

# RCP4W-SA5C

ROBO Cylinder  
Pulse motor

Splash-proof slider type  
Coupling specification

Actuator width: 55 mm

Model  
Specification  
Items

**RCP4W**

**SA5C**

**I**

**35P**

☐

☐

☐

☐

☐

Series

Type

Encoder  
type

Motor type

Lead

Stroke

Applicable  
controller

Cable length

Options

I: Incremental  
specification

35P: Pulse motor  
size 35

10: 10mm  
5: 5mm

100 : 100mm  
500 : 500mm  
(Can be set in  
50-mm  
increments.)

P3: PCON/MSEL  
P5: RCON/RSEL

N: None  
P: 1 m  
S: 3 m  
M: 5 m

X ☐ ☐ : Length designation  
R ☐ ☐ : Robot cable

Refer to the option  
list below.

\* Also select code "I"  
for the simple absolute  
specification.



- (1) This actuator is designed exclusively for horizontal installation. It cannot be installed vertically. When hanging the actuator from the ceiling or mounting it on the wall, be sure to do so using an optional dedicated bracket.
- (2) The payload varies depending on the acceleration/deceleration. The upper limit of acceleration/deceleration is 0.6 G.
- (3) The cable joint connector is not splash-proof, so install the connector in a location where it will not come in contact with water.
- (4) Refer to the page at right for the air tube length and air flow rate when implementing air purge.

## ■ Payload by Acceleration/Deceleration

With the RCP4W series, the payload remains the same even when the speed is raised. However, the payload will drop if the acceleration is raised. Check on the table below.

Diagram of Acceleration/Deceleration vs. Payload  
[Supported at Both Ends]

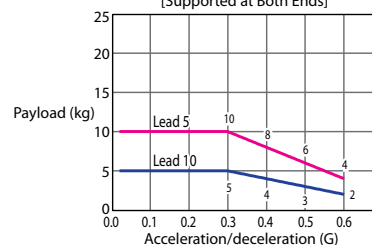
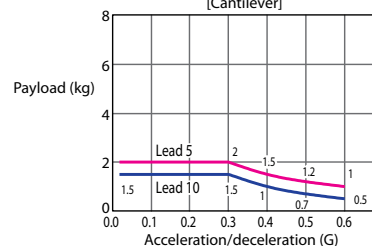


Diagram of Acceleration/Deceleration vs. Payload  
[Cantilever]



## Actuator Specifications

### ■ Leads and Payloads

| Model number                 | Lead (mm) | Maximum horizontal payload (kg) |            | Maximum push force (N) | Positioning repeatability (mm) | Stroke (mm)                      |
|------------------------------|-----------|---------------------------------|------------|------------------------|--------------------------------|----------------------------------|
|                              |           | Supported on both ends          | Cantilever |                        |                                |                                  |
| RCP4W-SA5C-I-35P-10-①-P3-②-③ | 10        | 5                               | 1.5        | 66.9                   | ±0.02                          | 100 to 500 (in 50-mm increments) |
| RCP4W-SA5C-I-35P-5-①-P3-②-③  | 5         | 10                              | 2          | 147.9                  |                                |                                  |

Legend ① Stroke ② Cable length ③ Options

### ■ Stroke and Maximum Speed

| Lead | Stroke | 100 to 500 (in 50-mm increments) |
|------|--------|----------------------------------|
|      |        |                                  |
| 10   |        | 330                              |
| 5    |        | 165                              |

(unit: mm/s)

### ① Stroke

| Stroke (mm) |
|-------------|
| 100         |
| 150         |
| 200         |
| 250         |
| 300         |
| 350         |
| 400         |
| 450         |
| 500         |

### ② Options

| Name   | Option code | See page |
|--|-------------|----------|
| Cable exit from the left side face           | A1          | →P4      |
| Cable exit from the right side face          | A3          | →P4      |
| Additional alumite coating                   | AL          | →P4      |
| Designated grease specification              | G1/G3/G4    | →P4      |
| Food grade grease (edible grease)            | GE          | →P4      |
| Non-motor side specification                 | NM          | →P4      |
| Ceiling mount (bracket mounted on the left)  | HFL         | →P4      |
| Ceiling mount (bracket mounted on the right) | HFR         | →P4      |
| Wall mount sideways on the left              | TFL         | →P4      |
| Wall mount sideways on the right             | TFR         | →P4      |

