RCP3-TA7C

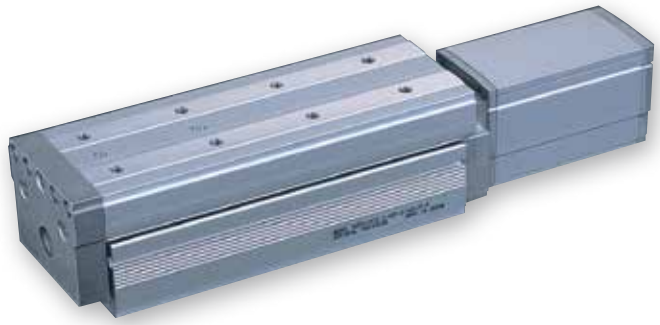
ROBO Cylinder, Table Type, Actuator Width 75mm, Pulse Motor, Coupled

Model Specification Items: **RCP3** — **TA7C** — **I** — **42P** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCP3	TA7C	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor, 42□ size	12: 12mm 6: 6mm 3: 3mm	25: 25mm ~ 200: 200mm (25mm pitch increments)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length	See Options below.

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

CE RoHS



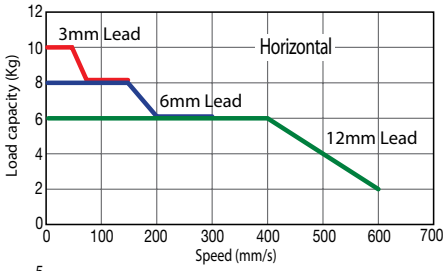
Technical References → Appendix P.5

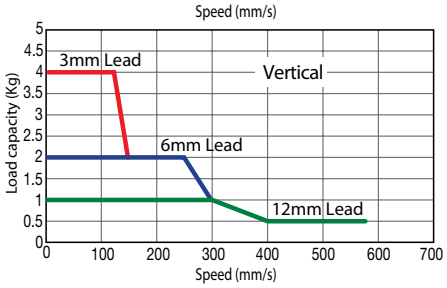
POINT Notes on selection

(1) Since the RCP3 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.
(2) Please note that the maximum speed is different when used horizontally versus vertically.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.
(4) 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	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCP3-TA7C-I-42P-12-①-②-③-④	12	~6	~1	60	25~200 (every 25mm)
RCP3-TA7C-I-42P-6-①-②-③-④	6	~8	~2	110	
RCP3-TA7C-I-42P-3-①-②-③-④	3	~10	~4	189	

■ Stroke and Maximum Speed

(Unit: mm/s)

Lead \ Stroke	25~100 (every 25mm)
12	600<580>
6	300
3	150

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

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

① Stroke

①Stroke (mm)	Standard price
25	—
50	—
75	—
100	—
125	—
150	—
175	—
200	—

③ Cable 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 is the motor-encoder integrated robot cable.
* See page A-59 for cables for maintenance.

④ Options

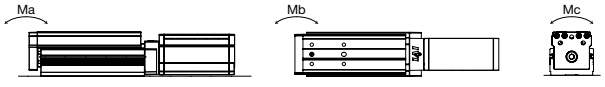
Name	Option code	See page	Standard price
Brake	**B**	→ A-42	—
Cable exit direction (top)	**CJT**	→ A-42	—
Cable exit direction (right)	**CJR**	→ A-42	—
Cable exit direction (left)	**CJL**	→ A-42	—
Cable exit direction (bottom)	**CJB**	→ A-42	—
Non-motor end specification	**NM**	→ A-52	—

Actuator Specifications

Item	Description
Drive System	Ball screw, ø10mm, rolled C10
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, special alumite treated
Allowable static moment	Ma: 42.6 N·m, Mb: 60.8 N·m, Mc:123.2 N·m
Allowable dynamic moment (*)	Ma: 9.91 N·m, Mb: 14.13 N·m, Mc: 28.65 N·m
Overhang load length	Within the load moment range
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

