

# RCP2-RA10C

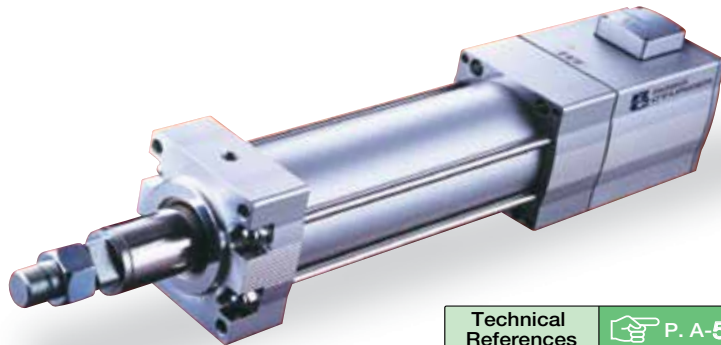
ROBO Cylinder Rod Type 100mm Width Pulse Motor Straight Type

■ Configuration: **RCP2** — **RA10C** — **I** — **86P** —  —  — **P2** —  —

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

I: Incremental 86P: Pulse motor 86 □ size 10 : 10mm 5 : 5mm 2.5 : 2.5mm 50: 50mm 300: 300mm (50mm pitch increments) P2: PCON-CF N : None P : 1m S : 3m M : 5m X □ : Custom R □ : Robot cable A1-A3 : Connector cable exit direction B : Brake FL : Flange FT : Foot bracket

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

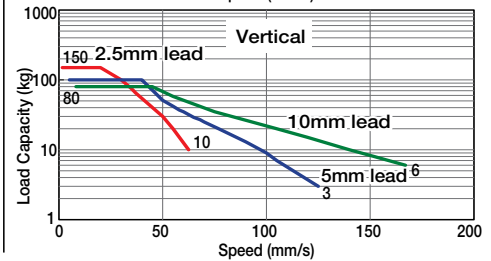
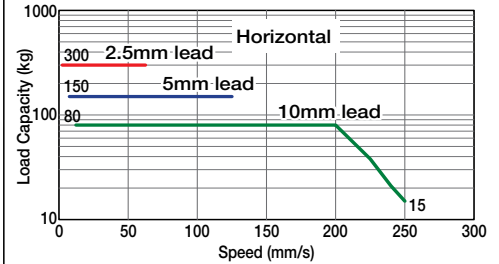


Technical References P. A-5

- POINT** Notes on Selection
- (1) Minimum speed is set per each lead. (10mm-lead: 10mm/s, 5mm-lead: 5mm/s, 2.5-lead: 1mm/s) Please note that if the actuator is operated below the minimum speed, vibration may occur.
  - (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 0.3G for 10mm-lead, 0.02G for 5mm-lead, and 0.01 for 2.5-lead. This is the upper limit of the acceleration. In addition, 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.

### 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.



### Actuator Specifications

#### Lead and Load Capacity

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

#### Stroke and Maximum Speed

Model	Lead (mm)	Max. Load Capacity (Note 1)		Maximum Push Force (N)(Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2-RA10C-I-86P-10-①-P2-②-③	10	~ 80	~ 80	1500	50 ~ 300 (50mm increments)
RCP2-RA10C-I-86P-5-①-P2-②-③	5	150	~ 100	3000	
RCP2-RA10C-I-86P-2.5-①-P2-②-③	2.5	300	~ 150	6000	

Stroke / Lead	50 ~ 300 (50mm increments)	
	Stroke	50 ~ 300 (50mm increments)
10	250	<167>
5	125	
2.5	63	

Legend ① Stroke ② Cable length ③ Options

(Note 2) See page A-70 for the pushing force graphs.

\* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price
50	-
100	-
150	-
200	-
250	-
300	-

#### ② 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.

#### ③ Option List

Name	Option Code	See Page	Standard Price
Connector cable exit direction	A1 ~ A3	→ A-25	-
Brake	B	→ A-25	-
Flange	FL	→ A-27	-
Foot bracket	FT	→ A-29	-

#### Actuator Specifications

Item	Description
Drive System	Ball screw C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø40mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

