3	3	4	4	5	5	6	67	7	8	
D	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	
F	4	4	6	6	8	8	10	10	12	12	12	14	14	16	16	18	
G	166	216	266	316	366	416	466	516	566	616	666	716	766	816	866	916	
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
K	181	231	281	331	381	431	481	531	581	631	681	731	781	831	881	931	
Mass (kg)	Without brake	1.7	1.9	2.0	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.5	3.6	3.8	3.9
	With brake	2.0	2.1	2.3	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.4	3.6	3.7	3.9	4.0	4.1

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-SA6R

ROBO Cylinder, Slider Type, Side-mounted Motor Type, Actuator Width 58mm, 24-V Pulse Motor

Model Specification Items	RCP4	— SA6R —	I	— 42P —	□	— Lead —	□	— Stroke —	□	— Applicable controller —	□	— Cable length —	□	— Options —
	Series	— Type	— Encoder type	— Motor type										
			I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 800: 800mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL					N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable		Refer to the options table below. * Be sure to specify either "ML" or "MR" as the motor side-mounted direction.



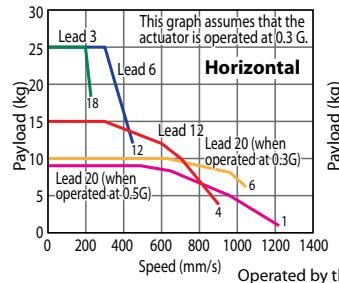
The "Motor side-mounted to the left (ML)" option is selected for the actuator shown above.



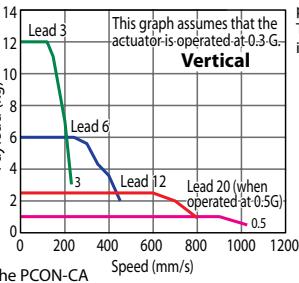
- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.)
(2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload

RCP4-SA6R Horizontal, PCON-CA connected

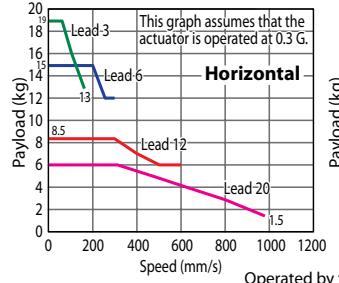


RCP4-SA6R Vertical, PCON-CA connected

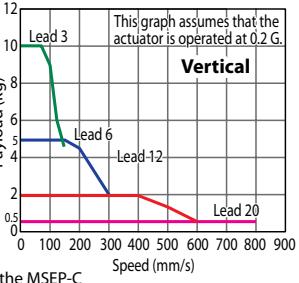


* PCON-CA is a previous model. The current model is PCON-CB.

RCP4-SA6R Horizontal, MSEP connected



RCP4-SA6R Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
RCP4-SA6R-I-42P-20-①-P3-②-③	20	PCON-CA	10	1
MSEP-C		6	0.5 (*)	
RCP4-SA6R-I-42P-12-①-P3-②-③	12	PCON-CA	15	2.5
MSEP-C		8.5	2	
RCP4-SA6R-I-42P-6-①-P3-②-③	6	PCON-CA	25	6
MSEP-C		15	5	
RCP4-SA6R-I-42P-3-①-P3-②-③	3	PCON-CA	25	12
MSEP-C		19	10	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	PCON-CA	1280	1230	1045	905	785	690	615	
	MSEP-C		960		905	785	690	615	
12	PCON-CA	900	795	670	570	490	430	375	335
	MSEP-C		600		570	490	430	375	335
6	PCON-CA	450	395	335	285	245	215	185	165
	MSEP-C		300		285	245	215	185	165
3	PCON-CA	225	195	165	140	120	105	90	80
	MSEP-C		150		140	120	105	90	80

The values in < > apply when the actuator is used vertically.

(unit: mm/s)

Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
Robot cable	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (outside)	CJO	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Motor side-mounted to the left (standard)	ML	P8	—
Motor side-mounted to the right	MR	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

Item	Description
Drive system	Ball screw Ø10mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 8.9 N·m, Mb: 12.7 N·m, Mc: 18.6 N·m
Allowable overhang	220mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1) The value at lead 20 is shown in []. (*2) Based on 5,000km of traveling life

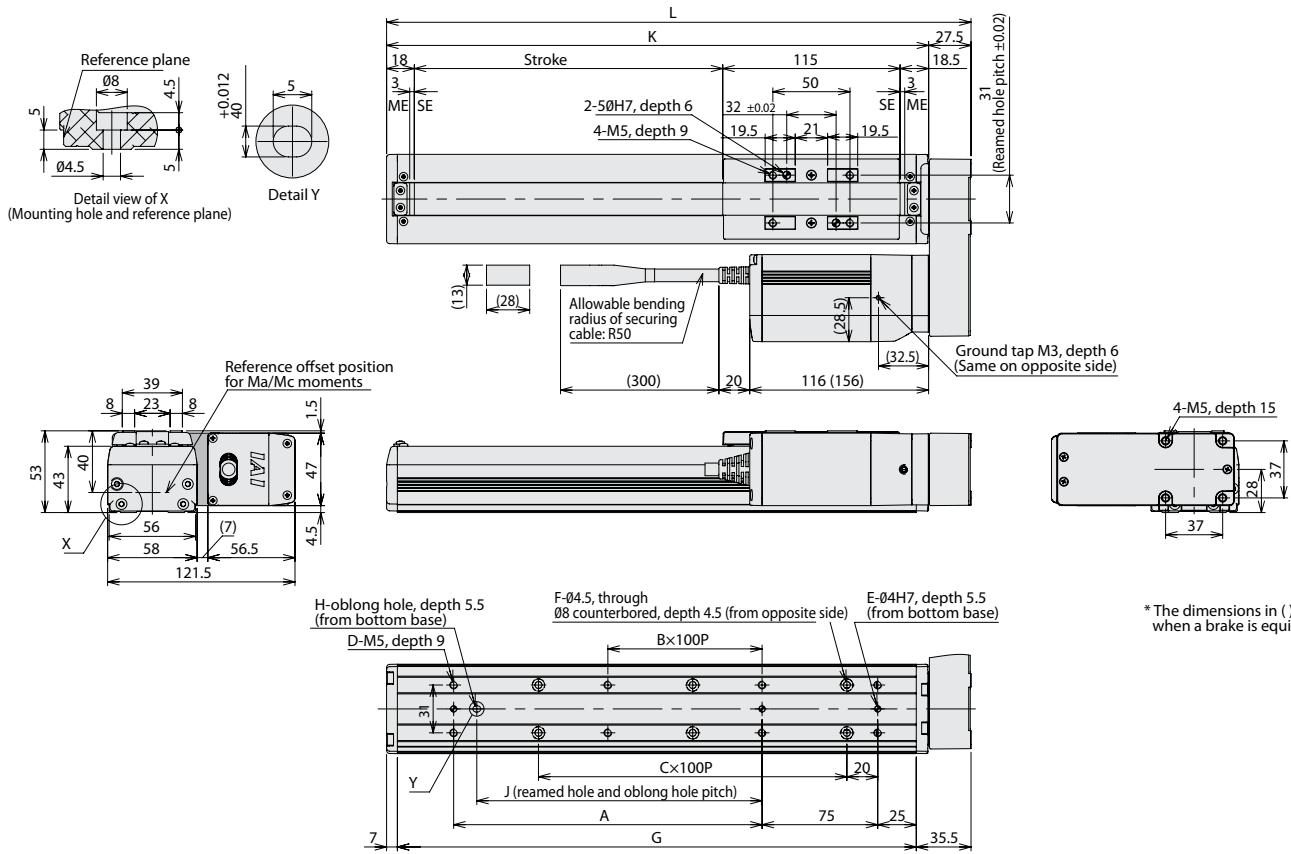
Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	229	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
G	186.5	236.5	286.5	336.5	386.5	436.5	486.5	536.5	586.5	636.5	686.5	736.5	786.5	836.5	886.5	936.5	
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
K	201.5	251.5	301.5	351.5	401.5	451.5	501.5	551.5	601.5	651.5	701.5	751.5	801.5	851.5	901.5	951.5	
Mass (kg)	Without brake	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	4.6
	With brake	2.4	2.6	2.7	2.9	3.1	3.2	3.4	3.5	3.7	3.8	4.0	4.2	4.3	4.5	4.6	4.8

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-SA7R

ROBO Cylinder, Slider Type, Side-mounted Motor Type, Actuator Width 73mm, 24-V Pulse Motor

Model Specification Items	RCP4	— SA7R —	I	— 56P —	□	— □ —	□	— □ —	□	— □ —	□
Series	—	Type	— Encoder type —	Motor type	Lead	— Stroke —	Applicable controller	Cable length	— Options —		
I: Incremental specification			56P: Pulse motor, size 56□	24: 24mm 16: 16mm 8: 8mm 4: 4mm	50: 50mm 80: 80mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below. * Be sure to specify either "ML" or "MR" as the motor side-mounted direction.			

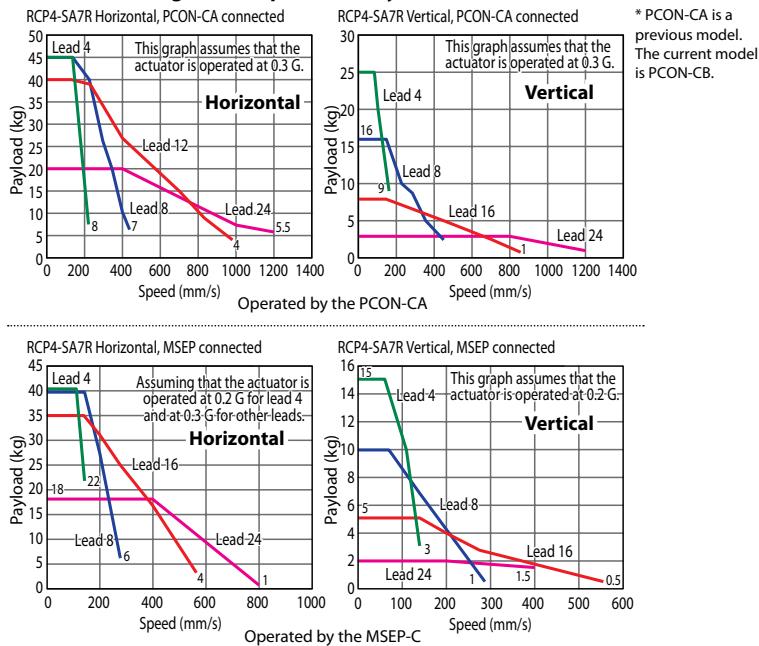


The "Motor side-mounted to the left (ML)" option is selected for the actuator shown above.



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.)
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Stroke (mm)
			Horizontal (kg) Vertical (kg)	
RCP4-SA7R-I-56P-24-①-P3-②-③	24	PCON-CA	20 3	50~800 (every 50mm)
		MSEP-C	18 2 (*)	
RCP4-SA7R-I-56P-16-①-P3-②-③	16	PCON-CA	40 8	50~800 (every 50mm)
		MSEP-C	35 5 (*)	
RCP4-SA7R-I-56P-8-①-P3-②-③	8	PCON-CA	45 16	50~800 (every 50mm)
		MSEP-C	40 10 (*)	
RCP4-SA7R-I-56P-4-①-P3-②-③	4	PCON-CA	45 25	50~800 (every 50mm)
		MSEP-C	40 (*) 15 (*)	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
24	PCON-CA	1000						890	790
	MSEP-C	800<600>						790<600>	
16	PCON-CA	840<700>		750<700>	655	580	515		
	MSEP-C	560						515	
8	PCON-CA	490	430	375	325	290	255		
	MSEP-C	280						255	
4	PCON-CA	210		185	160	145	125		
	MSEP-C	140						125	

The values in < > apply when the actuator is used vertically.

