

# RCP6(S)-WRA12R

Battery-less Absolute

Motor Unit Type

Side-mounted Motor

Body Width 120\* mm

24v Stepper Motor

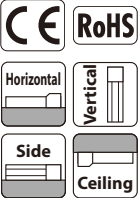
### Model Specification Items

Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controller/I/O Type	Cable Length	Options
RCP6: Separate Controller RCP6S: Built-in Controller	WRA12R	WA	42P	20: 20mm 12: 12mm 6: 6mm 3: 3mm	50: 50mm 12: 12mm 6: 6mm 3: 3mm	[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. *Please make sure to specify either ML or MR when ordering the side-mounted motor type.

\* Body width does not include the width of the side-mounted motor.

\* RCP6 does not include a controller. RCP6S includes a built-in controller.  
\* Please refer to P.12 for more information about the model specification items.

### 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.



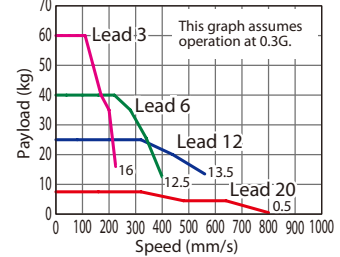
The figure above is the motor side-mounted to the left (ML).



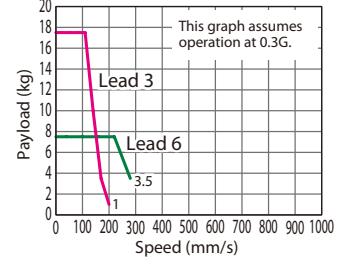
- (1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
- (2) The actuator specification displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to the "Selection Guidelines" (RCP6 Tables of Payload by Speed/Acceleration) 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)-WRA12R Horizontal mount



RCP6(S)-WRA12R 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)	Vertical (kg)	
RCP6(S)-WRA12R-WA-42P-20-①-②-③-④	20	High-output Enabled	7.5	-	50~500 (The increment of stroke is 50mm)
RCP6(S)-WRA12R-WA-42P-12-①-②-③-④	12	High-output Enabled	30	-	
RCP6(S)-WRA12R-WA-42P-6-①-②-③-④	6	High-output Enabled	55	7.5	
RCP6(S)-WRA12R-WA-42P-3-①-②-③-④	3	High-output Enabled	70	17.5	

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	50~400 (Every 50mm)	450 (mm)	500 (mm)
20	High-output Enabled		800	
12	High-output Enabled		560	
6	High-output Enabled	400 <280>		375 <280>
3	High-output Enabled	225 <200>	220 <200>	185

Values in brackets < > are for vertical use.

#### ① Stroke

Stroke (mm)	RCP6	RCP6S	Stroke (mm)	RCP6	RCP6S
50	○	○	300	○	○
100	○	○	350	○	○
150	○	○	400	○	○
200	○	○	450	○	○
250	○	○	500	○	○

#### ④ Options

Name	Option Code	Reference Page
Brake	B	See P.105
Cable exit direction (Outside)	CJO	See P.105
Flange	FL	See P.106
Motor side-mounted to the left	ML	See P.109
Motor side-mounted to the right	MR	See P.109
Non-motor end specification	NM	See P.110
T-slot nut bar (Left)	NTBL	See P.110
T-slot nut bar (Right)	NTBR	See P.110

\* When selecting T-slot nut bar option with a side-mounted motor model, please choose NTBR when the motor is side-mounted to the left, and NTBL when the motor is side-mounted to the right.