### ③ Cable length

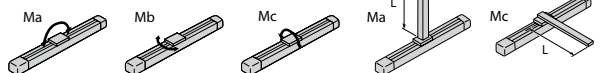
| Type           | Cable symbol          | Standard price |
|----------------|-----------------------|----------------|
| Standard type  | P (1m)                | -              |
|                | S (3m)                | -              |
|                | M (5m)                | -              |
| 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) | -              |
|                |                       | -              |

## Actuator Specifications

| Item                                    | Description   |
|---|---|
| Drive system                            | Ball screw φ8 mm, rolled C10  |
| Positioning repeatability               | ±0.02mm   |
| Lost motion                             | 0.1 mm or less  |
| Static allowable moment                 | Supported on both ends Ma: 5.9 N·m Mb: 8.4 N·m Mc: 13.7 N·m<br>Cantilever Ma: 2.9 N·m Mb: 4.2 N·m Mc: 6.8 N·m |
| Dynamic allowable moment (*)            | Supported on both ends Ma: 3.4 N·m Mb: 4.9 N·m Mc: 8.0 N·m<br>Cantilever Ma: 1.7 N·m Mb: 2.5 N·m Mc: 4.0 N·m  |
| Overhang load length                    | Supported on both ends 125mm or less<br>Cantilever 75 mm or less  |
| Protective structure                    | IP65 (with air purge)   |
| Ambient operating temperature, humidity | 0 to 40°C, 85% RH or less (Non-condensing)  |

(\*) Based on 5,000 km of traveling life

Allowable load moment directions



## Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



\* See P11 for the dimensional drawing for the ceiling mount specification. See P12 for the dimensional drawing for the wall mount specification.

\*1 Connect the motor and encoder cables.

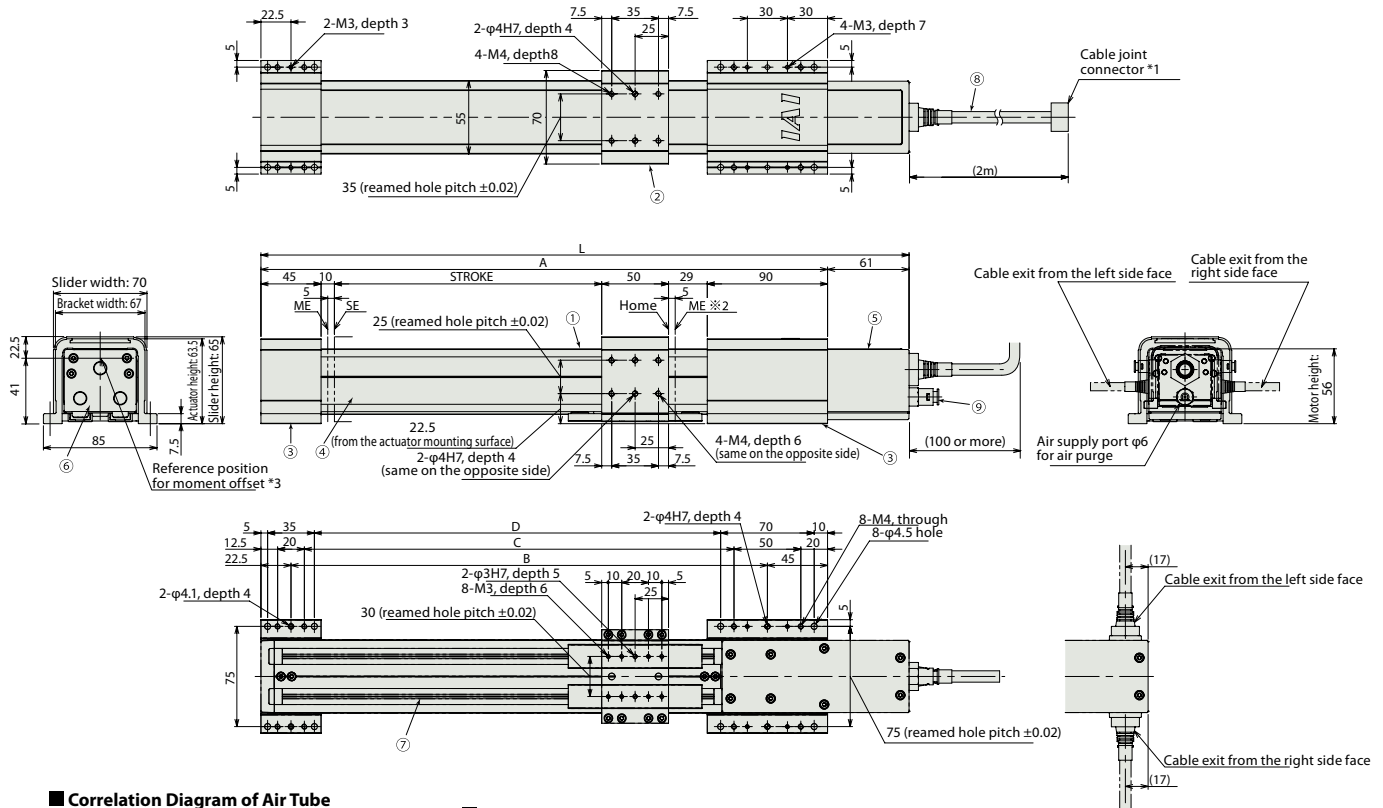
\*2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.