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
Robot cable	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (outside)	CJO	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Motor side-mounted to the left (standard)	ML	P8	—
Motor side-mounted to the right	MR	P8	—
Non-motor end specification	NM	P8	—
Slider roller specification	SR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø12mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*2)	Ma: 13.9 N·m, Mb: 19.9 N·m, Mc: 38.3 N·m
Allowable overhang	230mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1) The value at lead 24 is shown in []. (*2) Based on 5,000km of traveling life

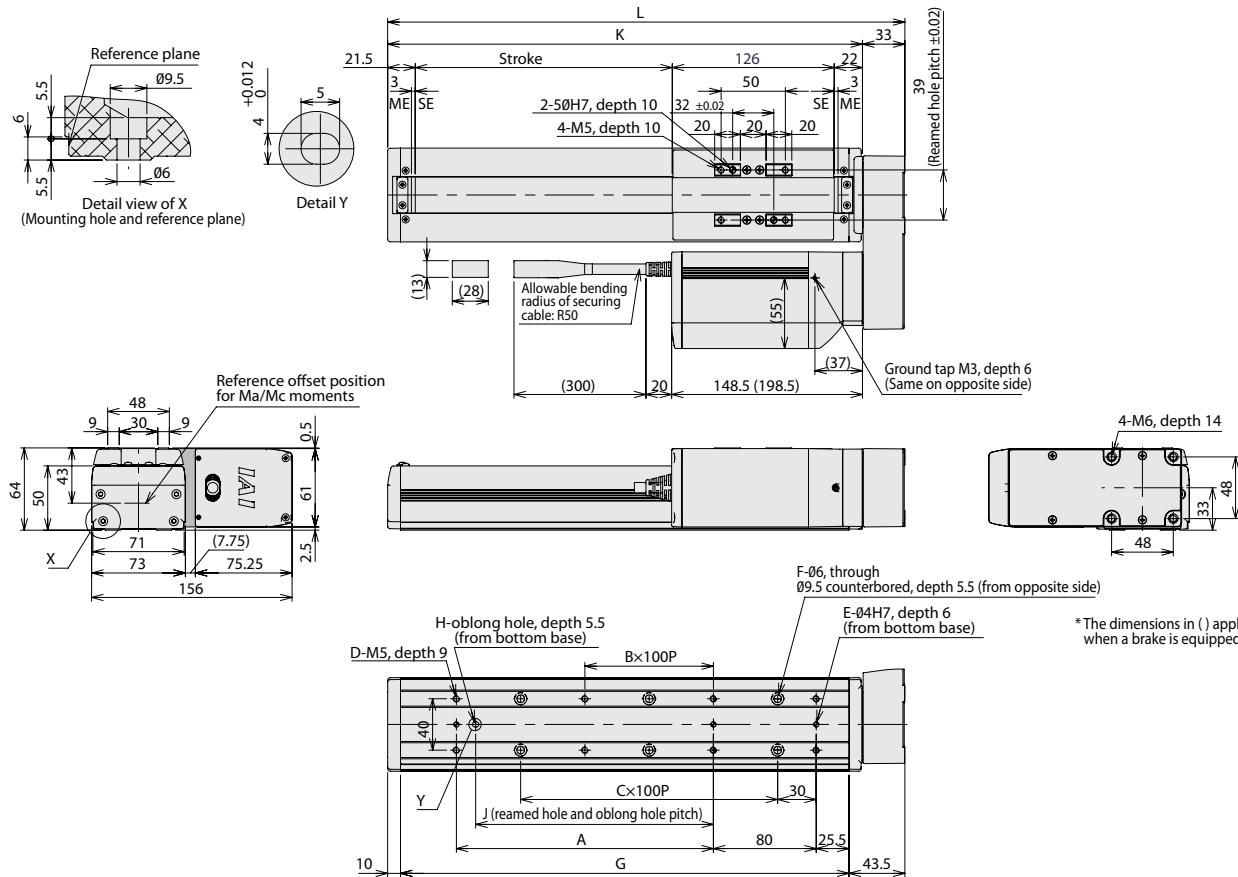
Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



* The dimensions in () apply when a brake is equipped.

Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	252.5	302.5	352.5	402.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
G	199	249	299	349	399	449	499	549	599	649	699	749	799	849	899	949	
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
K	219.5	269.5	319.5	369.5	419.5	469.5	519.5	569.5	619.5	669.5	719.5	769.5	819.5	869.5	919.5	969.5	
Mass (kg)	Without brake	3.8	4.0	4.3	4.5	4.8	5.0	5.3	5.5	5.7	6.0	6.2	6.5	6.7	7.0	7.2	7.4
	With brake	4.3	4.5	4.8	5.0	5.3	5.5	5.8	6.0	6.2	6.5	6.7	7.0	7.2	7.5	7.7	8.0

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-RA5C

ROBO Cylinder, Rod Type, Motor Unit Coupled, Actuator Width 52mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	RA5C	—	I	—	42P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
I: Incremental specification				42P: Pulse motor, size 42□				20:20 mm	—	50: 50mm	—	P3: PCON / MSEL		N: None					
								12:12 mm	—	400:400mm (every 50mm)	—	P5: RCON / RSEL		P: 1m					
								6: 6 mm	—		—		S: 3 m		M: 5 m				
								3: 3 mm	—		X□□: Specified length		X□□: Specified length						
											X□□: Robot cable								

Built-in guide mechanism

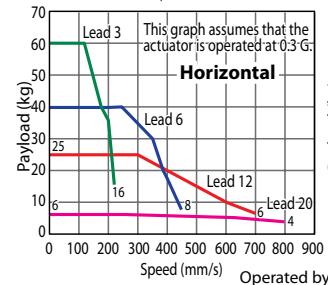


POINT Notes on selection	(1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
	(*) The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.
	(2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

(3) All horizontal payloads are values when an external guide is used.

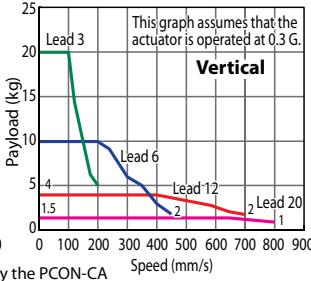
Correlation Diagrams of Speed and Payload

RCP4-RA5C Horizontal, PCON-CA connected



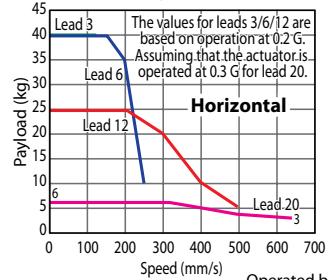
* The values of the horizontal specification assume that an external guide is used.

RCP4-RA5C Vertical, PCON-CA connected



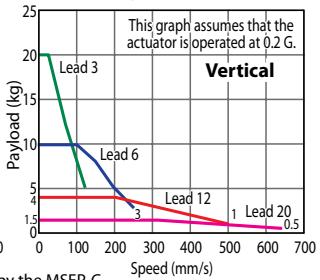
* PCON-CA is a previous model.
The current model is PCON-CB.

RCP4-RA5C Horizontal, MSEP connected



This graph assumes that the actuator is operated at 0.3 G.

RCP4-RA5C Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Max. push force (N)	Stroke (mm)
RCP4-RA5C-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA	6	1.5	56
		MSEP-C	6	1.5 (*)	
RCP4-RA5C-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA	25	4	93
		MSEP-C	25 (*)	4 (*)	
RCP4-RA5C-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA	40	10	185
		MSEP-C	40 (*)	10 (*)	
RCP4-RA5C-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA	60	20	370
		MSEP-C	40 (*)	20 (*)	

50~400 (every 50mm)

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2 G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~400 (every 50mm)
20	PCON-CA	800
	MSEP-C	640
12	PCON-CA	700
	MSEP-C	500
6	PCON-CA	450
	MSEP-C	250
3	PCON-CA	225
	MSEP-C	125

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—
350	—
400	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
Robot cable	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Flange bracket	FL	P8	—
Non-motor end specification	NM	P8	—
Scraper	SC	P8	—

* Please see page 7 and 8 of the RCP4 catalog (CJ0182-4A-UST-1.2A) for all available options.

(*) The value at lead 20 is shown in [].

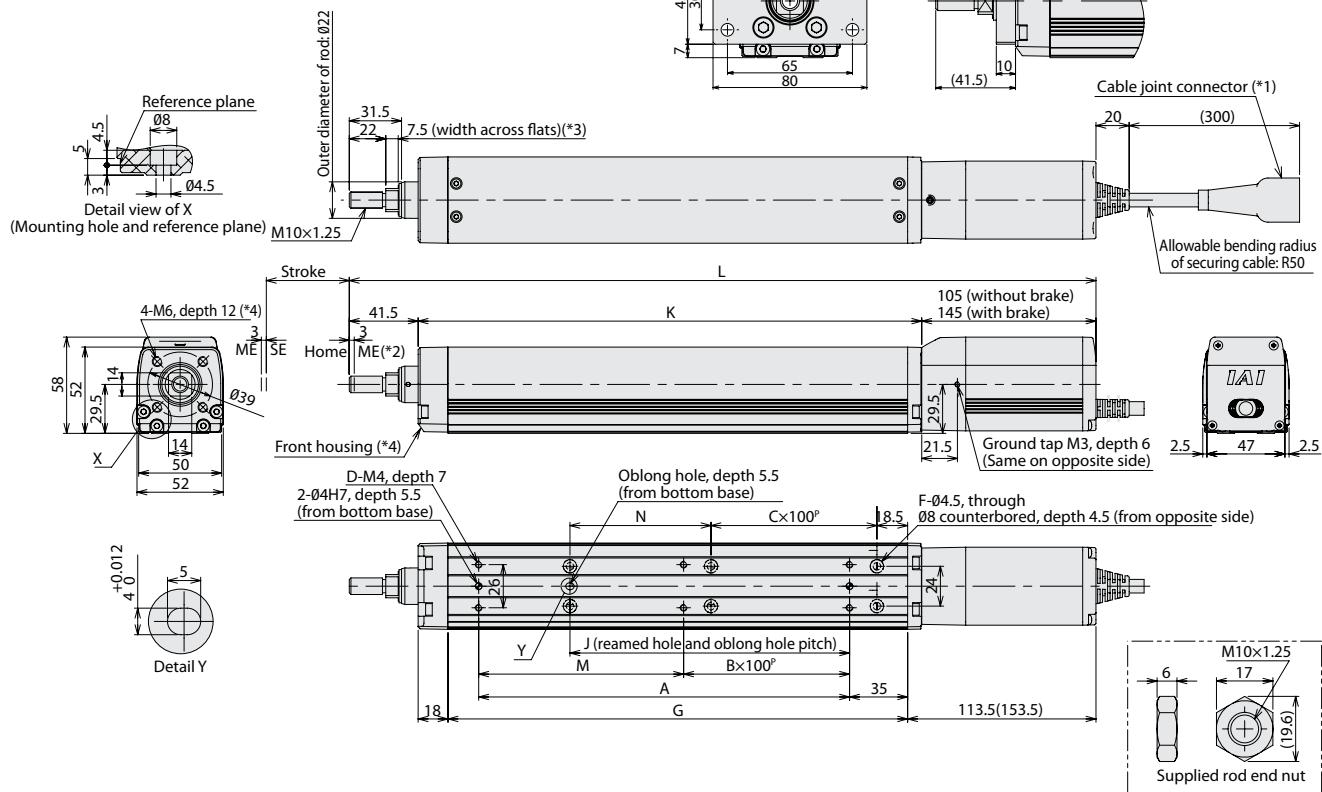
Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com

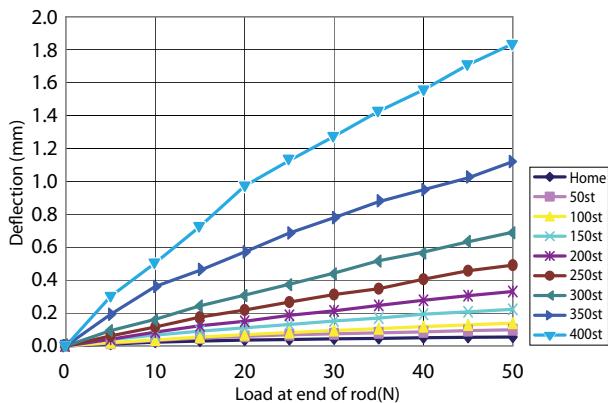


- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.
- *3 The direction of width across flats varies depending on the product.
- *4 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
(For details, refer to "Notes on Installing Rod Actuators" on P.35.)



