

## RCP6(S)-RRA6C

Battery-less  
AbsoluteMotor  
Unit TypeCoupled  
MotorBody Width  
58  
mm24V  
Stepper  
Motor

■ Model Specification Items	<div></div>	<b>RRA6C</b>	<b>WA</b>	<b>42P</b>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controller/I/O Type	Cable Length	Options
	RCP6: Separate Controller RCP6S: Built-in Controller		WA: Battery-less Absolute	42P: Stepper Motor 42□ Size	20: 20mm 12: 12mm 6: 6mm 3: 3mm	65: 65mm 415: 415mm (50mm increments)	[RCP6] P3: PCON MCON MSEL [RCP6S] SE: SIO Type	N : None P : 1m S : 3m M : 5m X□□ : Specified Length R□□ : Robot Cable	Please refer to the options table below.

\* RCP6 does not include a controller. RCP6S includes a built-in controller.

\* Please refer to P.11 for more information about the model specification items.

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## Radial Load OK



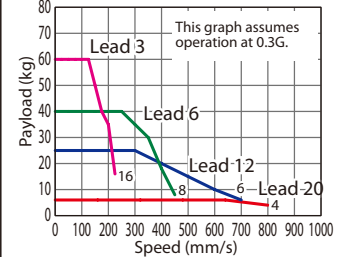
\*Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.



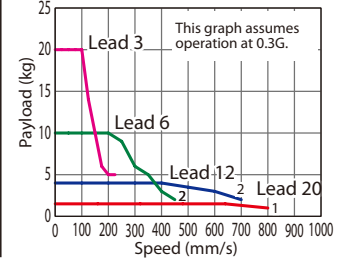
- (1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
- (2) The actuator specification displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to the "Selection Guidelines" (RCP6 Tables of Payload by Speed/Acceleration) on P.115 for more details.
- (3) The radial cylinder is equipped with a built-in guide. Please refer to the graphs shown in P.127 and after for the allowable load mass.
- (4) When performing push-motion operation, please confirm the push force of each model by checking the "Correlation diagram of push force and current limit" on P.113.
- (5) Depending on the ambient operational temperature, duty control is necessary for the RCP6S (built-in controller type) with lead 3/6. Please refer to P.130 for more information.

## Correlation Diagrams of Speed and Payload

High-output enabled with PCON/MCON/MSEL connected.  
RCP6(S)-RRA6C Horizontal mount



RCP6(S)-RRA6C Vertical mount



## Actuator Specifications

## Lead and Payload

(Note 1) The payload assumes that there is an external guide.

Model Number	Lead (mm)	Connected Controller	Max. Payload		Stroke (mm)
			Horizontal (kg) (Note 1)	Vertical (kg)	
RCP6(S)-RRA6C-WA-42P-20-①-②-③-④	20	High-output Enabled	6	1.5	65~415 (The increment of stroke is 50mm)
RCP6(S)-RRA6C-WA-42P-12-①-②-③-④	12	High-output Enabled	25	4	
RCP6(S)-RRA6C-WA-42P-6-①-②-③-④	6	High-output Enabled	40	10	
RCP6(S)-RRA6C-WA-42P-3-①-②-③-④	3	High-output Enabled	60	20	

Legend: ① Stroke ② Applicable controller/I/O type ③ Cable length ④ Options

## Stroke and Max. Speed

(Unit: mm/s)

Lead (mm)	Connected Controller	65~365 (Every 50mm)	415 (mm)
20	High-output Enabled	800	
12	High-output Enabled	700	
6	High-output Enabled	450	
3	High-output Enabled	225	220

## ① Stroke

Stroke (mm)	RCP6	RCP6S	Stroke (mm)	RCP6	RCP6S
65	○	○	265	○	○
115	○	○	315	○	○
165	○	○	365	○	○
215	○	○	415	○	○

## ④ Options

Name	Option Code	Reference Page
Brake	B	See P.105
Cable exit direction (Top)	CJT	See P.105
Cable exit direction (Right)	CJR	See P.105
Cable exit direction (Left)	CJL	See P.105
Cable exit direction (Bottom)	CJB	See P.105
Flange	FL	See P.106
Tip adapter (Flange)	FFA	See P.105
Tip adapter (Internal thread)	NFA	See P.109
Tip adapter (Keyway)	KFA	See P.108
Non-motor end specification	NM	See P.110