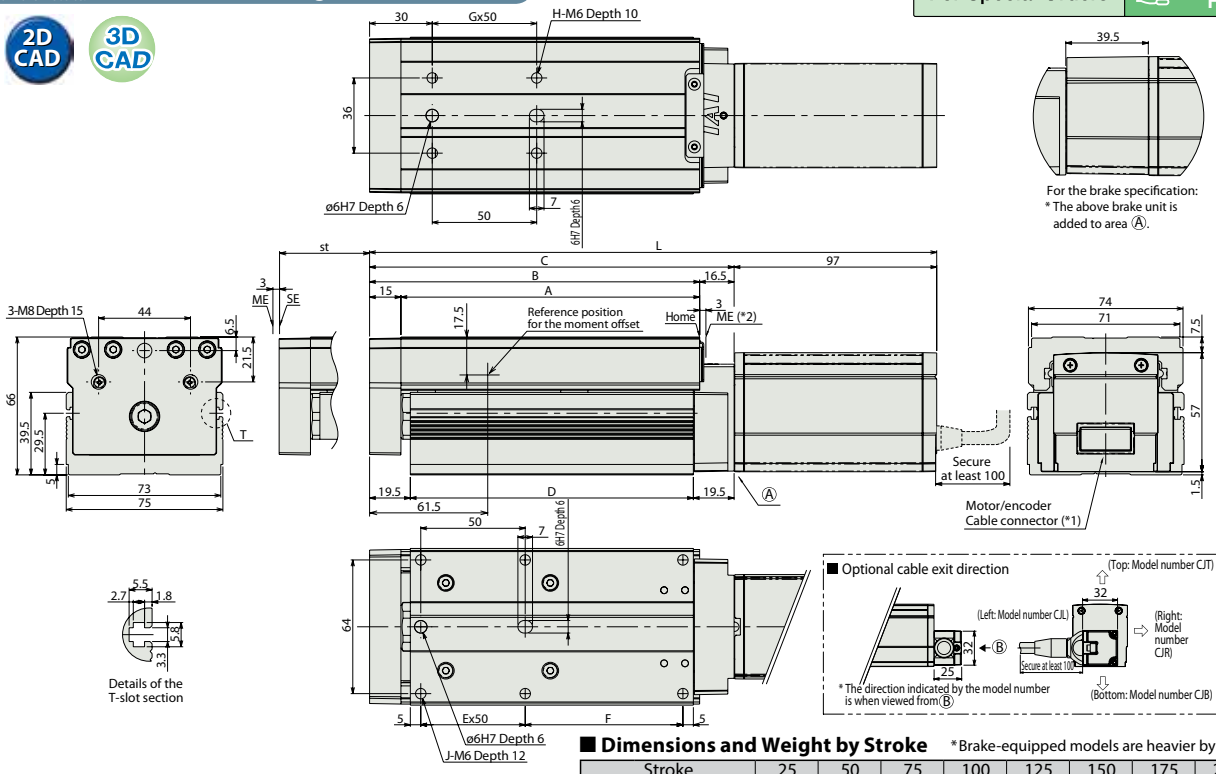


Dimensional Drawings

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

2D CAD 3D CAD

For Special Orders Appendix P.15



Dimensions and Weight by Stroke

*Brake-equipped models are heavier by 0.4kg.

Stroke		25	50	75	100	125	150	175	200
L	Without brake	246.5	271.5	296.5	321.5	346.5	371.5	396.5	421.5
	With brake	286	311	336	361	386	411	436	461
A		118	143	168	193	218	243	268	293
B		133	158	183	208	233	258	283	308
C		149.5	174.5	199.5	224.5	249.5	274.5	299.5	324.5
D		110.5	135.5	160.5	185.5	210.5	235.5	260.5	285.5
E		1	1	2	2	3	3	4	4
F		50.5	75.5	50.5	75.5	50.5	75.5	50.5	75.5
G		1	1	2	2	3	3	4	4
H		4	4	6	6	8	8	10	10
J		6	6	8	8	10	10	12	12
Weight (kg)		2.1	2.3	2.5	2.8	3	3.2	3.4	3.6

(*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.
ME : Mechanical end SE : Stroke end

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-42PI-Ⓘ-2-Ⅱ	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	Refer to P541	—	→ P537
		PSEP-C-42PI-Ⓘ-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-ⒾⅢ-~-Ⓘ-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-ⒾⅢ-~-Ⓥ-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type High-output specification		PCON-CA-42PI-Ⓘ-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-42PI-PL☐-2-0	Equipped with a high-output driver Pulse-train input type	(—)			—	
Field network type High-output specification		PCON-CA-42PI-Ⓥ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			—	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-Ⓘ-2-0	Pulse train input type with differential line driver support	(—)		Refer to P628	—	→ P623
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-Ⓘ-2-0	Pulse train input type with open collector support				—	
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated Serial Communication	64 points			—	
Program Control Type		PSEL-CS-1-42PI-Ⓘ-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). * Ⅲ indicates power supply voltage (1: 100V / 2: 100~240V).
* Ⅲ indicates number of axes (1 to 8). * Ⅳ indicates field network specification symbol. * ☐ indicates N (NPN specification) or P (PNP specification) symbol.