Rod Deflection of RCP4-RA5C (Reference Values)

(The graph below plots deflection as measured by installing the actuator vertically and applying a force to the rod from one side.)



Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	
	L Without brake	300	350	400	450	500	550	600	650
A With brake	340	390	440	490	540	590	640	690	
B	73.5	123.5	173.5	223.5	273.5	323.5	373.5	423.5	
C	0	0	1	1	2	2	3	3	
D	4	4	6	6	8	8	10	10	
F	4	4	4	6	6	8	8	10	
G	127	177	227	277	327	377	427	477	
J	18.5	68.5	118.5	168.5	218.5	268.5	318.5	368.5	
K	153.5	203.5	253.5	303.5	353.5	403.5	453.5	503.5	
M	73.5	123.5	173.5	223.5	273.5	323.5	373.5	423.5	
N	35	85	135	185	235	285	335	385	
Allowable static load at end of rod (N)	65.6	51.2	41.7	34.9	29.8	25.7	22.4	19.7	
Allowable dynamic load at end of rod (N)	32.4	23.6	18.1	14.4	11.6	9.5	7.7	6.2	
Load offset 0mm	25.6	19.7	15.7	12.7	10.4	8.6	7.1	5.7	
Load offset 100mm	6.6	5.2	4.3	3.7	3.2	2.8	2.6	2.3	
Allowable static torque at end of rod (N·m)	2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6	
Allowable dynamic torque at end of rod (N·m)	1.9	2.1	2.4	2.7	2.9	3.2	3.4	3.7	
Mass (kg)	Without brake	2.1	2.4	2.6	2.9	3.1	3.4	3.7	3.9
	With brake								

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-RA6C

ROBO Cylinder, Rod Type, Motor Unit Coupled, Actuator Width 61mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	RA6C	—	I	—	56P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
I: Incremental specification								24: 24mm	—	50: 50mm	—	P3: PCON / MSEL	—	N: None					
								16: 16mm	—	16: 16mm	—	P5: RCON / RSEL	—	P: 1m					
								8: 8mm	—	500: 500mm (every 50mm)	—		—	S: 3 m					
								4: 4mm	—		—		—	M: 5 m					
												X□□: Specified length		X: 5m					
												R□□: Robot cable		R: 10m					

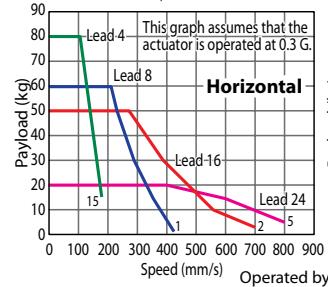
Built-in guide mechanism



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
- (*) The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)
- (3) All horizontal payloads are values when an external guide is used.

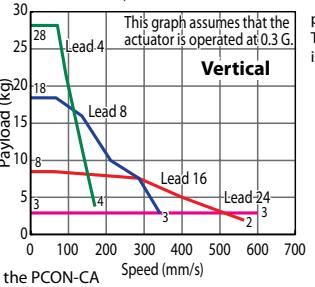
Correlation Diagrams of Speed and Payload

RCP4-RA6C Horizontal, PCON-CA connected



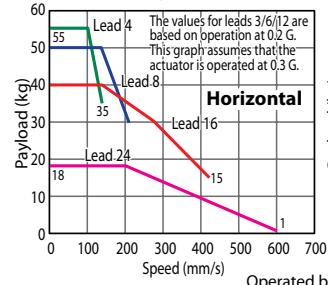
* The values of the horizontal specification assume that an external guide is used.

RCP4-RA6C Vertical, PCON-CA connected



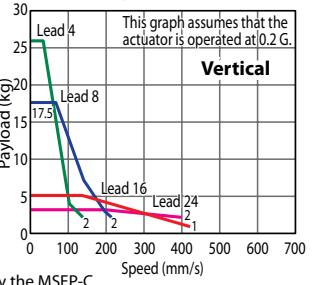
* PCON-CA is a previous model.
The current model is PCON-CB.

RCP4-RA6C Horizontal, MSEP connected



The values for leads 3/6/12 are based on operation at 0.2G.
This graph assumes that the actuator is operated at 0.3G.

RCP4-RA6C Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Max. push force (N)	Stroke (mm)	
RCP4-RA6C-I-56P-24-①-P3-②-③	24	PCON-CA	20	3	182	50~500 (every 50mm)	
		MSEP-C	18	3 (*)			
RCP4-RA6C-I-56P-16-①-P3-②-③	16	PCON-CA	50	8	273		
		MSEP-C	40 (*)	5 (*)			
RCP4-RA6C-I-56P-8-①-P3-②-③	8	PCON-CA	60	18	547		
		MSEP-C	50 (*)	17.5 (*)			
RCP4-RA6C-I-56P-4-①-P3-②-③	4	PCON-CA	80	28	1094	50~500 (every 50mm)	
		MSEP-C	55 (*)	26 (*)			

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2 G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~500 (every 50mm)
24	PCON-CA	800<600>
	MSEP-C	600<400>
16	PCON-CA	700<560>
	MSEP-C	420
8	PCON-CA	420
	MSEP-C	210
4	PCON-CA	210
	MSEP-C	140

The values in <> apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—
350	—
400	—
450	—
500	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
Robot cable	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Flange bracket	FL	P8	—
Non-motor end specification	NM	P8	—
Scraper	SC	P8	—

* Please see page 7 and 8 of the RCP4 catalog (CJ0182-4A-UST-1.2A) for all available options.

Actuator Specifications

Item	Description
Drive system	Ball screw Ø12 mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Rod	Ø25mm stainless steel pipe
Rod non-rotation precision	±0 deg
Allowable rod load mass	Refer to P. 24 and P. 36
Rod tip overhang distance	100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1) The value at lead 20 is shown in [].

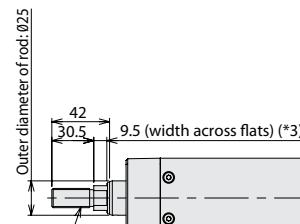
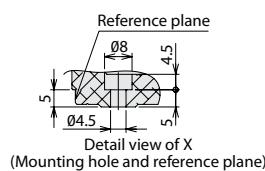
Dimensional Drawings

CAD drawings can be downloaded from the website.

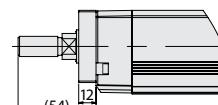
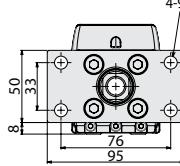
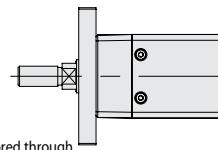
www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.
- *3 The direction of width across flats varies depending on the product.
- *4 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
(For details, refer to "Notes on Installing Rod Actuators" on P. 35.)

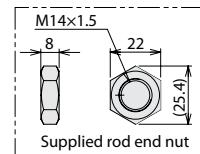
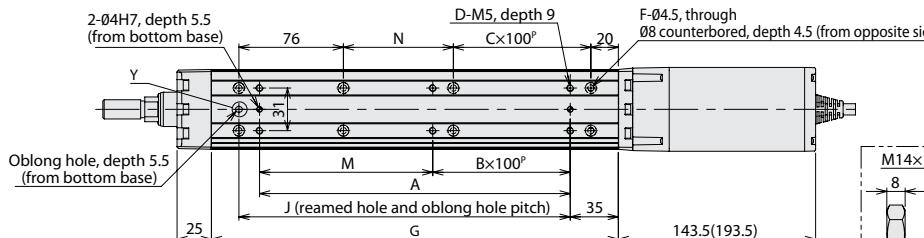
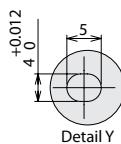
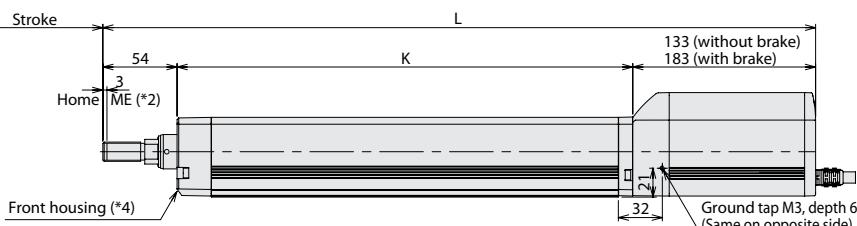
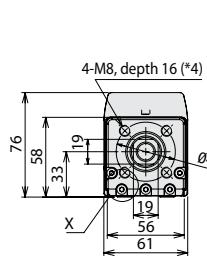


Dimensions with Flange (Optional) (*4)



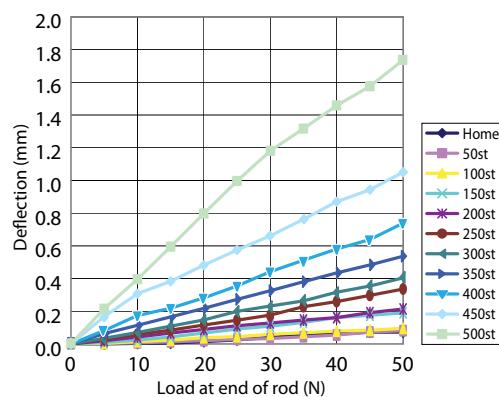
Cable joint connector (*1)

Allowable bending radius of securing cable: R50



Rod Deflection of RCP4-RA6C (Reference Values)

(The graph below plots deflection as measured by installing the actuator vertically and applying a radial force to the rod from one side.)



Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500
	L	Without brake	With brake	Without brake						
A	76	126	176	226	276	326	376	426	476	526
B	0	0	1	1	2	2	3	3	4	4
C	0	0	0	1	1	2	2	3	3	4
D	4	4	6	6	8	8	10	10	12	12
F	6	6	6	8	8	10	10	12	12	14
G	146	196	246	296	346	396	446	496	546	596
J	91	141	191	241	291	341	391	441	491	541
K	181.5	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5
M	76	126	76	126	76	126	76	126	76	126
N	30	80	130	80	130	80	130	80	130	80
Allowable static load at end of rod (N)	112.7	91.5	76.7	65.7	57.2	50.4	44.8	40.2	36.2	32.7
Allowable dynamic load at end of rod (N)	49.0	37.4	29.9	24.5	20.4	17.1	14.5	12.3	10.3	8.6
Allowable static torque at end of rod (N·m)	11.4	9.3	7.9	6.8	6.0	5.4	4.9	4.5	4.1	3.8
Allowable dynamic torque at end of rod (N·m)	3.9	3.1	2.5	2.1	1.8	1.5	1.3	1.1	1.0	0.8
Mass (kg)	Without brake	3.4	3.7	4.1	4.4	4.7	5.0	5.4	5.7	6.0
	With brake	3.9	4.2	4.6	4.9	5.2	5.5	5.9	6.2	6.5

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-RA5R

ROBO Cylinder, Rod Type, Side-mounted Motor Type, Actuator Width 52mm, 24-V Pulse Motor

Model Specification Items	RCP4 — RA5R — I — 42P —	Lead	Stroke	Applicable controller	Cable length	Options
Series	—	Type	— Encoder type	— Motor type	—	—
I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 400: 400mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1 m S: 3 m M: 5 m X□□: Specified length R□□: Robot cable	Refer to the options table below. *Be sure to specify either "ML" or "MR" as the motor side-mounted direction.

Built-in guide mechanism



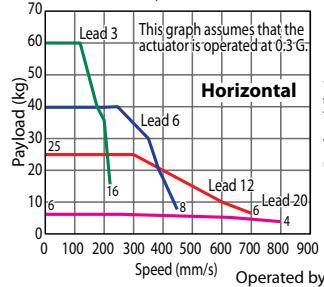
The "Motor side-mounted to the left (ML)" option is selected for the actuator shown above.