# When selecting multiple options, please list them in alphabetical order. (e.g. B-CJB-NM)

## ③ Cable Length

Cable Type	Cable Code	RCP6	RCP6S
Standard	P (1m)	○	○
	S (3m)	○	○
	M (5m)	○	○
Specified Length	X06 (6m) ~X10 (10m)	○	○
	X11 (11m) ~X15 (15m)	○	○
	X16 (16m) ~X20 (20m)	○	○
	R01 (1m) ~R03 (3m)	○	○
Robot Cable	R04 (4m) ~R05 (5m)	○	○
	R06 (6m) ~R10 (10m)	○	○
	R11 (11m) ~R15 (15m)	○	○
	R16 (16m) ~R20 (20m)	○	○
		○	○

\* Please refer to P.144 for more information regarding the maintenance cables.

## Actuator Specifications

Item	Description
Drive system	Ball screw φ10mm, rolled C10
Positioning repeatability	±0.01mm
Lost motion	0.1mm or less
Rod	φ25mm Aluminum
Rod non-rotation precision*	0 deg.
Allowable load and torque on rod tip	See P. 127
Rod tip overhang distance	100mm
Ambient operating temp. & humidity	0~40°C, 85% RH or less (Non-condensing)

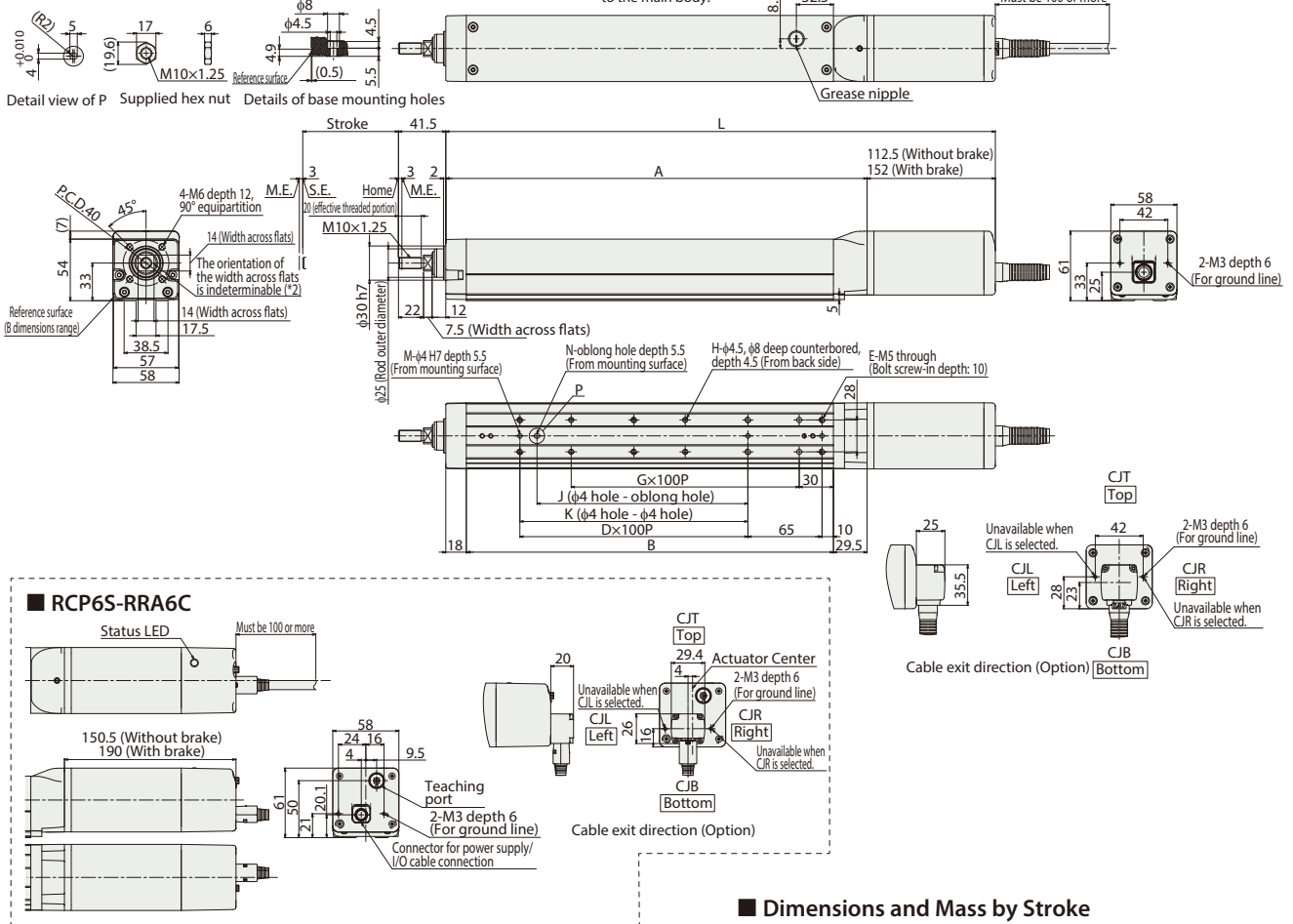
\* Rod's angular displacement in rotational direction with no load applied to the rod.

