

# RCP3-SA5R

ROBO Cylinder Slider Type 50mm Width Pulse Motor Side-Mounted Motor

■ Configuration: **RCP3** — **SA5R** — **I** — **42P** — [ ] — [ ] — [ ] — [ ] — [ ]

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental  
\* The Simple absolute encoder models are labeled as "I".

42P: Pulse motor  
42 □ size

12 : 12mm  
6 : 6mm  
3 : 3mm

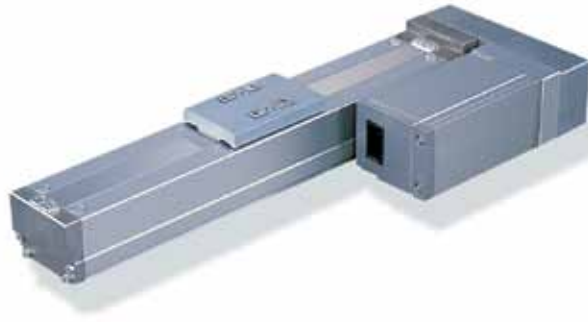
50: 50mm  
800: 800mm (50mm pitch increments)

P1: PCON  
RPCON  
PSEL  
P3: PMEC  
PSEP

N : None  
P : 1m  
S : 3m  
M : 5m  
X □ □ : Custom Length

See Options below  
\* Be sure to specify which side the motor is to be mounted (ML/MR).

\* See page Pre-35 for explanation of each code that make up the configuration name.

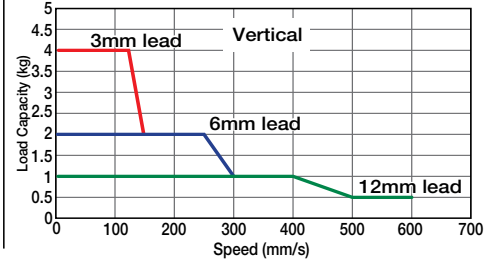
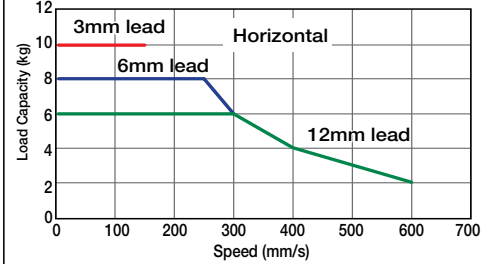


Technical References A-5



- (1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
- (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). These values are the upper limits for the acceleration.

■ Speed vs. Load Capacity  
Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications

■ Lead and Load Capacity

Model	Lead (mm)	Max. Load Capacity		Maximum Push Force (N)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP3-SA5R-I-42P-12-①-②-③-④	12	~ 6	~ 1	47	50~800 (50mm increments)
RCP3-SA5R-I-42P-6-①-②-③-④	6	~ 8	~ 2	95	
RCP3-SA5R-I-42P-3-①-②-③-④	3	10	~ 4	189	

■ Stroke and Maximum Speed

Stroke/Lead	50 ~ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
	12	600	570	490	425	370
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

① Stroke List

Stroke (mm)	Standard Price	
	With cover (standard)	No cover (Option)
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 (Robot Cables)	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	X06 (6m) ~ X10 (10m)	-
	X11 (11m) ~ X15 (15m)	-
	X16 (16m) ~ X20 (20m)	-
		-

\* The standard cable is the motor-encoder integrated robot cable.

\* See page A-39 for cables for maintenance.

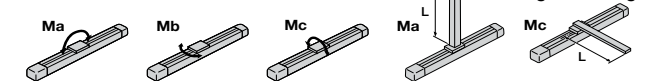
④ Option List

Name	Option Code	See Page	Standard Price
Brake-Equipped	B	→ A-25	-
Cable Exit Direction (Top)	CJT	→ A-25	-
Cable Exit Direction (Outside)	CJO	→ A-25	-
Cable Exit Direction (Bottom)	CJB	→ A-25	-
Left-Mounted Motor (Standard)	ML	→ A-33	-
Right-Mounted Motor	MR	→ A-33	-
No Cover	NCO	→ A-33	-
Reversed-home	NM	→ A-33	-

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 10.2N·m Mb: 14.6N·m Mc: 8.53N·m
Allowable Dynamic Load Moment	Ma: 3.92N·m Mb: 5.58N·m Mc: 8.53N·m
Overhang Load Length	130mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moment