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
- (*) The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)
- (3) All horizontal payloads are values when an external guide is used.

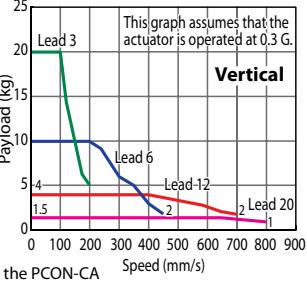
Correlation Diagrams of Speed and Payload

RCP4-RA5R Horizontal, PCON-CA connected



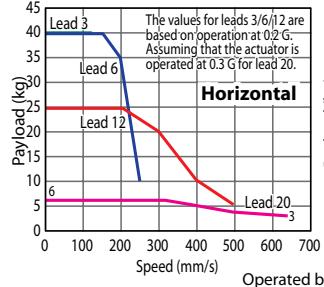
* The values of the horizontal specification assume that an external guide is used.

RCP4-RA5R Vertical, PCON-CA connected

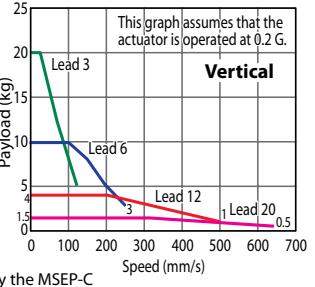


* PCON-CA is a previous model. The current model is PCON-CB.

RCP4-RA5R Horizontal, MSE-P connected



RCP4-RA5R Vertical, MSE-P connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload	Max. push force (N)	Stroke (mm)
RCP4-RA5R-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA	6	1.5	56
		MSE-P-C	6	1.5 (*)	
RCP4-RA5R-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA	25	4	93
		MSE-P-C	25 (*)	4 (*)	
RCP4-RA5R-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA	40	10	185
		MSE-P-C	40 (*)	10 (*)	
RCP4-RA5R-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA	60	20	370
		MSE-P-C	40 (*)	20 (*)	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~400 (every 50mm)
20	PCON-CA	800
	MSE-P-C	640
12	PCON-CA	700
	MSE-P-C	500
6	PCON-CA	450
	MSE-P-C	250
3	PCON-CA	225
	MSE-P-C	125

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—
350	—
400	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
Special length	M (5m)	—
	X06 (6m) ~X10 (10m)	—
Robot cable	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (outside)	CJO	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Flange bracket (*)	FL	P8	—
Motor side-mounted to the left (standard)	ML	P8	—
Motor side-mounted to the right	MR	P8	—
Non-motor end specification	NM	P8	—
Scraper	SC	P8	—

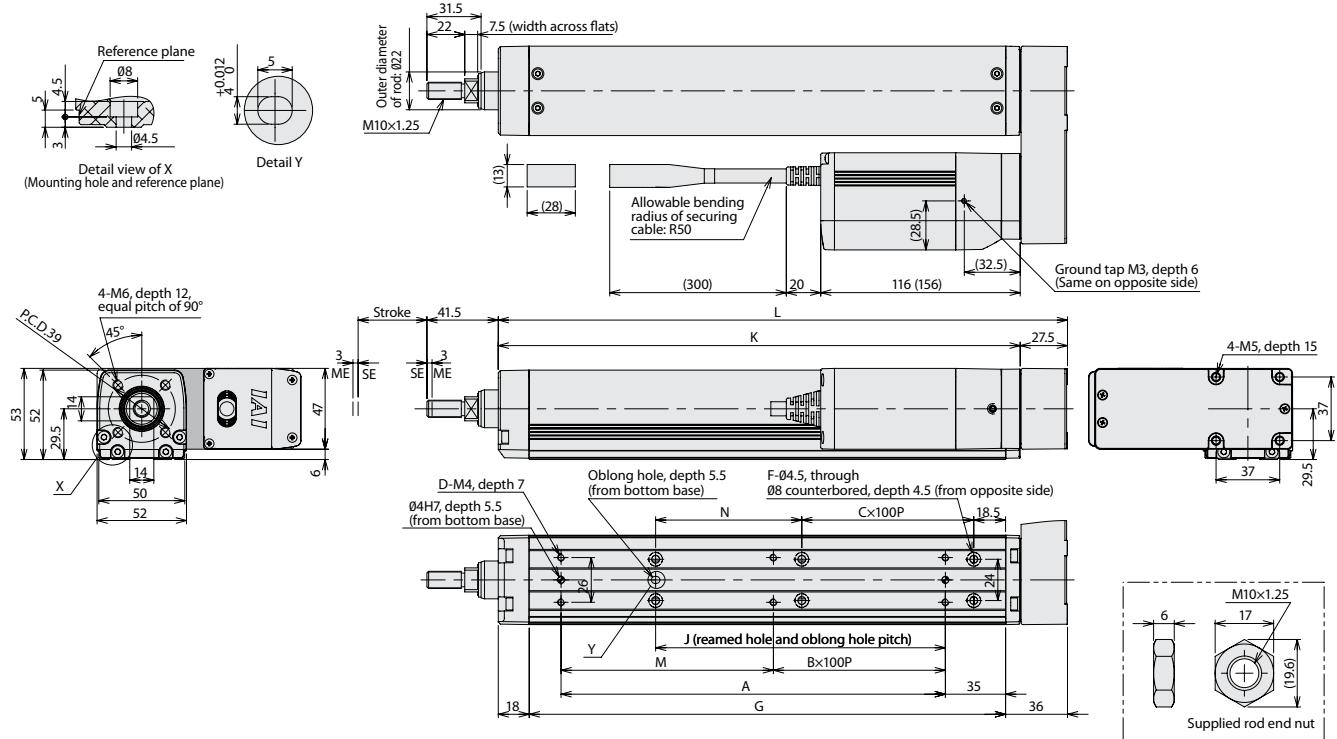
(*) The flange bracket cannot be used on the 50mm and less stroke with brake specification.

* Please see page 7 and 8 of the RCP4 catalog (CJ0182-4A-UST-1.2A) for all available options.

CAD drawings can be downloaded from the website. www.intelligentactuator.com



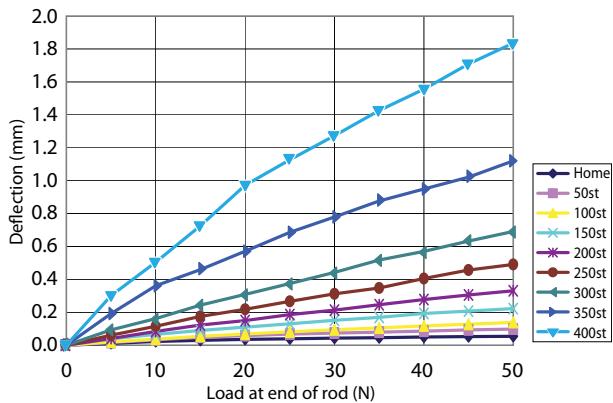
- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.
- *3 The direction of width across flats varies depending on the product.
- *4 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
(For details, refer to "Notes on Installing Rod Actuators" on P. 35.)



*The dimensions in () apply when a brake is equipped.

■ Rod Deflection of RCP4-RA5R (Reference Values)

(The graph below plots deflection as measured by installing the actuator vertically and applying a radial force to the rod from one side.)



■ Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400
L	181	231	281	331	381	431	481	531
A	73.5	123.5	173.5	223.5	273.5	323.5	373.5	423.5
B	0	0	1	1	2	2	3	3
C	0	0	0	1	1	2	2	3
D	4	4	6	6	8	8	10	10
F	4	4	4	6	6	8	8	10
G	127	177	227	277	327	377	427	477
J	18.5	68.5	118.5	168.5	218.5	268.5	318.5	368.5
K	153.5	203.5	253.5	303.5	353.5	403.5	453.5	503.5
M	73.5	123.5	173.5	223.5	273.5	323.5	373.5	423.5
N	35	85	135	85	135	85	135	85
Allowable static load at end of rod (N)	65.6	51.2	41.7	34.9	29.8	25.7	22.4	19.7
Allowable dynamic load at end of rod (N)	32.4	23.6	18.1	14.4	11.6	9.5	7.7	6.2
Load offset 0mm	25.6	19.7	15.7	12.7	10.4	8.6	7.1	5.7
Load offset 100mm	6.6	5.2	4.3	3.7	3.2	2.8	2.6	2.3
Allowable static torque at end of rod (Nm)	2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6
Allowable dynamic torque at end of rod (Nm)	Without brake	2.1	2.4	2.6	2.9	3.2	3.4	3.7
(kg)	With brake	2.3	2.6	2.9	3.1	3.4	3.7	4.2

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4-RA6R

ROBO Cylinder, Rod Type, Side-mounted Motor Type, Actuator Width 61mm, 24-V Pulse Motor

Model Specification Items	RCP4	—	RA6R	—	I	—	56P	—	□	—	□	—	□	—	□	—	□	—	□
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options			
I: Incremental specification				56P: Pulse motor, size 56□				24: 24mm	—	50: 50mm	—	P3: PCON / MSEL	N: None						
								16: 16mm	—	16: 16mm	—	P5: RCON / RSEL	P: 1 m						
								8: 8mm	—	500: 500mm (every 50mm)	—		S: 3 m						
								4: 4mm	—		—		M: 5 m						
												X□□: Specified length	X: None						
												R□□: Robot cable	R: 1 m						

Built-in guide mechanism



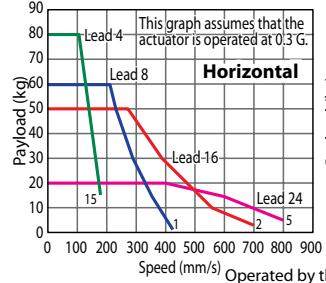
The "Motor side-mounted to the left (ML)" option is selected for the actuator shown above.



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*) The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)
- (3) All horizontal payloads are values when an external guide is used.

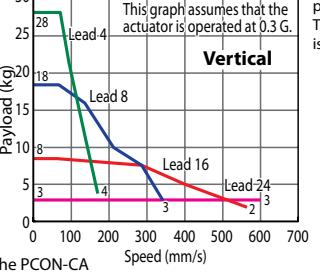
Correlation Diagrams of Speed and Payload

RCP4-RA6R Horizontal, PCON-CA connected



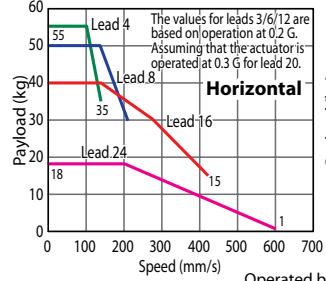
* The values of the horizontal specification assume that an external guide is used.

RCP4-RA6R Vertical, PCON-CA connected



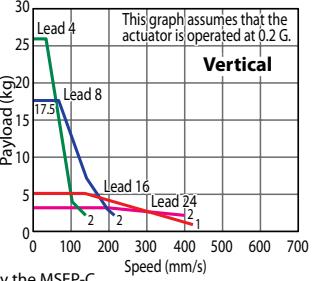
* PCON-CA is a previous model. The current model is PCON-CB.

RCP4-RA6R Horizontal, MSEP connected



The values for leads 3/6/12 are based on operation at 0.2G. Assuming that the actuator is operated at 0.3G for lead 20.

RCP4-RA6R Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Max. push force (N)	Stroke (mm)
RCP4-RA6R-I-56P-24-①-P3-②-③	24	PCON-CA	20	3	182	50~500 (every 50mm)
		MSEP-C	18	3 (*)		
RCP4-RA6R-I-56P-16-①-P3-②-③	16	PCON-CA	50	8	273	50~500 (every 50mm)
		MSEP-C	40 (*)	5 (*)		
RCP4-RA6R-I-56P-8-①-P3-②-③	8	PCON-CA	60	18	547	50~500 (every 50mm)
		MSEP-C	50 (*)	17.5 (*)		
RCP4-RA6R-I-56P-4-①-P3-②-③	4	PCON-CA	80	28	1094	50~500 (every 50mm)
		MSEP-C	55 (*)	26 (*)		

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~500 (every 50mm)
24	PCON-CA	800<600>
	MSEP-C	600<400>
16	PCON-CA	560
	MSEP-C	420
8	PCON-CA	420<350>
	MSEP-C	210
4	PCON-CA	175
	MSEP-C	140

The values in <> apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—
350	—
400	—
450	—
500	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (outside)	CJO	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Flange bracket (*)	FL	P8	—
Motor side-mounted to the left (standard)	ML	P8	—
Motor side-mounted to the right	MR	P8	—
Non-motor end specification	NM	P8	—
Scraper	SC	P8	—

(*) The flange bracket cannot be used on the 50mm and less stroke with brake specification.

