

# RCP3-RA2BC

ROBO Cylinder Mini Rod Type Motor Unit Coupling Type 28mm Width  
Pulse Motor Lead Screw

■ Configuration: **RCP3** — **RA2BC** — **I** — **20P** —  —  —  —  —

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

I: Incremental  
\* The Simple absolute encoder is also considered type "I".

20P: Pulse motor  
20 □ size  
6S: 6mm lead screw  
4S: 4mm lead screw  
2S: 2mm lead screw

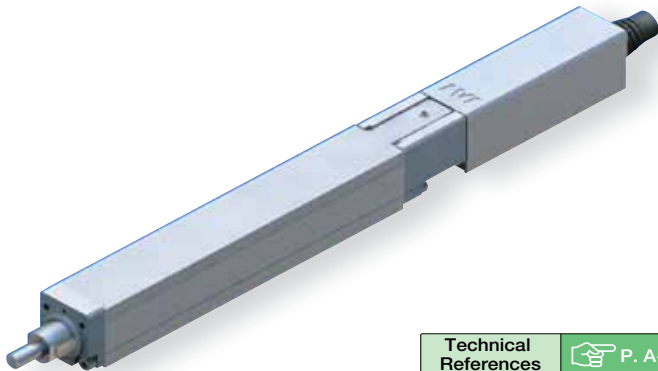
25: 25mm  
150: 150mm (25mm pitch increments)

P1: PCON  
RPCON  
PSEL  
P3: PMEC  
PSEP

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

B: Brake  
NM: Reversed-home

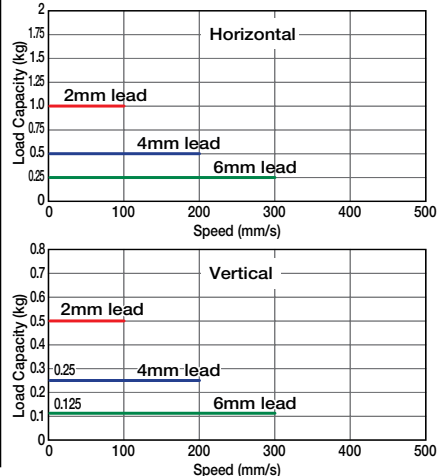
\* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- Notes on Selection**
- (1) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.
  - (2) The horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.
  - (3) The maximum pushing force is exerted at 5mm/s.
  - (4) If the actuator is used in a dusty environment, its service life will become significantly shorter.
  - (5) This model uses a lead screw. Please ensure that your usage is appropriate for its characteristics. (See page Pre-42 for more information.)

■ 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     |            |           |                    |               |                        |                                | Stroke and Maximum Speed   |        |         |         |             |
|-----------------------------|------------|-----------|--------------------|---------------|------------------------|--------------------------------|----------------------------|--------|---------|---------|-------------|
| ■ Lead and Load Capacity    |            |           |                    |               |                        |                                | ■ Stroke and Maximum Speed |        |         |         |             |
| Model                       | Feed Screw | Lead (mm) | Max. Load Capacity |               | Maximum Push Force (N) | Positioning Repeatability (mm) | Stroke (mm)                | Stroke |         |         |             |
|                             |            |           | Horizontal (kg)    | Vertical (kg) |                        |                                |                            | Lead   | 25 (mm) | 50 (mm) | 75~150 (mm) |
| RCP3-RA2BC-I-20P-6S-①-②-③-④ | Lead Screw | 6         | 0.25               | 0.125         | See page A-68.         | ±0.05                          | 25 ~ 150 (25mm increments) | 6      | 180     | 280     | 300         |
| RCP3-RA2BC-I-20P-4S-①-②-③-④ |            | 4         | 0.5                | 0.25          |                        |                                |                            | 4      | 180     | 200     |             |
| RCP3-RA2BC-I-20P-2S-①-②-③-④ |            | 2         | 1                  | 0.5           |                        |                                |                            | 2      | 100     |         |             |

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

① Stroke List

| Stroke (mm) | Standard Price |            |
|-------------|----------------|------------|
|             | Feed Screw     | Lead Screw |
| 25          | -              | -          |
| 50          | -              | -          |
| 75          | -              | -          |
| 100         | -              | -          |
| 125         | -              | -          |
| 150         | -              | -          |

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 RCP3 comes standard with a robot cable.  
\* See page A-39 for cables for maintenance.

④ Option List

| Name          | Option Code | See Page | Standard Price |
|---------------|-------------|----------|----------------|
| Brake         | B           | → A-25   | -              |
| Reversed-home | NM          | → A-33   | -              |

Actuator Specifications

| Item                             | Description  |
|----------------------------------|--|
| Drive System                     | Lead screw ø6mm C10 grade                                |
| Lost Motion                      | 0.3mm or less (initial value)                            |
| Base                             | Material: Aluminum (white alumite treated)               |
| Guide                            | Sliding guide  |
| Ambient Operating Temp./Humidity | 0 ~ 40°C, 85% RH or less (non-condensing)                |
| Service Life                     | Horizontal: 5 million cycles Vertical: 10 million cycles |

