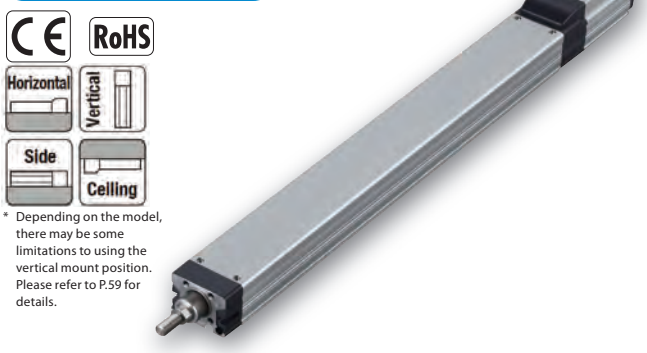
RCP5-RA7C ROBO Cylinder, Rod Type, Motor Unit Coupled, Actuator Width 73mm, 24V Pulse Motor

■Model Specification Items

RCP5	RA7C	WA	56P	☐	☐	P3	☐	☐
Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controllers	Cable length	Options
		WA: Battery-less absolute specification	56P: Pulse motor, size 56☐	24: 24mm 16: 16mm 8: 8mm 4: 4mm	70: 70mm ~ 520: 520mm (Every 50mm)	P3: PCON-CA MSEP MSEL	N: No cable P: 1m S: 3m M: 5m X☐☐: Specified length R☐☐: Robot cable	Please refer to the options table below.

*Controller is not included.

Radial Load Applicable



* Depending on the model, there may be some limitations to using the vertical mount position. Please refer to P.59 for details.

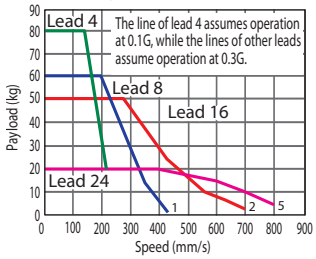
POINT Note on selection

(1) The actuator specification displays the payload's maximum value, but it will vary depending on the acceleration. Please refer to the "Selection Guidelines" (RCP5 Payload by Speed/Acceleration Table) on P. 61.
(2) Please refer to P. 59 for push-motion operation.
(3) The radial cylinder is equipped with a built-in guide. Please refer to the graphs shown in P. 65 and after for the allowable load mass.

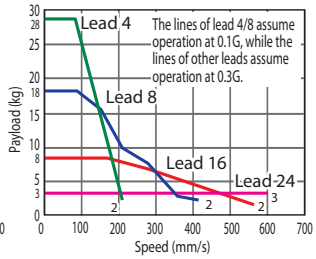
■Correlation Diagrams of Speed and Payload

(1) High-output enabled with PCON-CA, MSEP, MSEL connected

RCP5-RA7C, Horizontal mount

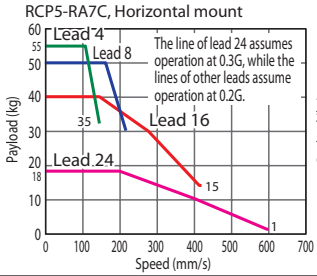


RCP5-RA7C, Vertical mount

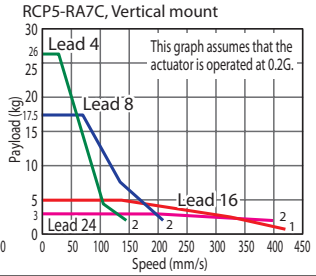


(2) High-output disabled with PCON-CA, MSEP connected

RCP5-RA7C, Horizontal mount



RCP5-RA7C, Vertical mount



Actuator Specifications

■Lead and Payload

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum push force (N)	Stroke (mm)
RCP5-RA7C-WA-56P-24-①-P3-②-③	24	High-output enabled	20	3	182	70~520 (Every 50mm)
		High-output disabled	18	3		
RCP5-RA7C-WA-56P-16-①-P3-②-③	16	High-output enabled	50	8	273	
		High-output disabled	40	5		
RCP5-RA7C-WA-56P-8-①-P3-②-③	8	High-output enabled	60	18	547	
		High-output disabled	50	17.5		
RCP5-RA7C-WA-56P-4-①-P3-②-③	4	High-output enabled	80	28	1,094	
		High-output disabled	55	26		

■Stroke and Maximum Speed

Values in brackets < > are for vertical use. (Unit: mm/s)

Lead (mm)	Connected controller	70~520 (Every 50mm)
24	High-output enabled	800 <600>
	High-output disabled	600 <400>
16	High-output enabled	700 <560>
	High-output disabled	420
8	High-output enabled	420
	High-output disabled	210
4	High-output enabled	210
	High-output disabled	140

Legend: ① Stroke ② Cable length ③ Options *Please refer to P. 59 for push-motion operation.

