

# RCS3-RA4R

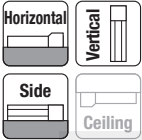
RoboCylinder, Rod Type with Load Cell, Actuator Width 40mm  
200V Servo Motor, Side-mounted Motor Specification

Model	RCS3	RA4R		30			T2		
Specification	Series	Type	Encoder type	Motor Type	Lead	Stroke	Applicable Controller	Cable length	Options
Items			I: Incremental specification A: Absolute specification	30: Servo motor, 30 W	2.5: Lead 2.5mm	110: 110mm 410: 410mm (The increment of stroke is 50mm)	T2: SCON-CB/CGB (Servo press specification)	N: No cable P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Please refer to the options table below. * Please make sure to select an option code for both the motor side-mounted direction and the cable exit direction.

\*Controller is not included.



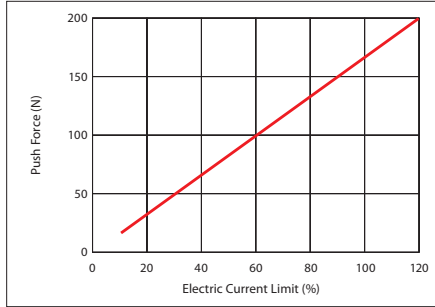
\* CE conformity has to be selected as option.



\* Depending on the model, there may be some limitations to using the vertical mount position.



## Correlation Diagram of Push Force and Current Limit



### Caution:

- The correlation between push force and current limit value are strictly for reference purposes. Actual numbers may vary slightly.
- The current limit value should be 12% or more because the push force would be unstable when the current limit value is lower than 12%.



- There is no limit in time period of a continuous push-motion for RA4R. It is available to have continuous push-motion with a current limit value of 100%.
- Customer's tooling is to be mounted on the load cell itself. In case any radial or moment load is applied to the load cell, please consider adding the external guides, etc. to offset those side loads.
- When using front flange and bracket, please install a support block for the horizontal installation of an actuator with 150mm-stroke or longer. However, adding the support block even for less than 150mm-stroke is recommended since vibration might occur depending on the operational and installation condition and damage the actuator.
- Force control is only for pushing motion, not valid for pulling motion.

## Actuator Specifications

### Lead and Payload

Model number	Motor (W)	Lead (mm)	Max. speed (mm/s)	Max. acceleration (G)	Max. payload		Rated thrust (N)	Max. push force (N) *
					Horizontal (kg)	Vertical (kg)		
RCS3-RA4R-①-30-2.5-②-T2-③-④	30	2.5	125	0.5	3	3	126	200

Legend: ① Encoder type ② Stroke ③ Cable length ④ Option

### Stroke and Maximum Speed

Lead (mm)	Stroke (mm)	110~410
	110~410	
2.5	125	125

\* With 0.01-10mm/s

(Unit: mm/s)

## Cable Length

Type	Cable code	
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)	

\* Refer to P. 37 for maintenance cables.

## Options

Name	Option code	Reference page
Front flange	FL	→P25
Foot bracket (*1)	FT	→P25
Brake	B	Refer to the RoboCylinder General Catalog.
Cable exit direction (Outside)	CJO	
Motor side-mounted to the left	ML	
Motor side-mounted to the right	MR	
Equipped with load cell (Standard equipment) (*2)	LCT	-
Compliance with CE conformity (Standard option)	CE	-

(\*1) Refer to P. 26 for the number of brackets included.

(\*2) Please make sure to enter "LCT" in the box of Model Specification Items to select the actuator with load cell.

## Actuator Specifications

Item	Description
Drive system	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.01mm
Rod non-rotation precision	±0 deg.
Lost motion	0.1mm or less
Load cell rated capacity	200N
Load cell system accuracy	±1% R.C (*2)
Loading repeatability (*1)	±0.5% F.S (*3)
Load cell service life	2 million times
Ambient operating temperature and humidity	0°C~40°C

(\*1) Ratio (in percentage) of the load variations caused by the repeated operations to the load cell rated capacity. The ratio is calculated based on actual data at IAI.