* Please see page 7 and 8 of the RCP4 catalog (CJ0182-4A-UST-1.2A) for all available options.

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~X10 (10m)	—
	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
	R01 (1m) ~R03 (3m)	—
Robot cable	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø12 mm, rolled C10
Positioning repeatability (*)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Rod	Ø25mm stainless steel pipe
Rod non-rotation precision	±0 deg
Allowable rod load mass	Refer to P. 28 and P. 36
Rod tip overhang distance	100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

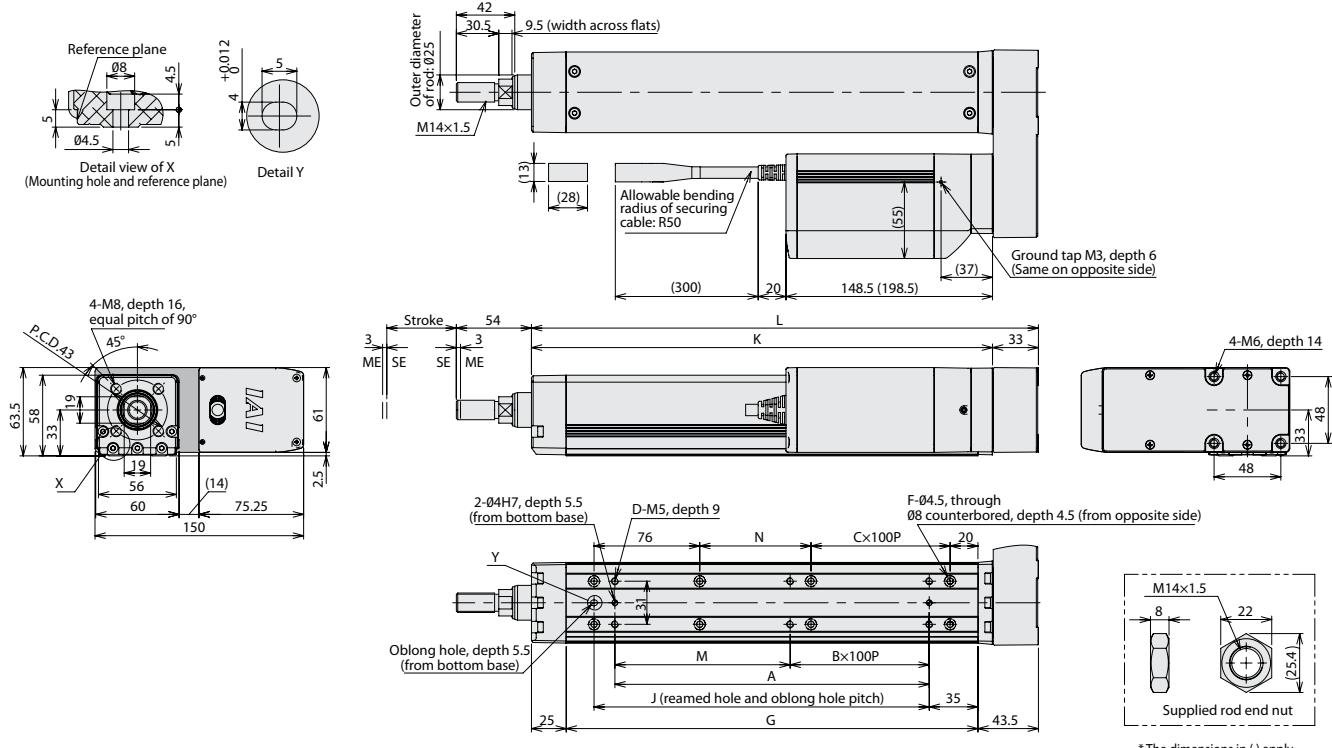
(*) The value at lead 20 is shown in [].

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



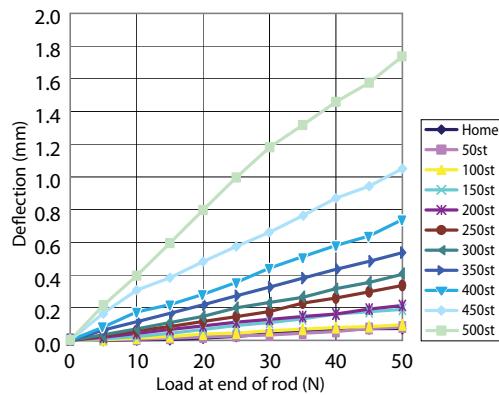
- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.
- *3 The direction of width across flats varies depending on the product.
- *4 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
(For details, refer to "Notes on Installing Rod Actuators" on P. 35.)



*The dimensions in () apply when a brake is equipped.

■ Rod Deflection of RCP4-RA6R (Reference Values)

(The graph below plots deflection as measured by installing the actuator vertically and applying a radial force to the rod from one side.)



■ Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	
L	214.5	264.5	314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	
A	76	126	176	226	276	326	376	426	476	526	
B	0	0	1	1	2	2	3	3	4	4	
C	0	0	0	1	1	2	2	3	3	4	
D	4	4	6	6	8	8	10	10	12	12	
F	6	6	6	8	8	10	10	12	12	14	
G	146	196	246	296	346	396	446	496	546	596	
J	91	141	191	241	291	341	391	441	491	541	
K	181.5	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	
M	76	126	176	226	276	326	376	426	476	526	
N	30	80	130	80	130	80	130	80	130	80	
Allowable static load at end of rod (N)	112.7	91.5	76.7	65.7	57.2	50.4	44.8	40.2	36.2	32.7	
Allowable dynamic load at end of rod (N)	49.0	37.4	29.9	24.5	20.4	17.1	14.5	12.3	10.3	8.6	
Load offset 0mm	49.0	37.4	29.9	24.5	20.4	17.1	14.5	12.3	10.3	8.6	
Load offset 100mm	38.7	31.0	25.5	21.4	18.1	15.4	13.2	11.2	9.5	8.0	
Allowable static torque at end of rod (N·m)	11.4	9.3	7.9	6.8	6.0	5.4	4.9	4.5	4.1	3.8	
Allowable dynamic torque at end of rod (N·m)	3.9	3.1	2.5	2.1	1.8	1.5	1.3	1.1	1.0	0.8	
Mass (kg)	Without brake	3.9	4.2	4.5	4.8	5.1	5.5	5.8	6.1	6.4	6.8
	With brake	4.4	4.7	5.0	5.3	5.6	6.0	6.3	6.6	6.9	7.3

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4CR-SA5C

Cleanroom ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 52mm, 24-V Pulse Motor

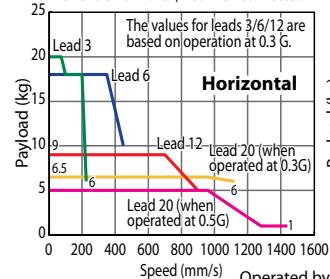
Model Specification Items	RCP4CR - SA5C -	I	-	42P	-	Lead	-	Stroke	-	Applicable controller	-	Cable length	-	Options
Series	—	Type	—	Encoder type	—	Motor type	—							
I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 800: 800mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.								



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.)
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

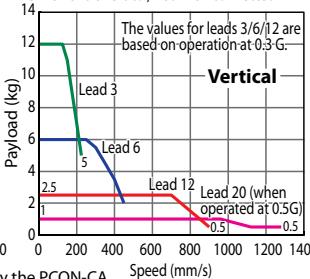
■ Correlation Diagrams of Speed and Payload

RCP4CR-SA5C Horizontal, PCON-CA connected

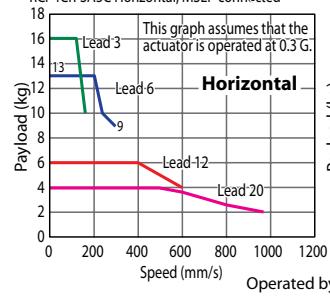


* PCON-CA is a previous model. The current model is PCON-CB.

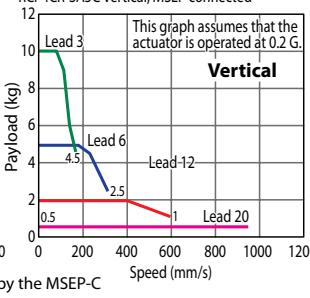
RCP4CR-SA5C Vertical, PCON-CA connected



RCP4CR-SA5C Horizontal, MSEP connected



RCP4CR-SA5C Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

■ Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Vertical (kg)	Stroke (mm)
RCP4CR-SA5C-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA	6.5	1	
		MSEP-C	4	0.5 (*)	
RCP4CR-SA5C-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA	9	2.5	
		MSEP-C	6	2	
RCP4CR-SA5C-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA	18	6	
		MSEP-C	13	5	
RCP4CR-SA5C-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA	20	12	
		MSEP-C	16	10	

50~800
(every 50mm)

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

■ Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction amount (Nl/min)
20	PCON-CA	1440 <1280>	1225	1045	900	785	690	610	80	
	MSEP-C		960		900	785	690	610		
12	PCON-CA	900	795	665	570	490	425	375	330	
	MSEP-C		600		570	490	425	375	330	
6	PCON-CA	450	395	335	285	245	215	185	165	
	MSEP-C		300		285	245	215	185	165	
3	PCON-CA	225	195	165	140	120	105	90	80	
	MSEP-C		150		140	120	105	90	80	

The values in <> apply when the actuator is used vertically.

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Vacuum joint on opposite side	VR	P8	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
Special length	M (5m)	—
	X06 (6m) ~X10 (10m)	—
Robot cable	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
Robot cable	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
Robot cable	R16 (16m) ~R20 (20m)	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10 mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Dynamic allowable moment (*2)	Ma: 4.9 N·m, Mb: 6.8 N·m, Mc: 11.7 N·m
Allowable overhang	150 mm or less in Ma, Mb and Mc directions
Grease	Low dust generation grease (urea grease) is used for both ball screws and guides.
Cleanliness	Class 10 (0.1 μm)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