\*3 Reference position for calculating moments.

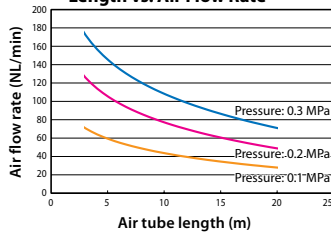
## Materials of Main Components

|                                 |                             |   |
|---------------------------------|-----------------------------|---|
| ① Base                          | Extruded aluminum (A6063)   | Surface treatment: Alumite coating                            |
| ② Table                         | Extruded aluminum (A6063)   | Surface treatment: Alumite coating (excluding machined areas) |
| ③ Mounting bracket (front/rear) | Extruded aluminum (A6063)   | Surface treatment: Alumite coating (excluding machined areas) |
| ④ Side cover                    | Extruded aluminum (A6063)   | Surface treatment: Alumite coating                            |
| ⑤ Motor cover                   | Die-cast aluminum (ADC12)   | Surface treatment: Alumite coating + Paint                    |
| ⑥ Front cover                   | Die-cast aluminum (ADC12)   | Surface treatment: Alumite coating + Paint                    |
| ⑦ Seal                          | Urethane rubber (U)         |   |
| ⑧ Actuator cable                | Polyvinyl chloride (PVC)    | * High flex type cable  |
| ⑨ Air purge joint               | Polyphenylene sulfide (PPS) |   |

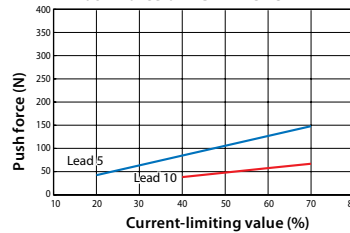
\* Alumite coating has been removed in the machined areas of the table ② and mounting bracket ③. To add alumite coating to these areas, specify the "Additional alumite coating (code: AL)" option.



## Correlation Diagram of Air Tube Length vs. Air Flow Rate



## Push Force of RCP4W-SA5



## Note on Push-motion Operation

When performing push-motion operation, make sure the reactive moment generated by the push force does not exceed 80% of the dynamic allowable moment ( $M_a$  or  $M_b$ ) specified in the catalog.

In push-motion operation, the travel speed is fixed at 25 mm/s.

## Dimensions and Mass by Stroke

| Stroke    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L         | 385   | 435   | 485   | 535   | 585   | 635   | 685   | 735   | 785   |
| A         | 324   | 374   | 424   | 474   | 524   | 574   | 624   | 674   | 724   |
| B         | 256.5 | 306.5 | 356.5 | 406.5 | 456.5 | 506.5 | 556.5 | 606.5 | 656.5 |
| C         | 221.5 | 271.5 | 321.5 | 371.5 | 421.5 | 471.5 | 521.5 | 571.5 | 621.5 |
| D         | 204   | 254   | 304   | 354   | 404   | 454   | 504   | 554   | 604   |
| Mass (kg) | 2.8   | 2.9   | 3.1   | 3.2   | 3.4   | 3.5   | 3.7   | 3.8   | 4.0   |

## Applicable Controller

\* Controller for RCP4W series is PCON, MSEL, RCON or RSEL.  
Please refer our Controller General Catalog and/or contact IAI.