(\*2) R.C: Rated Capacity

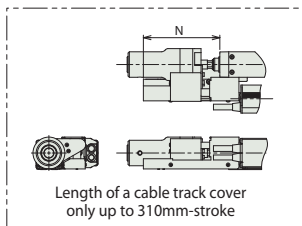
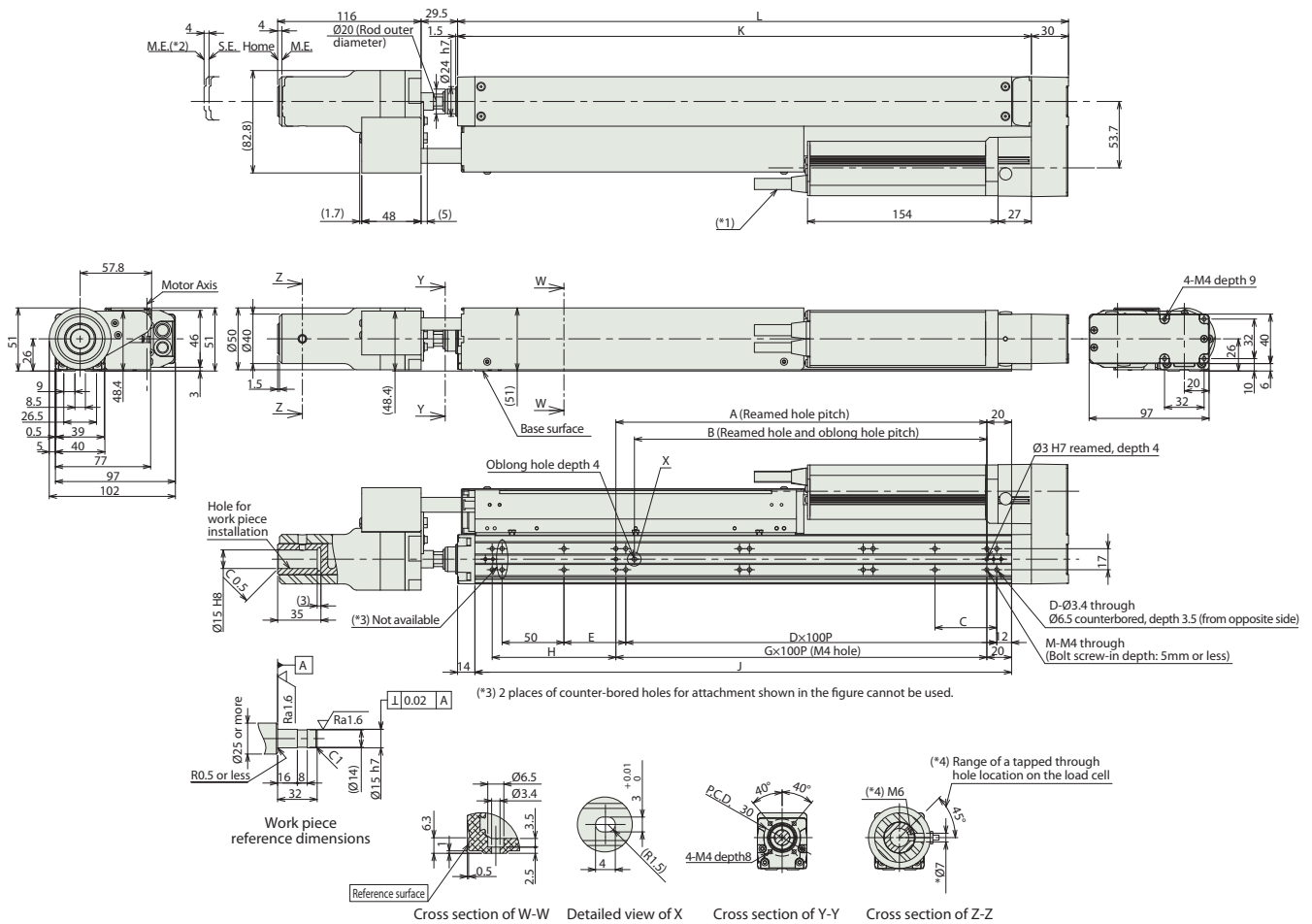
(\*3) F.S: Full Scale

Dimensions

CAD drawings can be downloaded from our website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



- \*1 Connects the motor-encoder cable. Refer to P.37 for the details of the cable.
- \*2 While 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.
- ME : Mechanical end
- SE : Stroke end



■ Dimensions and Mass by Stroke

Stroke	110	160	210	260	310	360	410	
L	244	294	344	394	444	494	544	
A	100	100	200	200	300	300	400	
B	85	85	185	185	285	285	385	
C	50	50	50	50	50	50	50	
D	0	1	1	2	2	3	3	
E	100	50	100	50	100	50	100	
F	8	10	10	12	12	14	14	
G	1	1	2	2	3	3	4	
H	50	100	50	100	50	100	50	
J	184	234	284	334	384	434	484	
K	214	264	314	364	414	464	514	
M	6	6	8	8	10	10	12	
N	120	100	75	50	25	—	—	
Mass (kg)	Without brake	3.1	3.2	3.4	3.6	3.8	3.9	4.1
	With brake	3.4	3.5	3.7	3.9	4.1	4.2	4.4

Compatible Controllers

RCS3-RA4R actuators can be operated with the following controllers. Select an appropriate controller type according to your application.

Name	External view	Model number (Note 1)	Max. number of controlled axes	Encoder type	Max. number of positioning points	Power-supply capacity	Description
Single axis controller (Standard type)		SCON-CB-30D①F-NP-2-2	1 axis	Absolute Incremental	512 points	Single-phase 100/200 VAC	Position standard type controller
Single axis controller (Global type)		SCON-CGB-30D①F-NP-2-2					Position global type controller (Safety category compliant spec)

(Note 1) The model numbers are based on a 1-axis specification without network support. ① represents the encoder type (absolute/incremental). For details, refer to page 28.