RCP2CR-SA5C

Cleanroom ROBO Cylinder Slider Coupling Type 52mm Width
Pulse motor Aluminum Base

■ Configuration: RCP2CR — SA5C — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

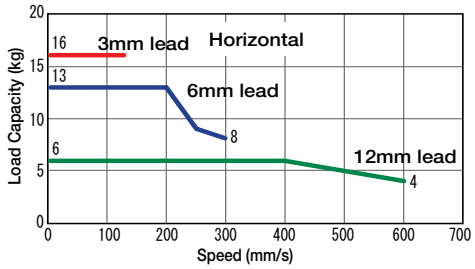
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2CR	SA5C	I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm 〜 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom R ☐☐ : Robot cable	BE: Brake (Cable exiting from end) BL: Brake (Cable exiting from left) BR: Brake (Cable exiting from right) NM: Reversed-home VR: Intake port on opposite side

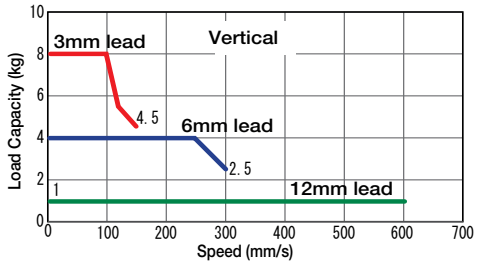
* See page Pre-35 for an explanation of the naming convention.

Technical References P. A-5

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

(2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-53.

(4) The cleanliness class 10 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

Actuator Specifications

■ Lead and Load Capacity

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

Model	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SA5C-I-42P-12-①-②-③-④	12	〜6	1	50〜800 (50mm increments)
RCP2CR-SA5C-I-42P-6-①-②-③-④	6	〜13	〜4	
RCP2CR-SA5C-I-42P-3-①-②-③-④	3	16	〜8	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50〜550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction Volume (Nl/min)
12	600	540	460	400	360	300	50
6	300	270	230	200	180	150	30
3	150	135	115	100	90	75	15

(Unit: mm/s)

① Stroke List

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

③ Cable List

Type	Cable Symbol	Standard Price
Standard Type	P (1m)	–
	S (3m)	–
	M (5m)	–
Special Lengths	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)	–

* See page A-39 for cables for maintenance.

④ Option List

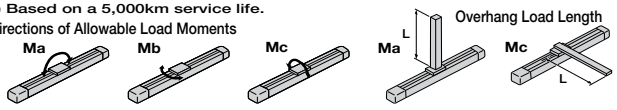
Name	Option Code	See Page	Standard Price
Brake (Cable exiting from end)	BE	→ A-25	–
Brake (Cable exiting from left)	BL	→ A-25	–
Brake (Cable exiting from right)	BR	→ A-25	–
Reversed-home	NM	→ A-33	–
Intake port on opposite side	VR	→ A-38	–

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Load Length	Ma direction: 150mm or less Mb, Mc direction: 150mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	Class 10 (0.1μm)
Ambient Operating Temp./Humidity	0〜40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Dimensions

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

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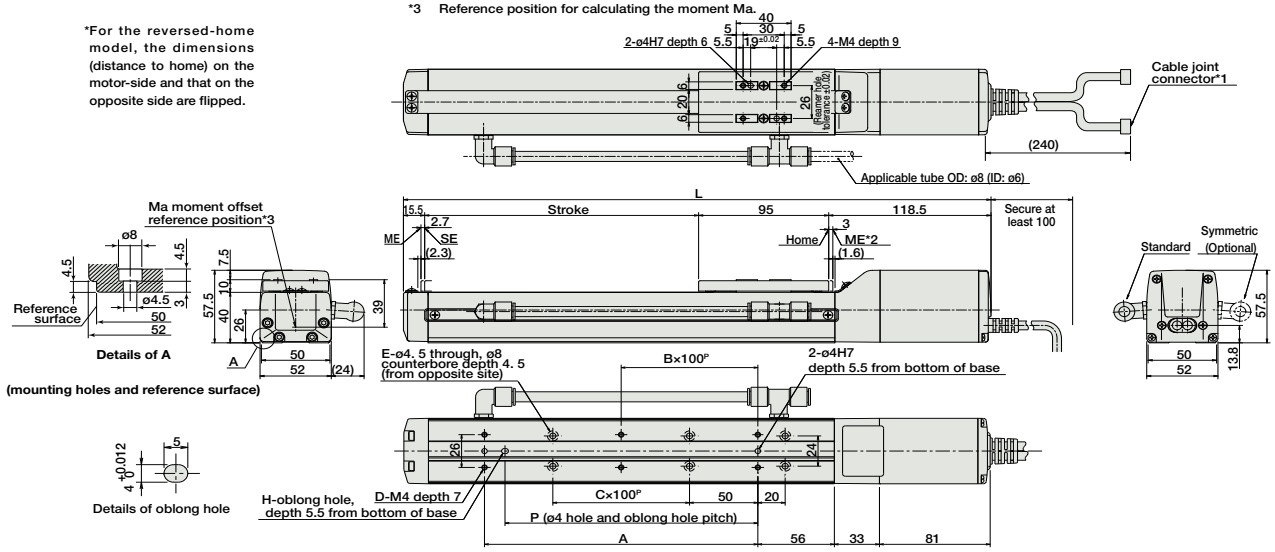
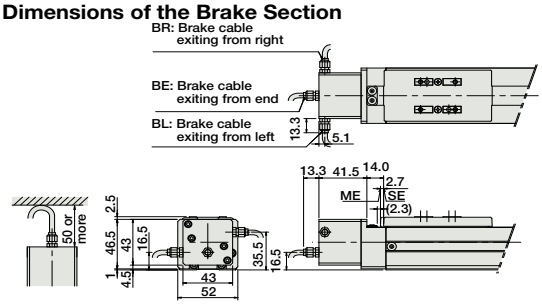
2D CAD 3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The motor-encoder cable is connected here. See page A-39 for details on cables.
*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section



* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 40mm (53.3mm with the cable exit out its end); add 0.4kg to weight.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029
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
E	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.4

② Compatible Controllers

The RCP2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-①	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	See P481	–	→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.	–	→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H					–	
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points			–	→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H					–	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)			–	
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support				–	
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points			–	
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points			–	→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible Operation is possible on up to 2 axes	1500 points			–	→ P557

* This is for the single-axis PSEL.
* ① is a placeholder for the power supply voltage (1: 100V, 2: 100～240V).