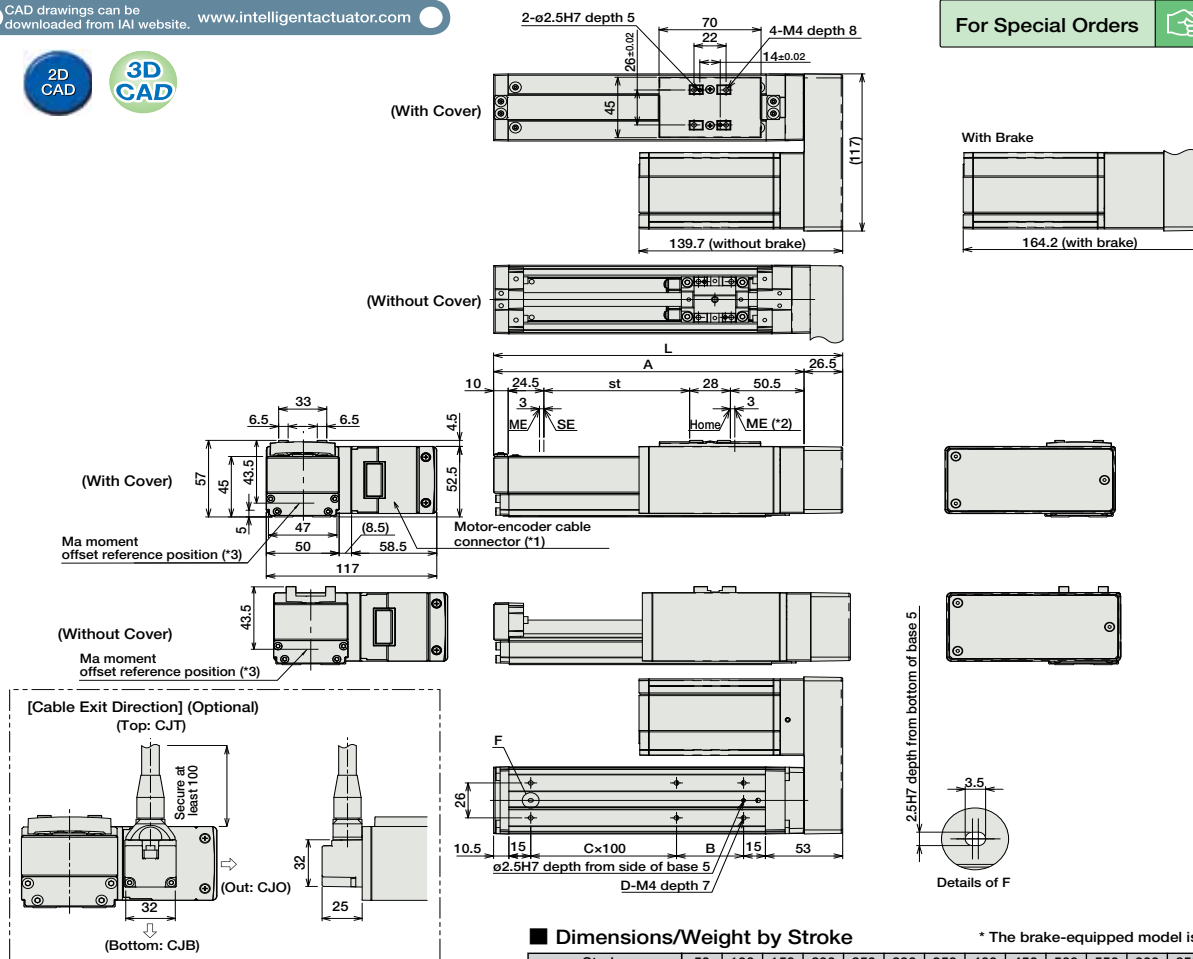
5,000 km service life

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders A-9



■ Dimensions/Weight by Stroke

\* The brake-equipped model is heavier by 0.4kg.

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	189.5	239.5	289.5	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
A	163	213	263	313	363	413	463	513	563	613	663	713	763	813	863	913
B	96	46	96	46	96	46	96	46	96	46	96	46	96	46	96	46
C	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
Weight (kg)	With Cover	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.4	3.6
	No Cover	1.6	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2

(\*1) The motor-encoder cable provided is an integrated cable. (See page A-39.)

(\*2) After homing, the slider moves to the ME; therefore, please watch for any interference with surrounding objects.

ME : Mechanical end  
SE : Stroke end

(\*3) Reference position for calculating the moment Ma

② Compatible Controllers

The RCP3 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	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.					
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	2A Max.	-	→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	2A Max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0	Programmed operation is possible. Can operate 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).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor