

# RCP4-RA5C

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

Model Specification Items	<b>RCP4</b>	<b>RA5C</b>	<b>I</b>	<b>42P</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
			I: Incremental specification	42P: Pulse motor, size 42□	20: 20 mm 12: 12 mm 6: 6 mm 3: 3 mm	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 length	Refer to the options table below.

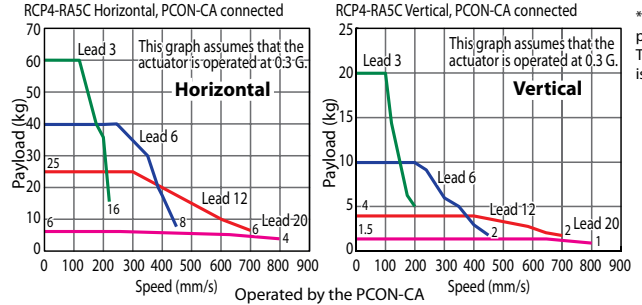
## Built-in guide mechanism



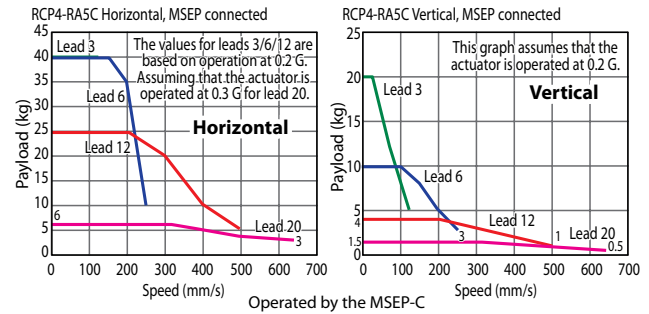
- POINT**  
Notes on selection
- The maximum payload is the value when operated at 0.3G (0.2G with some models) acceleration. The upper limit of acceleration is 1 G (\*). Note that raising the acceleration causes the payload to drop.  
(\* The specific value varies depending on the connected controller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

## Correlation Diagrams of Speed and Payload

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



\* 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		Max. push force (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCP4-RA5C-I-42P-20-①-P3-②-③	20	PCON-CA	6	1.5	56	50~400 (every 50mm)
		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	60 (*)	20 (*)		

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)	—
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	—
Flange bracket	FL	P8	—
Non-motor end specification	NM	P8	—
Scraper	SC	P8	—

### Actuator Specifications

Item	Description
Drive system	Ball screw $\phi$ 10 mm, rolled C10
Positioning repeatability (*1)	$\pm 0.02$ mm [ $\pm 0.03$ mm]
Lost motion	0.1mm or less
Rod	$\phi$ 22mm stainless steel pipe
Rod non-rotation precision	$\pm 0$ deg
Allowable rod load mass	Refer to P. 22 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 [ ].