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
70	-	**320**	-
120	-	**370**	-
170	-	**420**	-
220	-	**470**	-
270	-	**520**	-

② Cable Length

Type	Cable code	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)	-

*Please refer to P. 89 for maintenance cables.

③ Options

Name	Option code	Reference page	Standard price
Brake	**B**	→P. 11	-
Cable exit direction (Top)	**CJT**	→P. 11	-
Cable exit direction (Right)	**CJR**	→P. 11	-
Cable exit direction (Left)	**CJL**	→P. 11	-
Cable exit direction (Bottom)	**CJB**	→P. 11	-
Flange	**FL**	→P. 12	-
Tip adapter (Flange)	**FFA**	→P. 12	-
Tip adapter (Internal thread)	**NFA**	→P. 13	-
Tip adapter (Keyway)	**KFA**	→P. 13	-
Non-motor end specification	**NM**	→P. 11	-

Actuator Specifications

Item	Description
Drive system	Ball screw Ø12mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost motion	0.1mm or less
Rod	Ø30mm Aluminum
Rod non-rotation precision (*2)	0 deg.
Allowable load and torque on rod tip	Refer to table in the page on the right, refer to P. 65
Rod tip overhang distance	100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

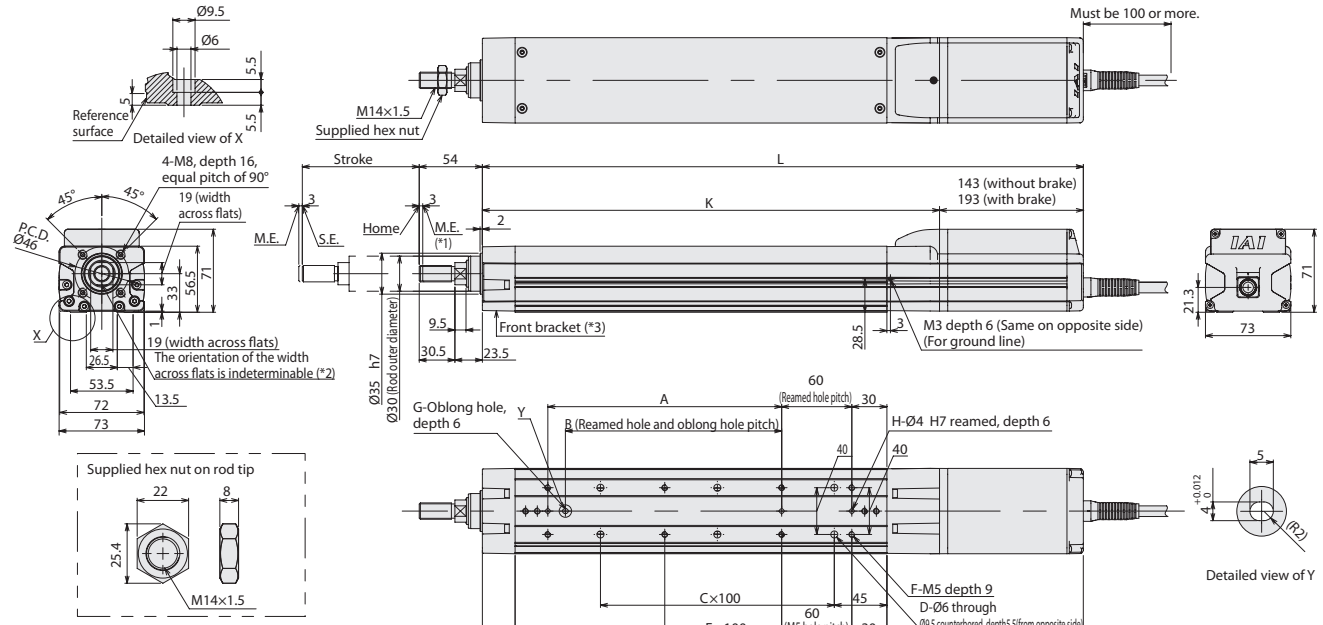
(*1) The values in brackets [ ] are for Lead 24.
(*2) Rod's angular displacement in rotational direction with no applied load is shown.

