

# RCP2-BA7/BA7U

ROBO Cylinder Belt Type 68mm Width Pulse Motor  
Top-Mounted Motor / Bottom-Mounted Motor

■ Configuration: **RCP2** —  — **I** — **42P** — **54** —  —  —  —

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

BA7 : Belt type Top-mounted motor  
BA7U: Belt type Bottom-mounted motor

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

42P: Pulse motor 42 size

54: 54mm

600: 600mm  
1200: 1200mm (50mm pitch increments)

P1: PCON  
P2: RPCON  
PSEL  
P3: PMEC  
PSEP

N : None  
P : 1m  
S : 3m  
M : 5m  
X  : Custom Length  
R  : Robot cable

NM: Reversed-home

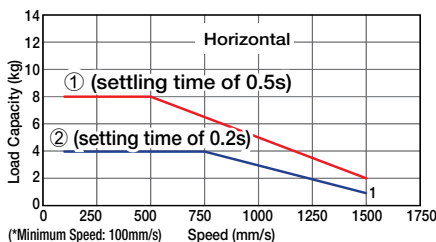
\* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References A-5

- POINT** Notes on Selection
- (1) Operating the belt type actuator at low speeds may cause vibration and/or resonance. Therefore, please set the speed at 100mm/s or faster.
  - (2) Since the RCP2 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.
  - (3) The load capacity is based on operation at an acceleration of 0.5G. 0.5G is the upper limit for the acceleration.

■ 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.



Note:  
Graph ① is for standard specifications, with settling time of 0.5s for calculating the positioning time.  
Graph ② reflects some changes in the controller settings. The load capacity is lower, however the settling time is decreased to 0.2s.  
If the load capacity is lower than graph ②, and you want to shorten the positioning time, change the controller settings. (See the manual for details.)  
(Vertical operation is not possible.)

## Actuator Specifications

Model	Motor Mounting Direction	Lead (mm)	Max. Load Capacity (Note 1)		Stroke (mm)	Stroke and Maximum Speed	
			Horizontal (kg)	Vertical (kg)		Lead	600 ~ 1200 (50mm increments)
RCP2-BA7-I-42P-54-①-②-③-④	Top	54 equivalent	~ 8	Not Allowed	600 ~ 1200 (50mm increments)	54 equivalent	1500
RCP2-BA7U-I-42P-54-①-②-③-④	Bottom						

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options (Unit: mm/s)

### ① Stroke List

Stroke (mm)	Standard Price
600	-
650	-
700	-
750	-
800	-
850	-
900	-
950	-
1000	-
1050	-
1100	-
1150	-
1200	-

### ③ Cable List

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

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

### ④ Option List

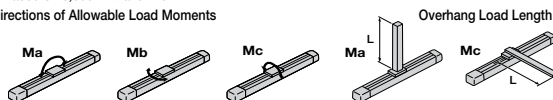
Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	-

### Actuator Specifications

Item	Description
Drive System	Timing Belt
Positioning Repeatability	±0.1mm
Lost Motion	0.1mm or less
Allowable Dynamic Moment (*)	Ma: 13.8 N·m Mb: 19.7 N·m Mc: 29.0 N·m
Overhang Load Length	Ma direction: 150mm or less; Mb-Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km travel life.

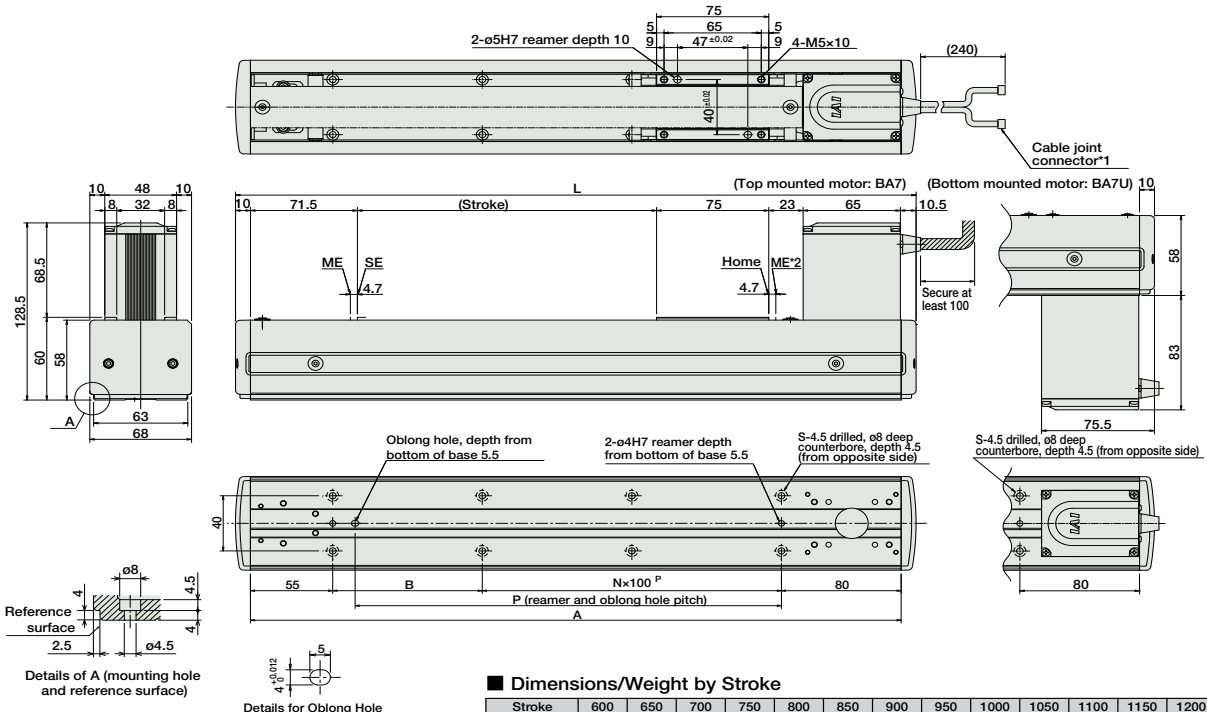
Directions of Allowable Load Moments



Dimensions

For Special Orders A-9

\*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



■ Dimensions/Weight by Stroke

Stroke	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
L	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355	1405	1455
A	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385	1435
B	100	50	100	50	100	50	100	50	100	50	100	50	100
N	6	7	7	8	8	8	9	10	10	11	11	12	12
P	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285
S	16	18	18	20	20	22	22	24	24	26	26	28	28
Weight (kg)	3.6	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.2	5.3

② Compatible Controllers

The RCP2 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			-	
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