# 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

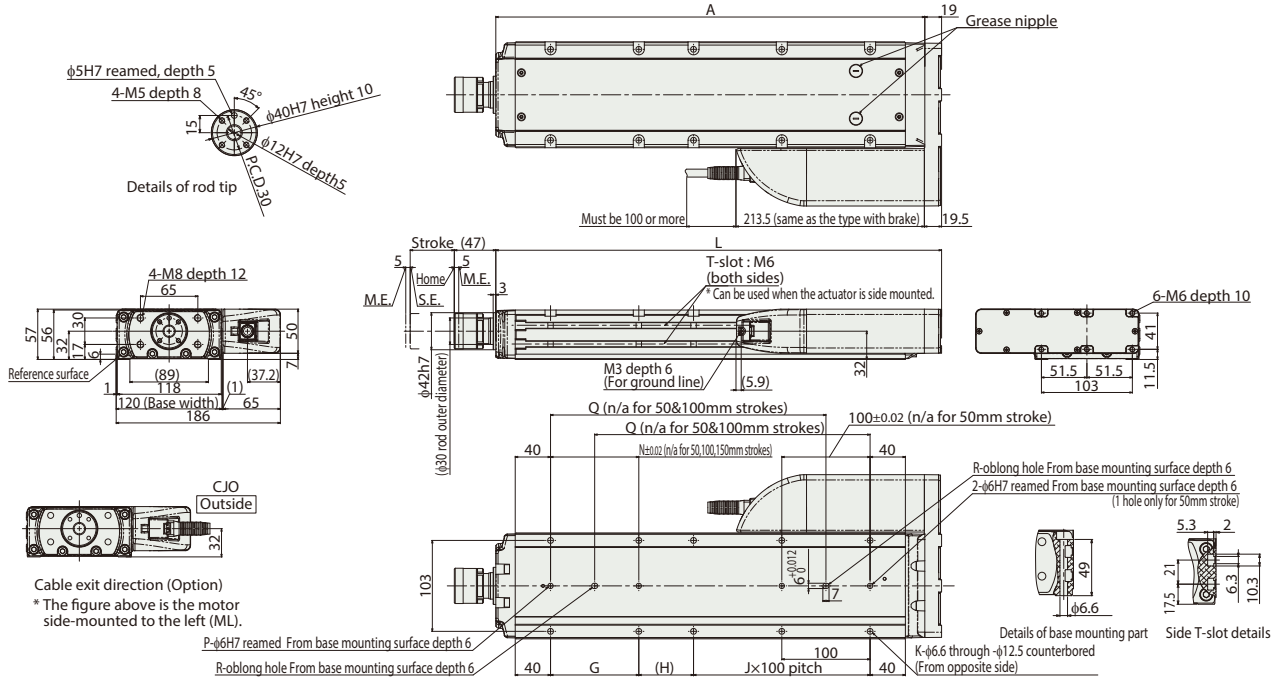
Item	Description
Drive system	Ball screw φ10mm, rolled C10
Positioning repeatability	±0.01mm
Lost motion	0.1mm or less
Rod	φ30mm Stainless steel
Rod non-rotation precision	0 deg.
Allowable load and torque on rod tip	See P. 127
Rod tip overhang distance	100mm
Ambient operating temp. & humidity	0~40°C, 85% RH or less (Non-condensing)

Dimensions

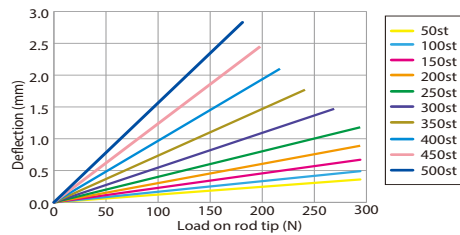
CAD drawings can be downloaded from our website.  
www.intelligentactuator.com



\*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

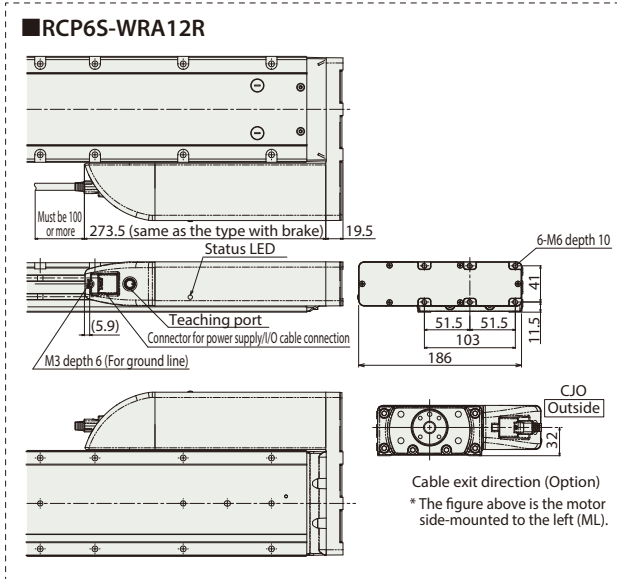


■ Rod Deflection of RCP6(S)-WRA12R (Reference Values)



■ Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	
L	255	305	355	405	455	505	555	605	655	705	
A	236	286	336	386	436	486	536	586	636	686	
G	-	-	-	100	100	100	100	100	100	100	
H	112	62	112	62	112	62	112	62	112	62	
J	0	1	1	1	1	2	2	3	3	4	
K	4	6	6	8	8	10	10	12	12	14	
N	-	-	-	100	100	100	100	100	100	100	
P	1	1	1	2	2	2	2	2	2	2	
Q	-	-	162	212	262	312	362	412	462	512	
R	0	0	1	1	1	1	1	1	1	1	
Allowable static load on rod tip (N)	294	294	294	294	294	269	241	218	198	181	
Allowable static torque on rod tip (N·m)	20	20	20	20	20	20	20	20	20	20	
3,000km	Allowable dynamic load on rod tip (N)	147	147	137	121	107	96	87	79	72	
	Load offset 100mm	100	100	100	100	99	90	82	75	68	
5,000km	Allowable dynamic load on rod tip (N)	147	133	115	101	90	80	72	65	59	
	Load offset 100mm	100	100	100	92	83	75	68	62	56	
Mass (kg)	RCP6	w/o brake	5.1	5.7	6.3	7.0	7.6	8.2	8.9	9.5	10.2
		w/ brake	5.1	5.8	6.4	7.0	7.7	8.3	9.0	9.6	10.2
	RCP6S	w/o brake	5.2	5.8	6.5	7.1	7.7	8.4	9.0	9.6	10.3
		w/ brake	5.3	5.9	6.5	7.2	7.8	8.4	9.1	9.7	10.4



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.