Dimensions

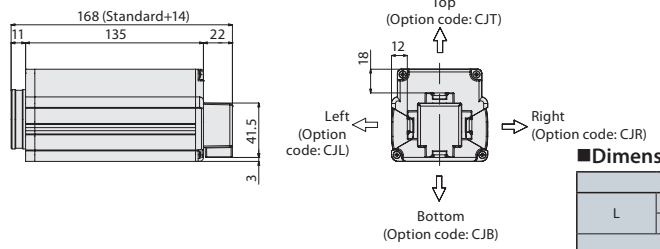
CAD drawings can be downloaded from our website. www.intelligentactuator.com

2D CAD 3D CAD

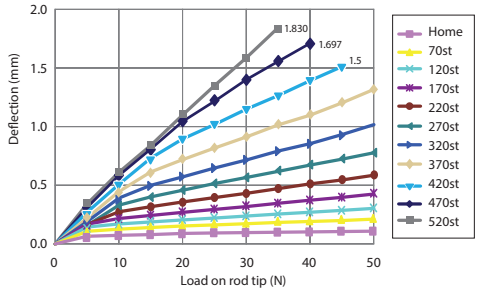
*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the ME.
*2 The direction of width across flats varies depending on the product.
*3 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
ME: Mechanical end
SE: Stroke end



■Cable Exit Direction (Option)



■ Rod Deflection of RCP5-RA7C (Reference Values)



■Dimensions and Mass by Stroke

Stroke		70	120	170	220	270	320	370	420	470	520
L	Without brake	384	434	484	534	584	634	684	734	784	834
	With brake	434	484	534	584	634	684	734	784	834	884
A		0	100	100	200	200	300	300	400	400	500
B		0	85	85	185	185	285	285	385	385	485
C		1	1	2	2	3	3	4	4	5	5
D		4	4	6	6	8	8	10	10	12	12
E		0	0	0	1	1	2	2	3	3	4
F		4	6	6	8	8	10	10	12	12	14
G		0	1	1	1	1	1	1	1	1	1
H		2	3	3	3	3	3	3	3	3	3
J		168	218	268	318	368	418	468	518	568	618
K		241	291	341	391	441	491	541	591	641	691
Allowable static load on rod tip (N)		119.2	97.7	82.8	71.6	63.0	56.2	50.6	46.0	42.2	38.8
Allowable dynamic load on rod tip (N)	Load offset 0mm	44.3	35.7	29.6	25.2	21.7	19.0	16.8	15.0	13.6	12.2
	Load offset 100mm	33.9	29.7	25.7	22.4	19.7	17.4	15.5	14.0	12.8	11.5
Allowable static torque on rod tip (N•m)		12.1	10.0	8.5	7.4	6.5	5.9	5.3	4.9	4.5	4.1
Allowable dynamic torque on rod tip (N•m)		3.4	3.0	2.6	2.2	2.0	1.7	1.6	1.4	1.3	1.2
Mass (kg)	Without brake	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.6	5.9
	With brake	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.1	6.4

Applicable Controllers

The RCP5 series actuators can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Model number	Max. number of controlled axes	Maximum number of positioning points	Input power	Standard price	Reference page
Positioner type (High-output specification)		PCON-CA-56PWAI-Ⓘ-2-0	1	512 points	DC24V	-	→P. 69
Pulse train type (High-output specification)		PCON-CA-56PWAI-PLⓋ-2-0				-	
Network type (High-output specification)		PCON-CA-56PWAI-ⒾⅡ-0-0		768 points		-	
Solenoid valve multi-axis type (PIO specification)		MSEP-Ⓥ-Ⅱ-~Ⓘ-2-0	C: 8 (4 when high-output enabled)	3 points		-	→P. 77
Solenoid valve multi-axis type (Network specification)		MSEP-Ⓥ-Ⅱ-~Ⅲ-0-0	LC: 6 (3 when high-output enabled)	256 points			
Program control multi-axis type		MSEL-PC-1-56PWAI-Ⓘ-2-4	4	30,000 points	Single-phase AC 100V~230V	-	→P. 87
Program control multi-axis type (w/network board)		MSEL-PC-1-56PWAI-Ⅲ-0-4					
Program control multi-axis type (Safety category compliant spec.)		MSEL-PG-1-56PWAI-Ⓘ-2-4					
Program control multi-axis type (Safety category compliant spec. w/network board)		MSEL-PG-1-56PWAI-Ⅲ-0-4					

*Above MSEL models are for single-axis specification
*Ⓘ I/O type (NP/PN)
*Ⅱ Number of axes
*Ⅲ Field network specification code
*Ⓥ C or LC
*Ⓥ N (NPN specification) or P (PNP specification) code
*The high output enabled operation is only available when the "High-output setting specs" is selected in the MSEP-C/LC.