# RCP3-TA3R

ROBO Cylinder, Mini Table Type, Side-Mounted Motor, Actuator Width 36mm, Pulse Motor, Ball Screw Specification

Model Specification Items: **RCP3** — **TA3R** — **I** — **20P** — □ — □ — □ — □ — □ — □

| Series | Type | Encoder type | Motor type | Lead | Stroke | Applicable controller | Cable length | Options |
|---|---|---|---|---|---|---|---|---|
| RCP3 | TA3R | I: Incremental<br>* The Simple absolute encoder is also considered type "I". | 20P: Pulse motor, 20□ size | 6 : 6mm<br>4 : 4mm<br>2 : 2mm | 20: 20mm<br>~<br>100: 100mm<br>(10mm pitch increments) | P1: PCON-PL/PO/SE<br>PSEL<br>P3: PCON-CA<br>PMEC/PSEP<br>MSEP | N: None<br>P: 1m<br>S: 3m<br>M:5m<br>X□□:Custom Length | See Options below.<br>*Be sure to specify which side the motor is to be mounted (ML/MR). |

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

Photo above shows specification with motor side-mounted to the left (ML Option).

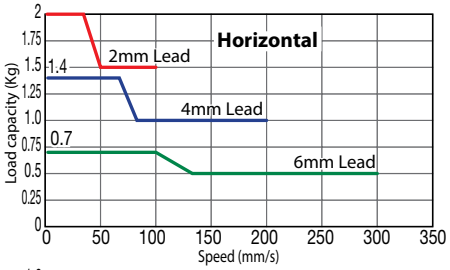
Technical References → Appendix P.5

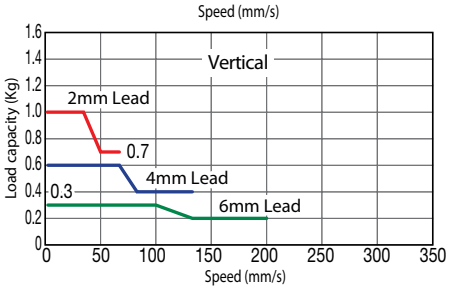
**POINT** Notes on selection

(1) The payload is the value when operated with acceleration of 0.3G (or 0.2G in the case of 2mm-lead and vertical usage). The upper limit for acceleration is 0.3G (or 0.2G in the case of 2mm-lead and vertical usage).
(2) See page A-71 for details on push motion.

## ■ 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

### ■ Leads and Payloads

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

| Model number | Feed Screw | Lead (mm) | Max. Load Capacity (Note 1) Horizontal (kg) | Max. Load Capacity (Note 1) Vertical (kg) | Rated thrust (N) | Positioning repeatability (mm) | Stroke (mm) |
|---|---|---|---|---|---|---|---|
| RCP3-TA3R-I-20P-6-①-②-③-④ | Ball screw | 6 | ~0.7 | ~0.3 | 15 | ±0.02 | 20~100 (every 10mm) |
| RCP3-TA3R-I-20P-4-①-②-③-④ | | 4 | ~1.4 | ~0.6 | 22 | | |
| RCP3-TA3R-I-20P-2-①-②-③-④ | | 2 | ~2 | ~1 | 45 | | |

### ■ Stroke and Maximum Speed

(Unit: mm/s)

| Lead \ Stroke | 20~100 (mm) |
|---|---|
| Ball screw 6 | 300<200> |
| Ball screw 4 | 200<133> |
| Ball screw 2 | 100<67> |

* The values enclosed in < > apply to vertical settings.

Code explanation ① Stroke ② Applicable Controller ③ Cable length ④ Options *See page A-71 for details on push motion.

