RCP2W-RA10C

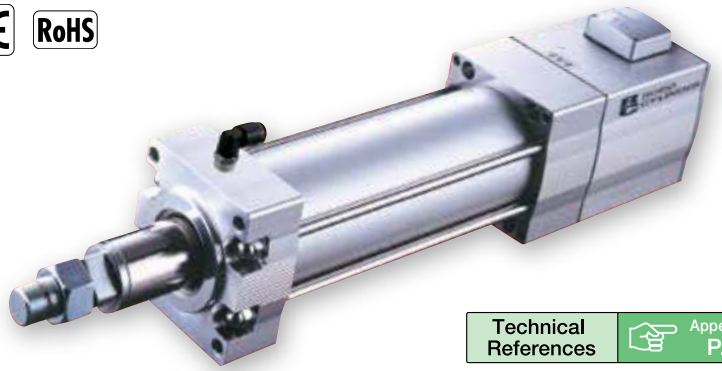
ROBO Cylinder, High-Thrust Dust-Proof Rod Type, Actuator Width 100mm, Pulse Motor, Coupled

Model Specification Items

RCP2W — RA10C — I — 86P — □ — □ — P4 — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
		I: Incremental Type	86P: Pulse motor, 86□ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm 〜 300: 300mm (50mm pitch increments)	P4: PCON-CFA	N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot cable	A1~A3: Connector Cable Cable outlet direction changed B: Brake FL: With flange FT: With foot bracket

* See page Pre-47 for details on the model descriptions.



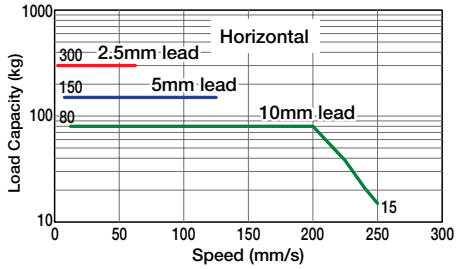
Technical References → Appendix P.5

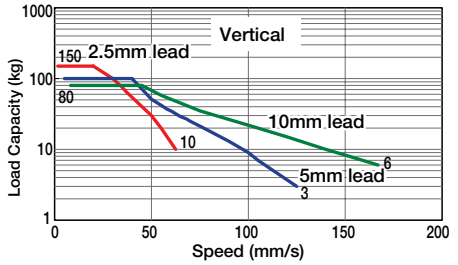
POINT Notes on selection

(1) Minimum speed is set for each lead. (Lead 10: 10mm/s, Lead 5: 5mm/s, Lead 2.5: 1mm/s)
Please note that vibration etc. may occur when operated at the minimum speed.
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check the Speed vs. Load Capacity on the right hand graph to see if your desired speed and load capacity are supported.
(3) The load capacity is based on operation at lead 10: 0.04G, lead 5: 0.02G and lead 2.5: 0.01G.
These values are the upper limits for the acceleration.
Also, this is when the load capacity is attached to the external guide. The rotation stopper may break if an external force coming from a direction other than that of rod's direction of travel is applied.
(4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
(5) See page A-71 for details on push motion.

■ 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 Payload

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

Model number	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP2W-RA10C-I-86P-10-①-P4-②-③	10	~80	~80	1500	50~300 (every 50mm)
RCP2W-RA10C-I-86P-5-①-P4-②-③	5	150	~100	3000	
RCP2W-RA10C-I-86P-2.5-①-P4-②-③	2.5	300	~150	6000	

Code explanation ① Stroke ② Cable length ③ Options *See page A-71 for details on push motion.

■ Stroke and Maximum Speed

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

*The values enclosed in < > apply to vertical settings. (Unit: mm/s)

① Stroke

① Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—

② Cable Length

Type	Cable symbol	Standard Price
Standard	**P** (1m)	—
	S (3m)	—
	M (5m)	—
Special length	**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-59 for cables for maintenance.

③ Options

Name	Option code	See page	Standard price
Connector cable outlet direction changed	**A1~A3**	→ A-41	—
Brake	**B**	→ A-42	—
With flange	**FL**	→ A-46	—
With foot bracket	**FT**	→ A-48	—