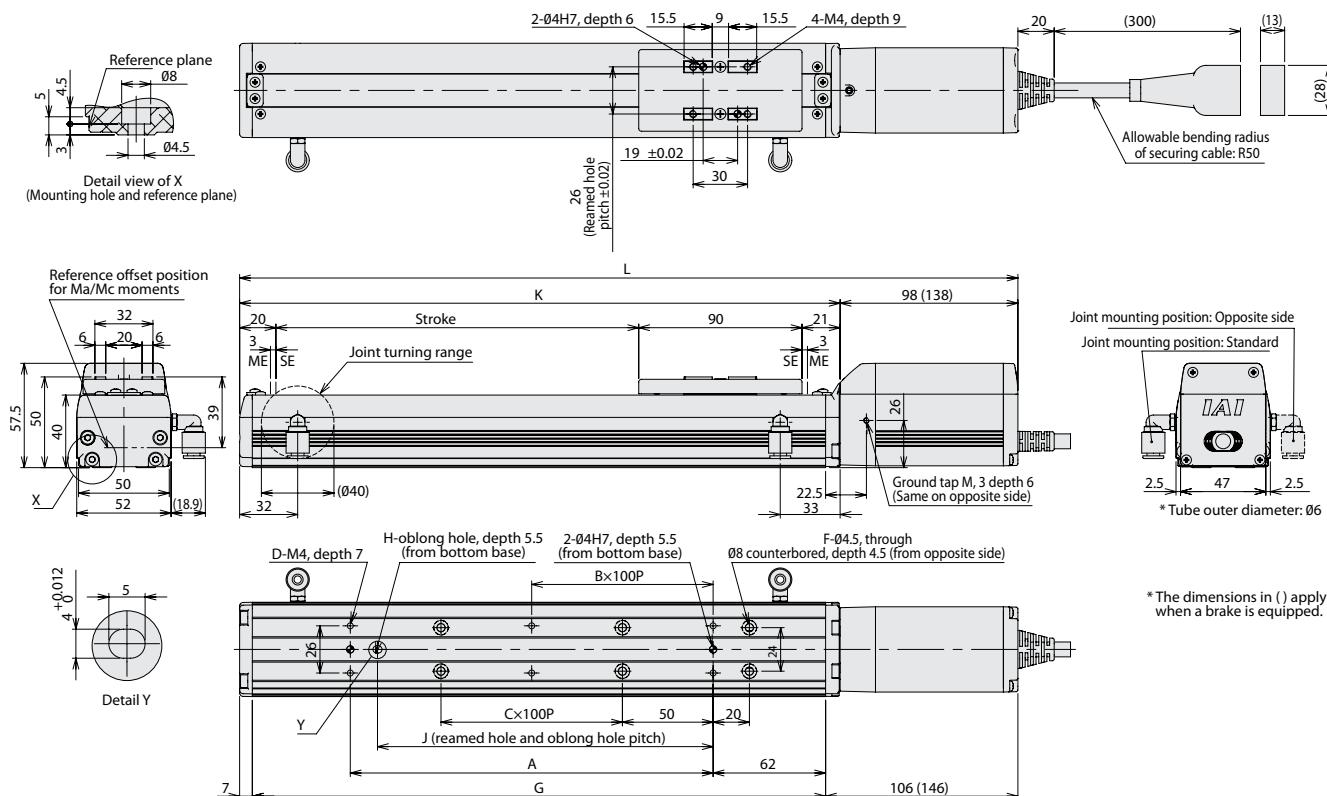
(*1) The value at lead 20 is shown in []. (*2) Based on 5,000 km of traveling life.

Dimensional Drawings

CAD drawings can be downloaded from the website. www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

		Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		Without brake	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029
	With brake	319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069	
A		73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
B		0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	
C		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	
D		4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	
F		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
G		166	216	266	316	366	416	466	516	566	616	666	716	766	816	866	916	
H		0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
J		0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
K		181	231	281	331	381	431	481	531	581	631	681	731	781	831	881	931	
Mass (kg)	Without brake	1.5	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.7	
Mass (kg)	With brake	1.7	1.9	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.5	3.6	3.7	3.9	

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4CR-SA6C

Cleanroom ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 58mm, 24-V Pulse Motor

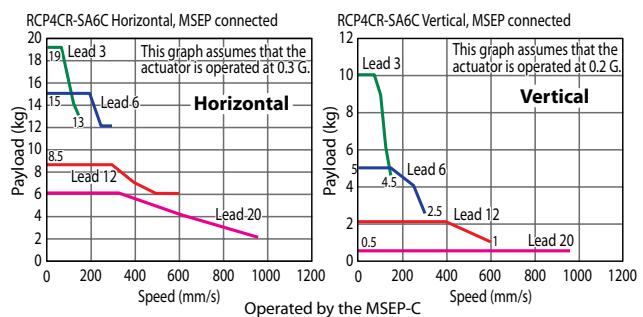
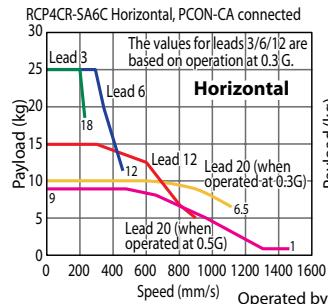
Model Specification Items	RCP4CR-SA6C	I	42P	□	□	□	□	□	□							
Series	—	Type	—	Encoder type	—	Motor type	—	Lead	—	Stroke	—	Applicable controller	—	Cable length	—	Options
I: Incremental specification	42P: Pulse motor, size 42□	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 800: 800mm (every 50mm)	P3: PCON / MSEL P5: RCON / RSEL	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.										



- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.
(2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

■ Correlation Diagrams of Speed and Payload

RCP4CR-SA6C Horizontal, PCON-CA connected RCP4CR-SA6C Vertical, PCON-CA connected
* PCON-CA is a previous model. The current model is PCON-CB.



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

■ Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Vertical (kg)	Stroke (mm)
RCP4CR-SA6C-I-42P-20-[①]-P3-[②]-[③]	20	PCON-CA	10	1	
		MSEP-C	6	0.5 (*)	
RCP4CR-SA6C-I-42P-12-[①]-P3-[②]-[③]	12	PCON-CA	15	2.5	
		MSEP-C	8.5	2	
RCP4CR-SA6C-I-42P-6-[①]-P3-[②]-[③]	6	PCON-CA	25	6	
		MSEP-C	15	5	
RCP4CR-SA6C-I-42P-3-[①]-P3-[②]-[③]	3	PCON-CA	25	12	
		MSEP-C	19	10	

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2G

■ Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction amount (Nl/min)
20	PCON-CA	1440<1280>	1230	1045	905	785	690	615	80	
	MSEP-C	960			905	785	690	615		
12	PCON-CA	900	795	670	570	490	430	375	335	50
	MSEP-C	600			570	490	430	375	335	
6	PCON-CA	450	395	335	285	245	215	185	165	30
	MSEP-C	300			285	245	215	185	165	
3	PCON-CA	225	195	165	140	120	105	90	80	15
	MSEP-C	150			140	120	105	90	80	

The values in < > apply when the actuator is used vertically. (unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol		Standard price
	P (1m)	S (3m)	
Standard type			—
			—
Special length	X06 (6m) ~X10 (10m)		—
	X11 (11m) ~X15 (15m)		—
Robot cable	X16 (16m) ~X20 (20m)		—
	R01 (1m) ~R03 (3m)		—
	R04 (4m) ~R05 (5m)		—
	R06 (6m) ~R10 (10m)		—
	R11 (11m) ~R15 (15m)		—
	R16 (16m) ~R20 (20m)		—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Vacuum joint on opposite side	VR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10 mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Dynamic allowable moment (*2)	Ma: 8.9 N·m, Mb: 12.7 N·m, Mc: 18.6 N·m
Allowable overhang	220 mm or less in Ma, Mb and Mc directions
Grease	Low dust generation grease (urea grease) is used for both ball screws and guides.
Cleanliness	Class 10 (0.1 µm)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

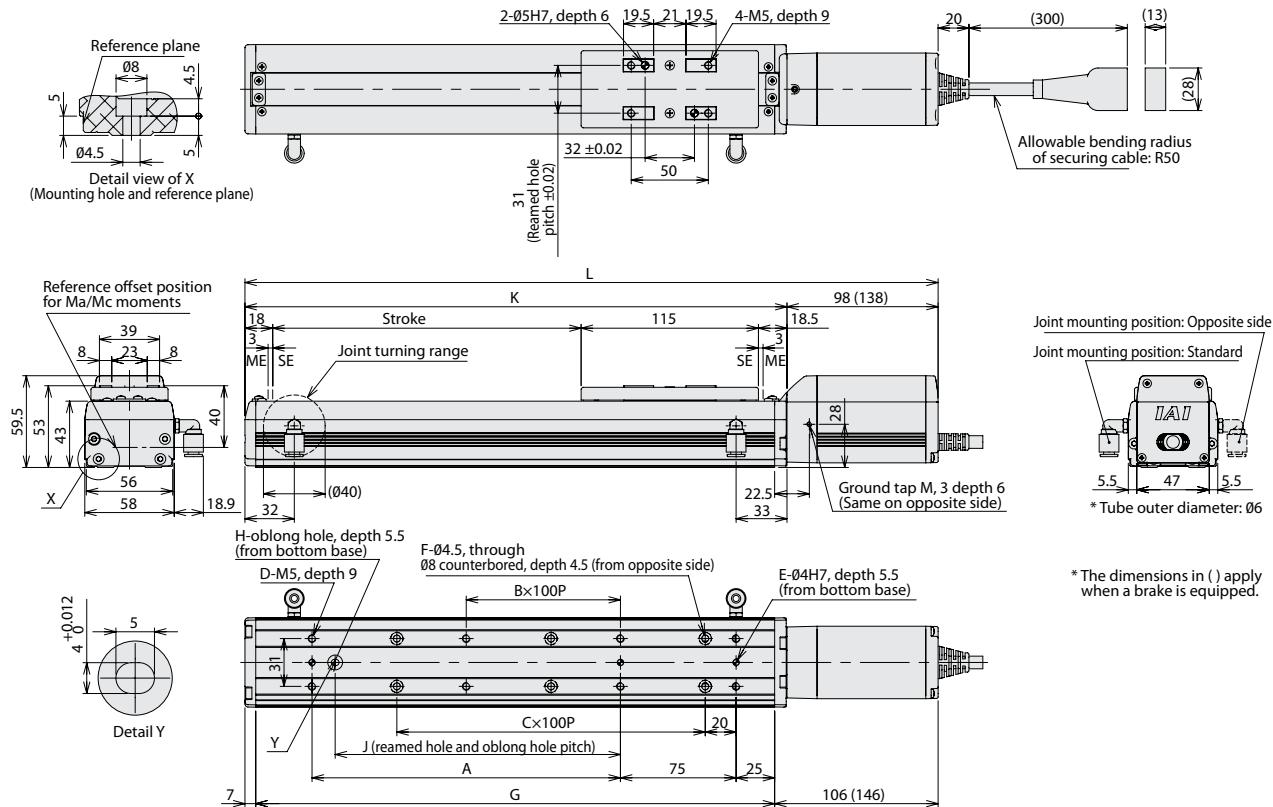
(*1) The value at lead 20 is shown in []. (*2) Based on 5,000 km of traveling life.

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



■ Dimensions and Mass by Stroke

	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without brake	299.5	349.5	399.5	449.5	499.5	549.5	599.5	649.5	699.5	749.5	799.5	849.5	899.5	949.5	999.5	1049.5
	With brake	339.5	389.5	439.5	489.5	539.5	589.5	639.5	689.5	739.5	789.5	839.5	889.5	939.5	989.5	1039.5	1089.5
A		0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B		0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E		2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
G		186.5	236.5	286.5	336.5	386.5	436.5	486.5	536.5	586.5	636.5	686.5	736.5	786.5	836.5	886.5	936.5
H		0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J		0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
K		201.5	251.5	301.5	351.5	401.5	451.5	501.5	551.5	601.5	651.5	701.5	751.5	801.5	851.5	901.5	951.5
Mass (kg)	Without brake	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.1	4.3
	With brake	2.2	2.3	2.5	2.6	2.8	3.0	3.1	3.3	3.4	3.6	3.7	3.9	4.1	4.2	4.4	4.5

Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

RCP4CR-SA7C

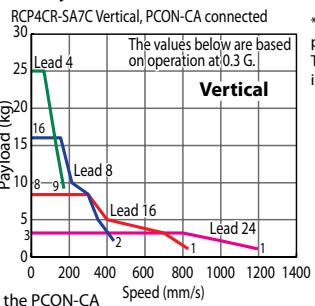
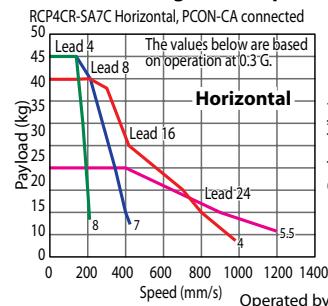
Cleanroom ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 73mm, 24-V Pulse Motor

Model Specification Items	RCP4CR - SA7C -	I -	56P -	□ - □ - □ - □ - □ - □
Series	Type	Encoder type	Motor type	Lead — Stroke — Applicable controller — Cable length — Options
		I: Incremental specification	56P: Pulse motor, size 56□	24: 24mm 16: 16mm 8: 8mm 4: 4mm
				50: 50mm 80: 800mm (every 50mm)
				P3: PCON / MSEL P5: RCON / RSEL
				N: None P: 1 m S: 3 m M: 5 m X□□: Specified length R□□: Robot cable
				Refer to the options table below.