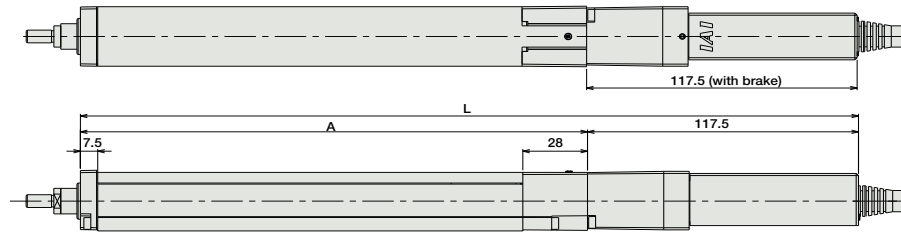
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC/AMEC
- ROBO NET
- ERC2
- PCON
- ACON
- SDON
- PSEL
- ASEL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

Dimensions

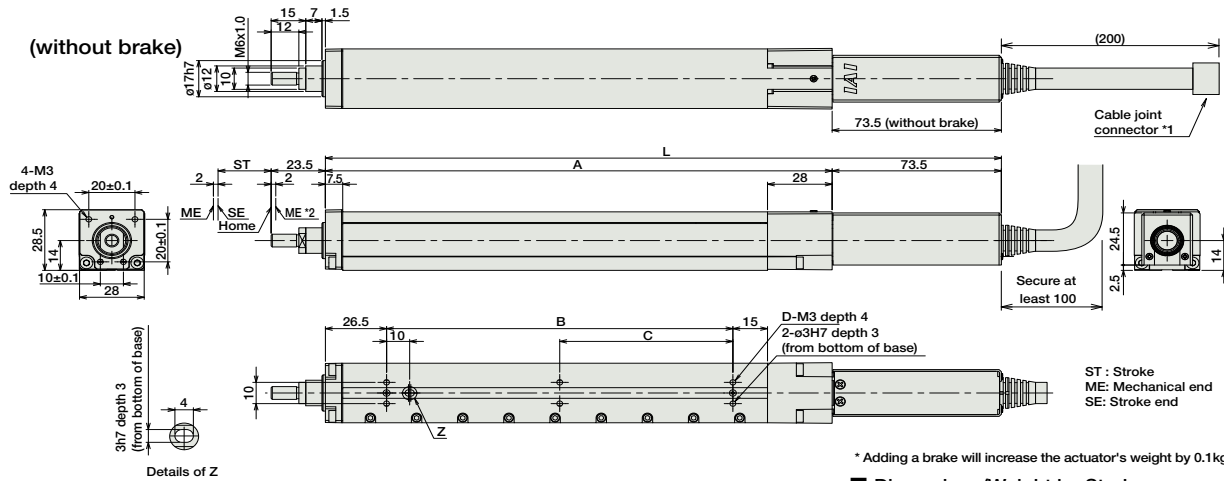
For Special Orders P. A-9

- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

(with brake)



(without brake)



\* Adding a brake will increase the actuator's weight by 0.1 kg.

■ Dimensions/Weight by Stroke

| Stroke         | 25   | 50    | 75    | 100   | 125   | 150   |
|----------------|------|-------|-------|-------|-------|-------|
| No Brake       | 168  | 193   | 218   | 243   | 268   | 293   |
| Brake-equipped | 212  | 237   | 262   | 287   | 312   | 337   |
| A              | 94.5 | 119.5 | 144.5 | 169.5 | 194.5 | 219.5 |
| B              | 25   | 50    | 75    | 100   | 125   | 150   |
| C              | 0    | 0     | 0     | 50    | 62.5  | 75    |
| D              | 4    | 4     | 4     | 6     | 6     | 6     |
| Weight (kg)    | 0.3  | 0.34  | 0.38  | 0.41  | 0.44  | 0.47  |

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-20PI-NP-2-①   | Easy-to-use controller, even for beginners  | 3 points                | AC100V<br>AC200V | See P481              | -              | → P477   |
|   |               | PSEP-C-20PI-NP-2-0   | Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type. |                         |                  |                       |                | → P487   |
| Splash-Proof Solenoid Valve Type                  |               | PSEP-CW-20PI-NP-2-0  |   |                         |                  |                       |                |          |
| Positioner Type                                   |               | PCON-C-20PI-NP-2-0   | Positioning is possible for up to 512 points  | 512 points              | DC24V            | 2A max.               | -              | → P525   |
| Safety-Compliant Positioner Type                  |               | PCON-CG-20PI-NP-2-0  |   |                         |                  |                       |                |          |
| Pulse Train Input Type (Differential Line Driver) |               | PCON-PL-20PI-NP-2-0  | Pulse train input type with differential line driver support  | (-)                     | DC24V            | 2A max.               | -              | → P525   |
| Pulse Train Input Type (Open Collector)           |               | PCON-PO-20PI-NP-2-0  |   |                         |                  |                       |                |          |
| Serial Communication Type                         |               | PCON-SE-20PI-N-0-0   | Dedicated to serial communication   | 64 points               |                  |                       |                |          |
| Field Network Type                                |               | RPCON-20P            | Dedicated to field network  | 768 points              |                  |                       |                | → P503   |
| Program Control Type                              |               | PSEL-C-1-20PI-NP-2-0 | 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, or 2: 100~240V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
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- Controllers Integrated
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- Gripper/ Rotary Type
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- PMEC /AMEC
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