Actuator Specifications

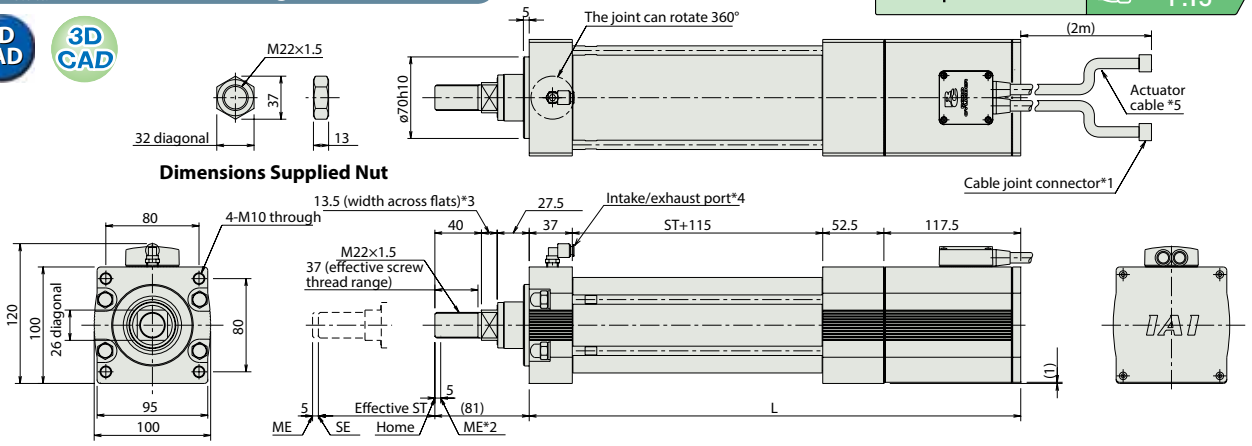
Item	Description
Drive System	Ball screw, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod diameter	ø40mm
Rod non-rotational accuracy	±1.0 degrees
Protective structure	IP54
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

Dimensional Drawings

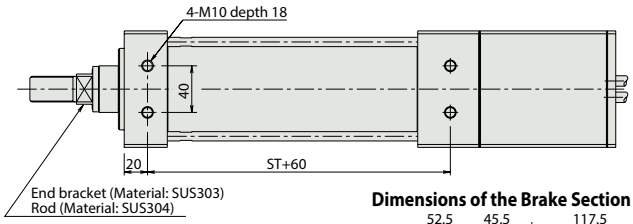
CAD drawings can be downloaded from the website. www.intelligentactuator.com

2D CAD 3D CAD

For Special Orders Appendix P.15



* Please note that reversed home position is unavailable for the RA10C type for structural reasons.



(*1) Connect the motor and encoder cables here.
Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. See page A-59 for details on cables.
The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.

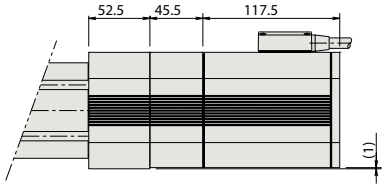
(*2) When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The dimensions enclosed in "( )" are reference dimensions.

(*3) The direction of bolt will vary depending on the product.

(*4) Intake/exhaust port is the air exhaust tube in the main body. Insert OD ø6 mm tube and use it extended to a place that is not prone to water spills or intake.

(*5) The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.

Dimensions of the Brake Section



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

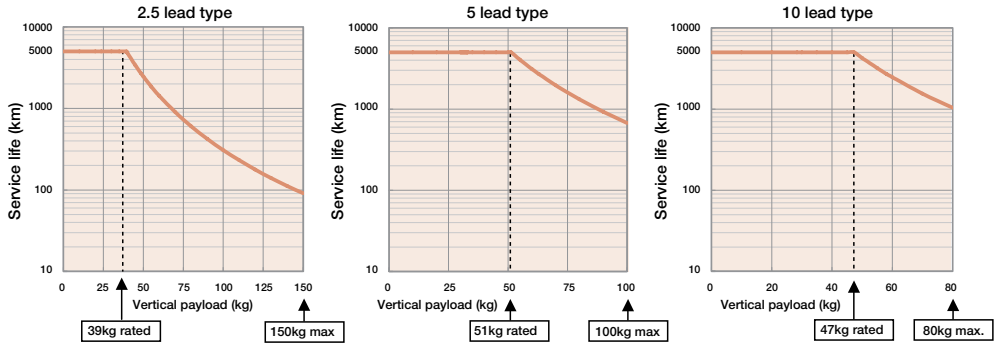
■ Dimensions and Weights by Stroke

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 RCP2W-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.



Applicable Controllers

The controller for the RCP2W-RA10C type is a dedicated controller.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner Type		PCON-CFA-86PI-Ⓘ-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.	—	→ P607

* Ⓘ indicates I/O type.

Note: • Please note that the encoder cable is a dedicated CFA-type cable. (See page A-59.)
• Note that a simple absolute unit cannot be used.