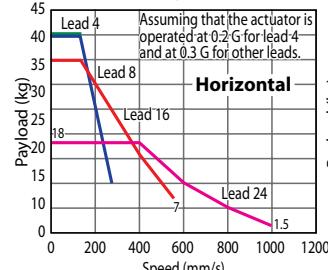
- (1) The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (*). Note that raising the acceleration causes the payload to drop.
(*The specific value varies depending on the connected controller and actuator lead. For details, refer to "Selection References" on P. 37 to 40.)
- (2) Take note that the maximum payload and maximum speed vary depending on the controller connected to the RCP4. (Refer to the actuator specifications below.)

Correlation Diagrams of Speed and Payload

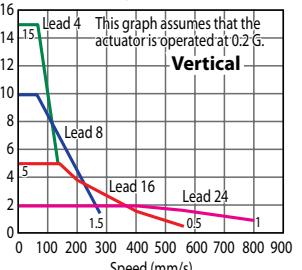


* PCON-CA is a previous model. The current model is PCON-CB.

RCP4CR-SA7C Horizontal, MSEP connected



RCP4CR-SA7C Vertical, MSEP connected



Actuator Specifications

* PCON-CA is a previous model. The current model is PCON-CB.

Leads and Payloads

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg) Vertical (kg)	Stroke (mm)
RCP4CR-SA7C-I-56P-24-①-P3-②-③	24	PCON-CA MSEP-C	20 18 (*)	3
RCP4CR-SA7C-I-56P-16-①-P3-②-③	16	PCON-CA MSEP-C	40 35	8
RCP4CR-SA7C-I-56P-8-①-P3-②-③	8	PCON-CA MSEP-C	45 40	16 10 (*)
RCP4CR-SA7C-I-56P-4-①-P3-②-③	4	PCON-CA MSEP-C	40 (*)	25 15 (*)

Code explanation ① Stroke ② Cable length ③ Options (*) When operated at 0.2 G

Stroke and Maximum Speed

Lead (mm)	Connected controller	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction amount (Nl/min)
24	PCON-CA	1200			1155	1010	890	790		90
	MSEP-C		1000<800>				890:800>		790	
16	PCON-CA	980<840>	865<840>	750	655	580	515			70
	MSEP-C		560					515		
8	PCON-CA	490	430	375	325	290	255			40
	MSEP-C		280				255			
4	PCON-CA	245<210>	215<210>	185	160	145	125			30
	MSEP-C		140				125			

The values in <> apply when the actuator is used vertically.

(unit: mm/s)

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

② Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
Special length	M (5m)	—
	X06 (6m) ~X10 (10m)	—
Robot cable	X11 (11m) ~X15 (15m)	—
	X16 (16m) ~X20 (20m)	—
Robot cable	R01 (1m) ~R03 (3m)	—
	R04 (4m) ~R05 (5m)	—
	R06 (6m) ~R10 (10m)	—
	R11 (11m) ~R15 (15m)	—
	R16 (16m) ~R20 (20m)	—

③ Options *

Name	Option code	See page	Standard price
Brake	B	P8	—
Optional cable exit direction (top)	CJT	P8	—
Optional cable exit direction (right)	CJR	P8	—
Optional cable exit direction (left)	CJL	P8	—
Optional cable exit direction (bottom)	CJB	P8	—
Non-motor end specification	NM	P8	—
Vacuum joint on opposite side	VR	P8	—

Actuator Specifications

Item	Description
Drive system	Ball screw Ø10 mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Dynamic allowable moment (*2)	Ma: 13.9 N·m, Mb: 19.9 N·m, Mc: 38.3 N·m
Allowable overhang	230 mm or less in Ma, Mb and Mc directions
Grease	Low dust generation grease (urea grease) is used for both ball screws and guides.
Cleanliness	Class 10 (0.1 µm)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

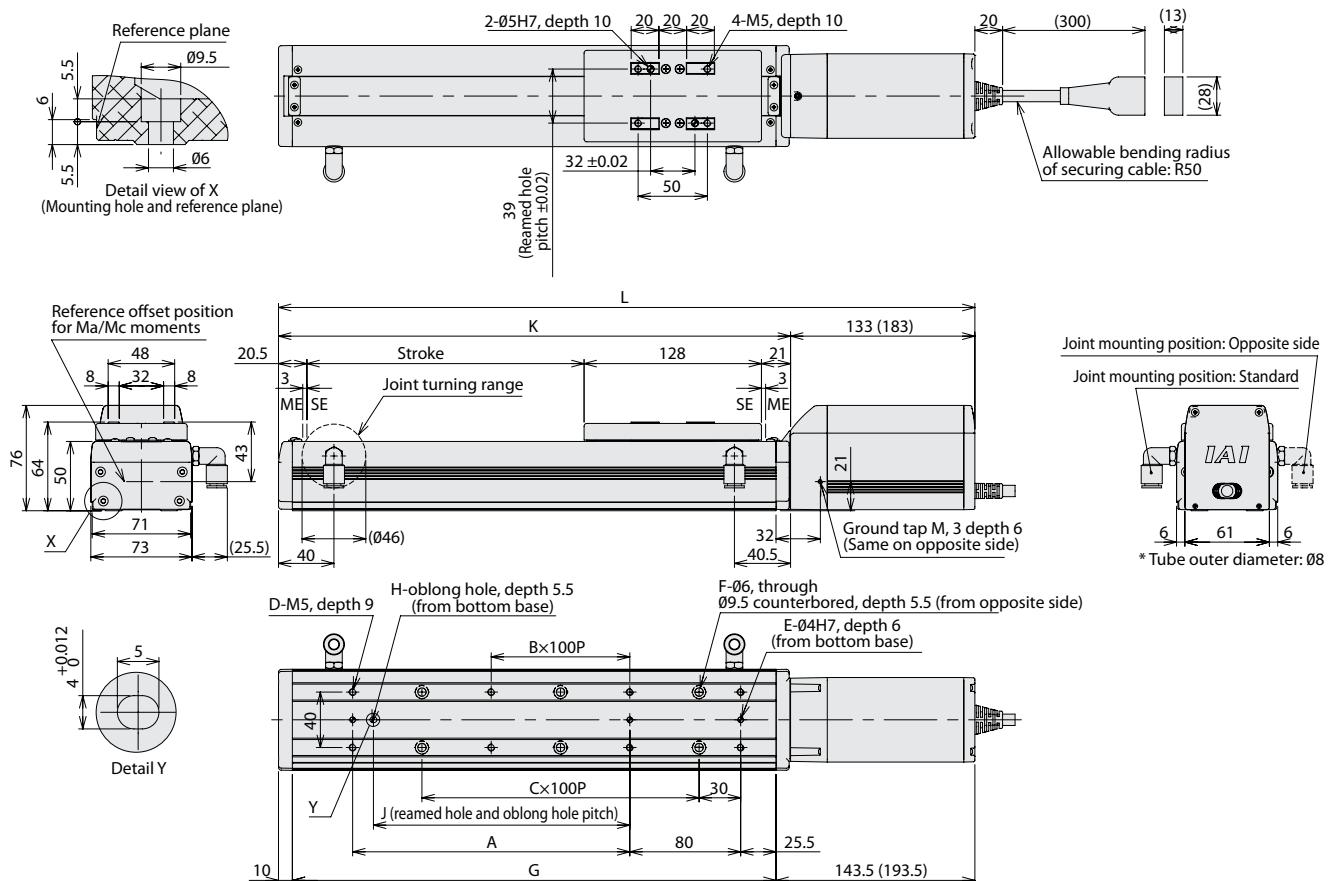
(*1) The value at lead 20 is shown in []. (*2) Based on 5,000 km of traveling life.

Dimensional Drawings

CAD drawings can be downloaded from the website. www.intelligentactuator.com



- *1 Connect the motor and encoder cables.
- *2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.



Dimensions and Mass by Stroke

		Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		Without brake	352.5	102.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	1052.5	1102.5
	With brake	402.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	1052.5	1102.5	1152.5	
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	700	800	
B	0	0	0	1	1	2	2	3	3	4	4	5	6	7	7	8	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	8	
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	18	
G	199	249	299	349	399	449	499	549	599	649	699	749	799	849	899	949		
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785		
K	219.5	269.5	319.5	369.5	419.5	469.5	519.5	569.5	619.5	669.5	719.5	769.5	819.5	869.5	919.5	969.5		
Mass (kg)	Without brake	3.4	3.6	3.8	4.1	4.3	4.6	4.8	5.1	5.3	5.6	5.8	6.0	6.3	6.5	6.8	7.0	
	With brake	3.9	4.1	4.3	4.6	4.8	5.1	5.3	5.6	5.8	6.1	6.3	6.5	6.8	7.0	7.3	7.5	

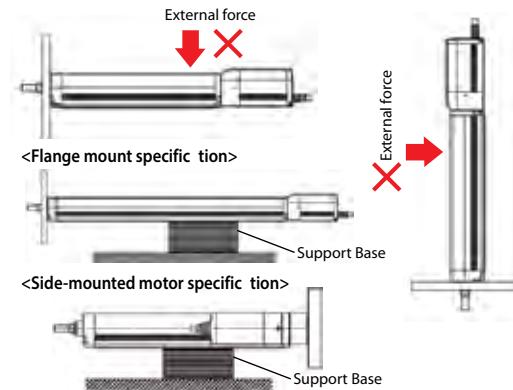
Applicable Controller

* Controller for RCP4 series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

Notes on Installing Rod Actuators

When installing the actuator using the front housing or with a flange (optional), make sure the actuator will not receive external forces. (External forces may cause malfunction or damaged parts.) If the actuator will receive external forces or when the actuator is combined with a Cartesian robot, etc., use the mounting holes on the actuator base to secure the actuator.

Even when the actuator does not receive any external force, provide a support base to support the actuator, as shown in the figure on the right, if the actuator is installed horizontally and secured using a flange or through the bracket mounting holes of the side-mounted motor specification.

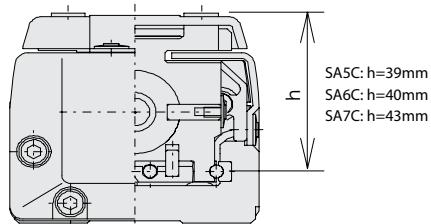


Selection Guideline (Correlation Diagram of Push Force and Current-limiting Value)

In push-motion operation, the push force can be used by changing the current-limiting value of the controller over a range of 20% to 70%. The maximum push-force varies depending on the model, so check the required push force from the table below and select an appropriate type meeting the purpose of use.

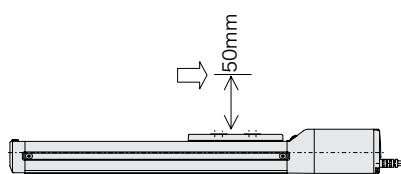
When performing push-motion operation using a slider actuator, limit the push current so that the reactive force moment generated by the push force will not exceed 80% of the rated moment (M_a , M_b) specified in the catalog. To help with the moment calculations, the application position of the guide moment is shown in the figure below. Calculate the necessary moment by considering the offset of the push force application position.

Note that if an excessive force exceeding the rated moment is applied, the guide may be damaged and the life may become shorter. Accordingly, include a sufficient safety factor when deciding on the push force.



Calculation example:

If push-motion operation is performed with a RCP4-SA7C by applying 100 N at the position shown to the right, the moment received by the guide, or M_a , is calculated as $(43 + 50) \times 100 = 9300$ (N·mm) = 9.3 (N·m).



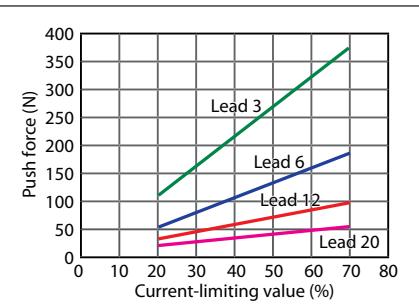
Since the rated moment M_a of the SA7C is 13.9 (N·m), $13.9 \times 0.8 = 11.12 > 9.3$, suggesting that this selection is acceptable.