## Dimensions

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



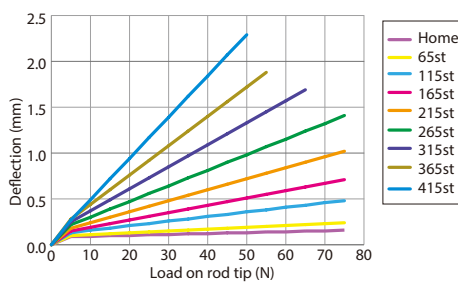
- \*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E. M.E: Mechanical end S.E: Stroke end  
\*2 The direction of width across flats varies depending on the product.  
\*3 When fixing the actuator using a front bracket or flange, please make sure that there is no external force applied to the main body.



## Dimensions and Mass by Stroke

		Stroke							
L	RCP6	65	115	165	215	265	315	365	415
		w/o brake	w/ brake	w/o brake	w/ brake	w/o brake	w/ brake	w/o brake	w/ brake
	RCP6S	332	382	432	482	532	582	632	682
		371.5	421.5	471.5	521.5	571.5	621.5	671.5	721.5
	RCP6S	370	420	470	520	570	620	670	720
		409.5	459.5	509.5	559.5	609.5	659.5	709.5	759.5
A		219.5	269.5	319.5	369.5	419.5	469.5	519.5	569.5
B		172	222	272	322	372	422	472	522
D		0	1	1	2	2	3	3	4
E		4	6	6	8	8	10	10	12
G		1	1	2	2	3	3	4	4
H		4	4	6	6	8	8	10	10
J		0	85	85	185	185	285	285	385
K		0	100	100	200	200	300	300	400
M		2	3	3	3	3	3	3	3
N		0	1	1	1	1	1	1	1
Allowable static load on rod tip (N)		144	117	99	85.4	75	66.7	59.9	54.3
Allowable dynamic Load offset 0mm		5.9	4.7	3.9	3.3	2.8	2.5	2.2	2.0
load on rod tip (kg)		4.0	3.5	3.0	2.7	2.4	2.1	1.9	1.7
Allowable static torque on rod tip (N·m)		14.5	11.8	10.0	8.7	7.6	6.8	6.2	5.6
Allowable dynamic torque on rod tip (N·m)		3.8	3.3	2.9	2.6	2.3	2.0	1.8	1.6
Mass (kg)	RCP6	w/o brake	2.1	2.3	2.6	2.8	3.0	3.2	3.5
		w/ brake	2.4	2.6	2.8	3.0	3.3	3.5	3.7
	RCP6S	w/o brake	2.3	2.5	2.7	2.9	3.2	3.4	3.6
		w/ brake	2.5	2.7	3.0	3.2	3.4	3.6	4.1

## Rod Deflection of RCP6(S)-RRA6C (Reference Values)



## ② Applicable Controllers

The RCP6 series actuators can be operated by the controllers indicated below. Please select the type depending on your intended use. \* Please refer to P.147 for more information about the built-in controller of RCP6S series.

Name	External view	Max. number of controlled axes	Input power	Control method				Maximum number of positioning points	Reference page
				Positioner	Pulse train	Program	Network *Option		
PCON-CB/CGB		1	DC24V	*Option	*Option	-	DeviceNet CC-Link EtherCAT EtherNet/IP CompoNet	512 (768 for network spec.)	Please see P.131
MCON-C/CG		4		This model is network-compatible only.				256	Please see the MCON catalog.
MSEL-PC/PG		4	Single-phase 100~230VAC	-	-	●	Note: The type of compatible networks will vary depending on the controller. Please refer to reference page for more information.	30,000	Please see the MSEL-PC/PG catalog.

\*Please select "high-output specification" as an option for the MCON. With the MCON, operation is possible only when the high-output specification is selected.