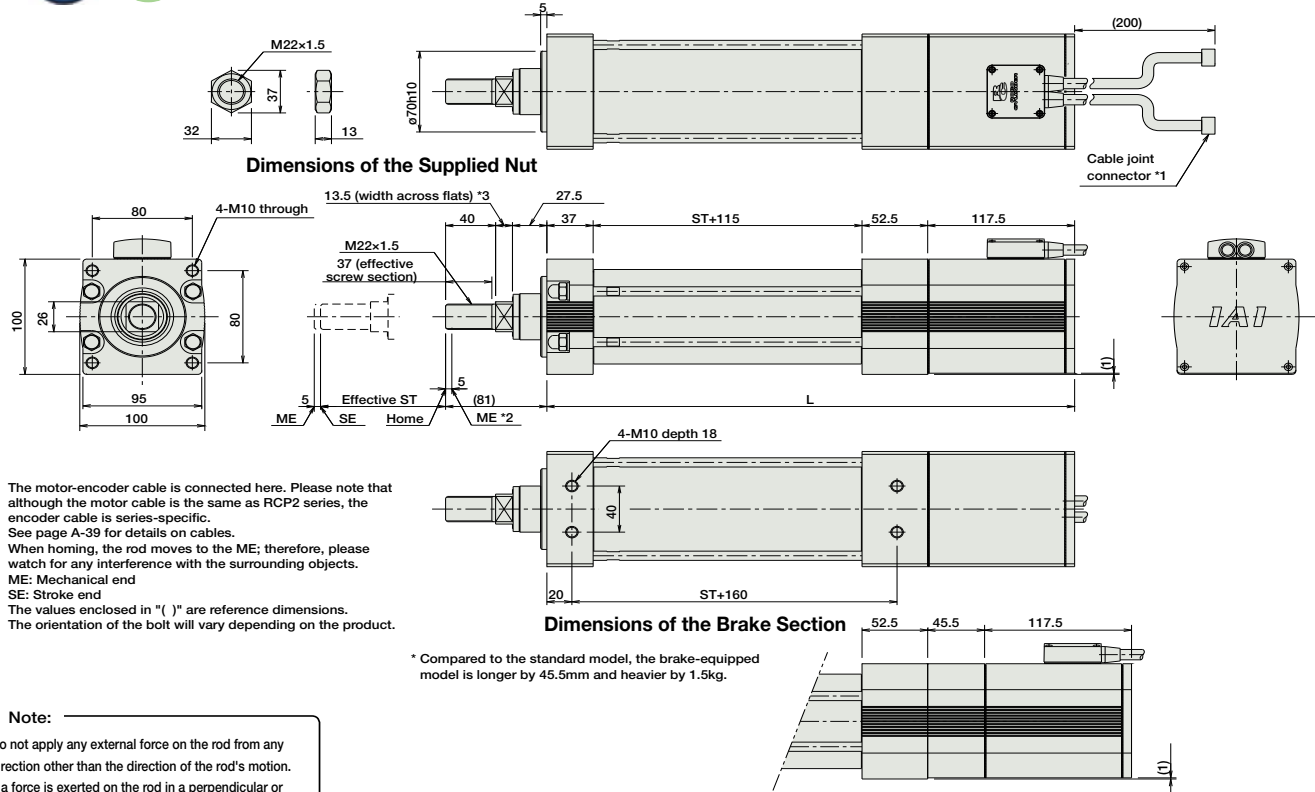
Dimensions

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

For Special Orders P. A-9



\* The RA10C is not available in reversed-home configuration, due to its construction.



- \*1. The motor-encoder cable is connected here. Please note that although the motor cable is the same as RCP2 series, the encoder cable is series-specific. See page A-39 for details on cables.
- \*2. When homing, the rod 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. The orientation of the bolt will vary depending on the product.

**Note:**  
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

\* Compared to the standard model, the brake-equipped model is longer by 45.5mm and heavier by 1.5kg.

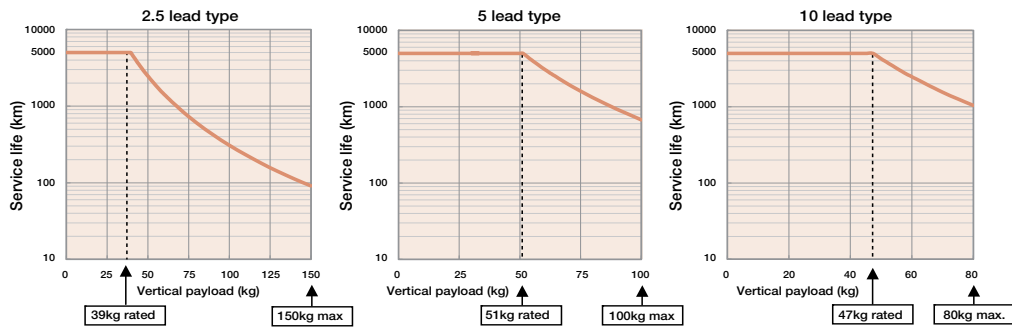
**■ Dimensions/Weight by Stroke**

Stroke	50	100	150	200	250	300
L	372	422	472	522	572	622
Weight (kg)	9	9.5	10	10.5	11	11.5

Vertical Payload and Service Life

The service life of a rod-type ROBO Cylinder is 5,000km. However, since the RCP2-RA10C has a larger maximum thrust compared to other types, its service life will largely depend on the load capacity and pushing force used. Therefore, when selecting your product using the Speed vs. Load Capacity, or Pushing Force vs. Current Limit graphs, check the service life using the Load Capacity vs. Load Capacity, and Pushing Force vs. Load Capacity graphs.

**Note:**  
The rated value is the maximum value that can meet a service life of 5,000km. The maximum value is the value at which it is still operable. Please note that operation with values exceeding the rated value will result in a decrease in the service life, as shown in the graphs.



Compatible Controllers

The controller for the RCP2-RA10C type is the following dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Positioner Type		PCON-CF-86PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.	-	→ P525

**Note:**

- Please note that the encoder cable is a dedicated cable for the CF model, which is different from the PCON-C/CG/CY/PL/PO/SE controllers.
- The simple absolute unit cannot be used.

- 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