If a M_b moment generates due to push-motion operation, calculate the moment from the overhang and confirm, in the same way, that the calculated moment is within 80% of the rated moment.

Correlation Diagrams of Push Force and Current-limiting value

The table below is only a reference, and the graphs may vary slightly from the actual values.

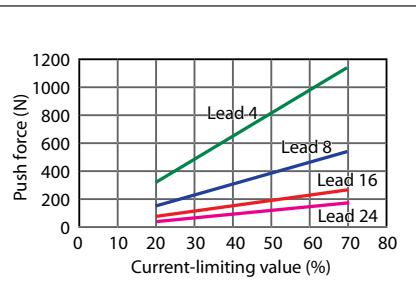
SA5C/SA6C/RA5C type



SA7C type

* Please refer graphs on the next page for updated information.

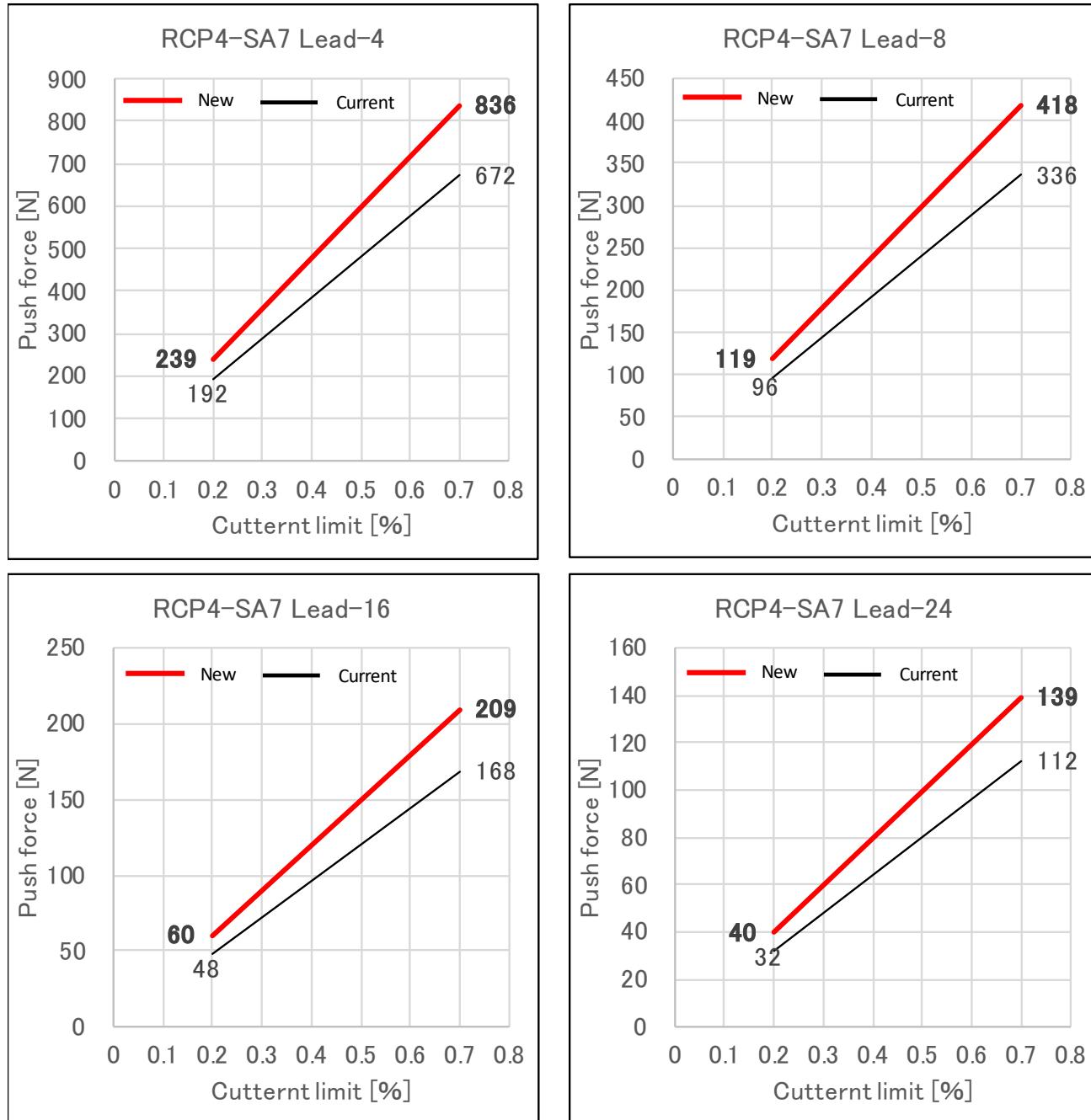
RA6C type



Notes on Use

- The relationship of push force and current-limiting value is only a reference, and the graphs may vary slightly from the actual values.
- If the current-limiting value is less than 20%, the push force may vary. Make sure the current-limiting value remains 20% or more.
- The graphs assume a traveling speed of 20 mm/s during push-motion operation.

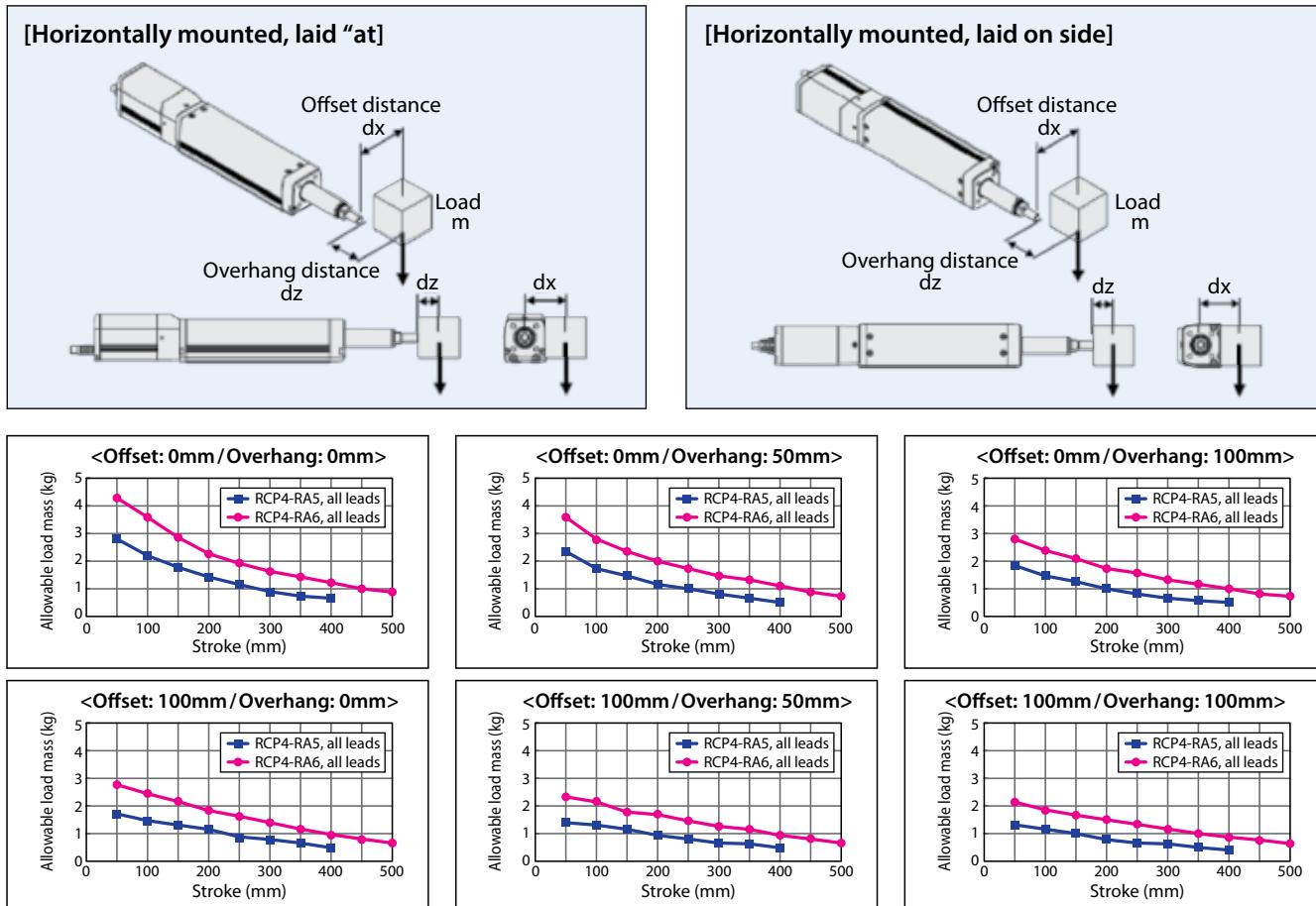
Correlation of Push force of RCP4-SA7 and current limits



Selection References (Guide for Selecting Allowable Load for Radial Cylinder)

The radial cylinder has a built-in guide, so loads up to a certain level can be applied to the rod without using an external guide. Refer to the graphs below for the allowable load mass. If the allowable load will be exceeded under the required operating conditions, add an external guide.

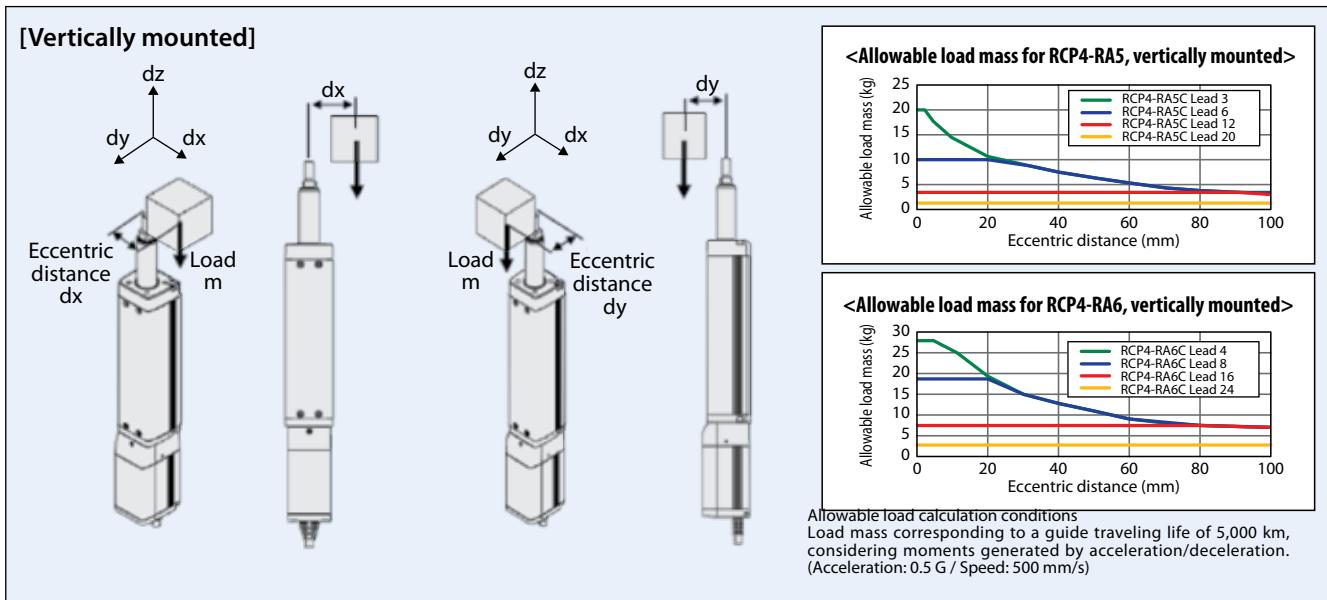
■ Allowable load mass for RCP4-RA5□/6□, horizontally mounted



Allowable load calculation conditions

Load mass corresponding to a guide traveling life of 5,000 km, considering moments generated by acceleration/deceleration. (Acceleration: 1 G / Speed: 500 mm/s)

■ Allowable load mass for RCP4-RA5□/6□, vertically mounted



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