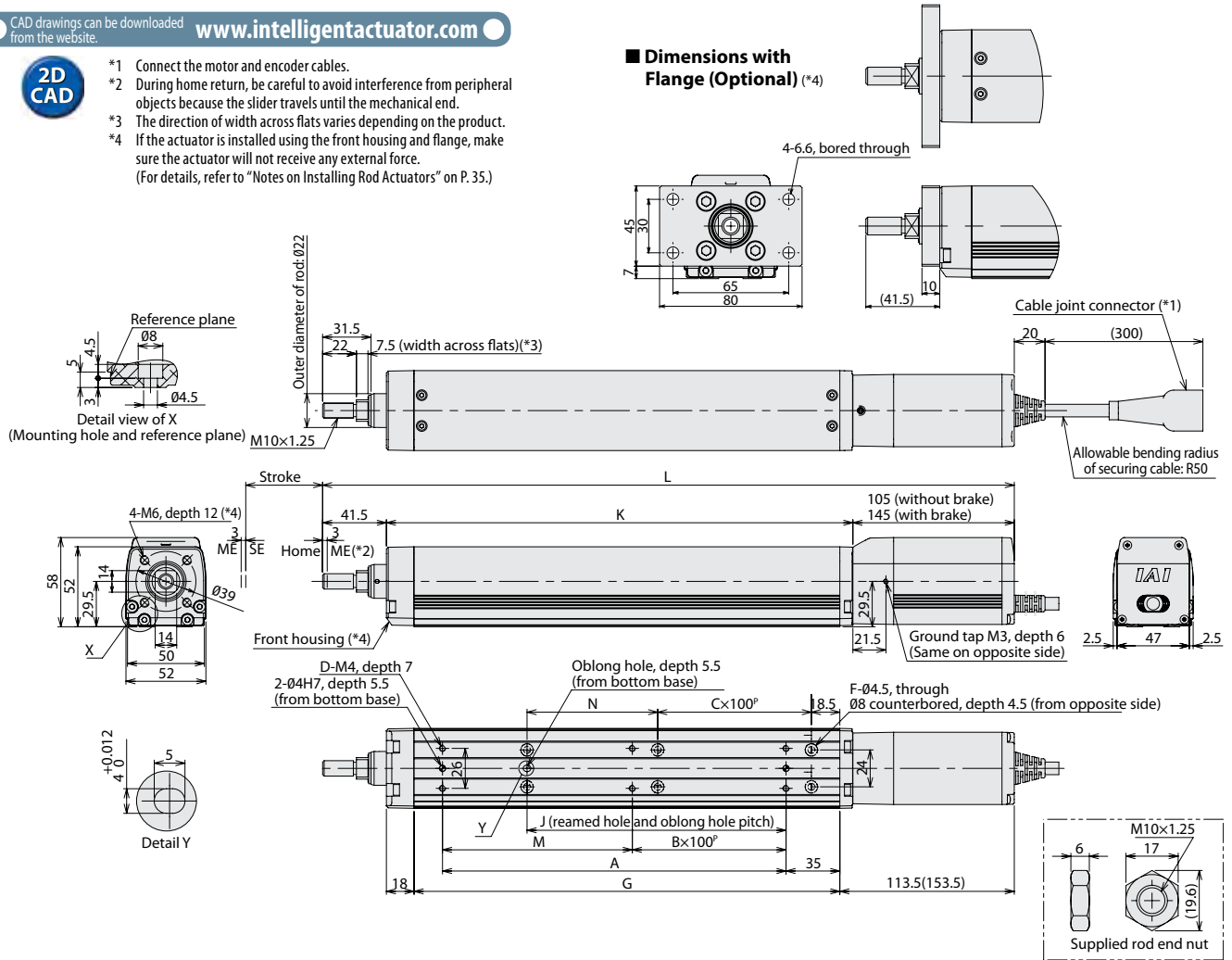
## Dimensional Drawings

CAD drawings can be downloaded from the website.

[www.intelligentactuator.com](http://www.intelligentactuator.com)

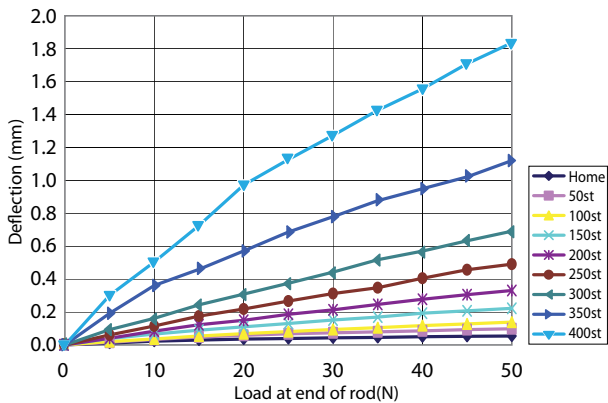
2D CAD

- \*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

L	Stroke	50	100	150	200	250	300	350	400
	Without brake	300	350	400	450	500	550	600	650
	With brake	340	390	440	490	540	590	640	690
	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	73.5	123.5	73.5	123.5	73.5	123.5
	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 (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)	2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6
Mass (kg)	Without brake	1.9	2.1	2.4	2.7	2.9	3.2	3.4	3.7
	With brake	2.1	2.4	2.6	2.9	3.1	3.4	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.