### ①Stroke

| ①Stroke (mm) | Standard price |
|---|---|
| **20** | — |
| **30** | — |
| **40** | — |
| **50** | — |
| **60** | — |
| **70** | — |
| **80** | — |
| **90** | — |
| **100** | — |

### ③Cable Length

| Type | Cable symbol | Standard price |
|---|---|---|
| Standard (Robot Cables) | **P** (1m) | — |
| | **S** (3m) | — |
| | **M** (5m) | — |
| Special length | **X06** (6m) ~ **X10** (10m) | — |
| | **X11** (11m) ~ **X15** (15m) | — |
| | **X16** (16m) ~ **X20** (20m) | — |

* The standard cable for the RCP3 is the robot cable.
* See page A-59 for cables for maintenance.

### ④Options

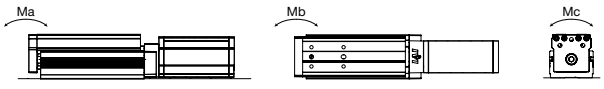
| Name | Option code | See page | Standard price |
|---|---|---|---|
| Brake | **B** | → A-42 | — |
| Side-mounted motor to the left (standard) | **ML** | → A-52 | — |
| Side-mounted motor to the right | **MR** | → A-52 | — |
| Non-motor end specification | **NM** | → A-52 | — |

### Actuator Specifications

| Item | Description |
|---|---|
| Drive System | Ball screw, ø6mm, rolled C10 |
| Lost Motion | 0.1mm or less |
| Base | Material: Aluminum, white alumite treated |
| Allowable dynamic moment (*) | Ma: 3.2 N·m, Mb: 4.6 N·m, Mc: 5.1 N·m |
| Ambient operating temperature, humidity | 0 to 40°C, 85% RH or less (Non-condensing) |

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

Directions of allowable load moments



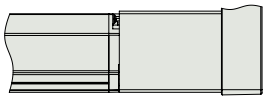
## Dimensional Drawings

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

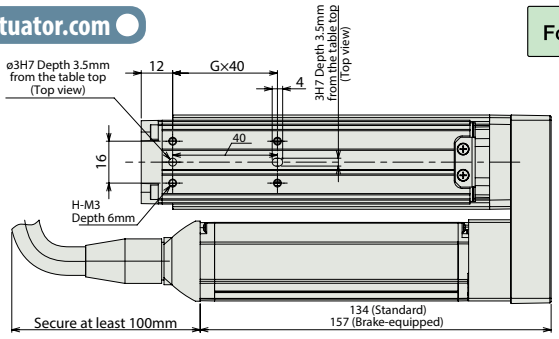
2D CAD 3D CAD

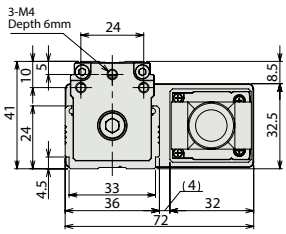
* The drawing below shows the specification with motor side-mounted to the left.

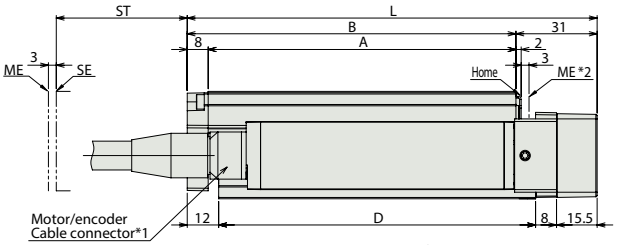
For Special Orders Appendix P.15

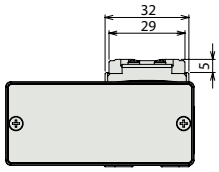


With the brake:
(see drawing on the right for dimensions)



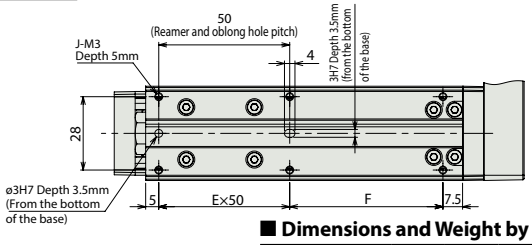




ST : Stroke
ME : Mechanical end
SE : Stroke end

The reference position for moment offset is the same as the position on the TA3C (P304).




(*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.

### ■ Dimensions and Weight by Stroke

* Brake-equipped models are heavier by 0.1kg.

| Stroke | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---|---|---|---|---|---|---|---|---|---|
| L | 126.5 | 136.5 | 146.5 | 156.5 | 166.5 | 176.5 | 186.5 | 196.5 | 206.5 |
| A | 87.5 | 97.5 | 107.5 | 117.5 | 127.5 | 137.5 | 147.5 | 157.5 | 167.5 |
| B | 95.5 | 105.5 | 115.5 | 125.5 | 135.5 | 145.5 | 155.5 | 165.5 | 175.5 |
| D | 91 | 101 | 111 | 121 | 131 | 141 | 151 | 161 | 171 |
| E | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| F | 28.5 | 38.5 | 48.5 | 58.5 | 18.5 | 28.5 | 38.5 | 48.5 | 58.5 |
| G | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| H | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 |
| J | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 8 |
| Weight (kg) | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 |

## ②Applicable Controllers

RCP3 series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

| Name | External view | Model number | Features | Maximum number of positioning points | Input power | Power-supply capacity | Standard price | Reference page |
|---|---|---|---|---|---|---|---|---|
| Solenoid Valve Type |  | PMEC-C-20PI-Ⓘ-2-Ⓘ | Easy-to-use controller, even for beginners | 3 points | AC100V AC200V | Refer to P541 | — | → P537 |
| |  | PSEP-C-20PI-Ⓘ-2-0 | Simple controller operable with the same signal as a solenoid valve | | DC24V | Refer to P555 | — | → P547 |
| Solenoid valve multi-axis type PIO specification |  | MSEP-C-Ⓘⅈ-~~-Ⓘ-2-0 | Positioner type based on PIO control, allowing up to 8 axes to be connected | | | Refer to P572 | — | → P563 |
| Solenoid valve multi-axis type Network specification | | MSEP-C-Ⓘⅈ-~~-Ⓥ-0-0 | Field network-ready positioner type, allowing up to 8 axes to be connected | 256 points | | | | |
| Positioner type High-output specification |  | PCON-CA-20PI-Ⓘ-2-0 | Equipped with a high-output driver Positioner type based on PIO control | 512 points | | Refer to P618 | — | → P607 |
| Pulse-train type High-output specification | | PCON-CA-20PI-PL☐-2-0 | Equipped with a high-output driver Pulse-train input type | (—) | | | — | |
| Field network type High-output specification | | PCON-CA-20PI-Ⓥ-0-0 | Equipped with a high-output driver Supporting 7 major field networks | 768 points | | | — | |
| Pulse Train Input Type (Differential Line Driver) |  | PCON-PL-20PI-Ⓘ-2-0 | Pulse train input type with differential line driver support | (—) | | Refer to P628 | — | → P623 |
| Pulse Train Input Type (Open Collector) | | PCON-PO-20PI-Ⓘ-2-0 | Pulse train input type with open collector support | | | | — | |
| Serial Communication Type |  | PCON-SE-20PI-N-0-0 | Dedicated Serial Communication | 64 points | | | — | |
| Program Control Type |  | PSEL-CS-1-20PI-Ⓘ-2-0 | Programmed operation is possible. Can operate up to 2 axes | 1,500 points | | Refer to P671 | — | → P665 |

* This is for the single-axis PSEL. * Ⓘ indicates I/O type (NP/PN). * Ⓘⅈ indicates power supply voltage (1: 100V / 2: 100~240V).
* Ⓘⅈ indicates number of axes (1 to 8). * Ⓥ indicates field network specification symbol. * ☐ indicates N (NPN specification) or P (PNP specification) symbol.