RCS3-RA8R

RoboCylinder, Rod Type with Load Cell, Actuator Width 88mm
200V Servo Motor, Side-mounted Motor Specification

■ Model Specification Items

RCS3 — RA8R — □ — 200 — □ — □ — □ — T2 — □ — □

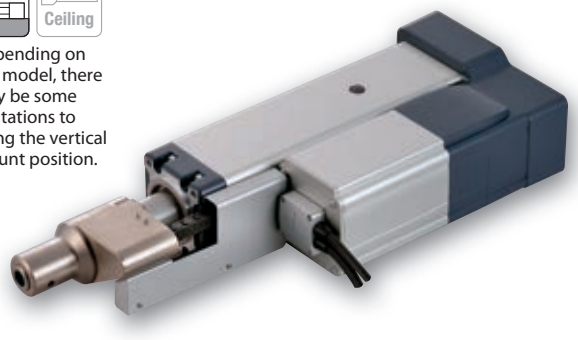
Series	Type	Encoder type	Motor Type	Lead	Stroke	Applicable Controller	Cable length	Option
RCS3	RA8R	I: Incremental specification A: Absolute specification	200: Servo motor, 200 W	2.5: Lead 2.5mm	100: 100mm ~ 500: 500mm (The increment of stroke is 50mm)	T2: SCON-CB/CGB (Servo press specification)	N : 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.

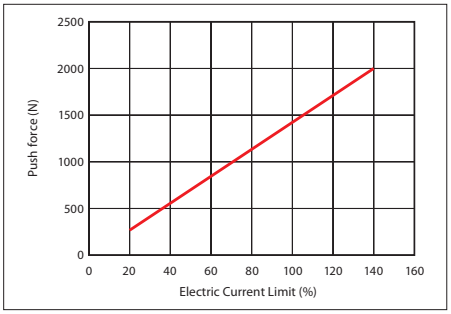
CE RoHS

Horizontal Vertical Side Ceiling

* 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 14% or more because the push force would be unstable when the current limit value is lower than 14%.

POINT Note on selection

(1) For push mode operation, please see P. 21 to check the allowable time period of a continuous push-motion with a different thrust force. Also, please check that the allowable continuous operational thrust force (please see P. 23) for the actual push cycle is less than the allowable continuous operational thrust force. (Even if there is no push motion)

(2) 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.

(3) 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.

(4) 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 Horizontal (kg)	Max. payload Vertical (kg)	Rated thrust (N)	Max. push force (N) *
RCS3-RA8R-①-200-2.5-②-T2-③-④	200	2.5	125	0.2	10	10	1367	2000

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

* With 0.01-10mm/s

■ Stroke and Maximum Speed

Lead (mm) \ Stroke (mm)	100~500
2.5	125

(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 (Top)	**CJT**	
Cable exit direction (Bottom) (*2)	**CJB**	
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) (*3)	**LCT**	-

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

(*2) When you select „CJB" for an actuator whose stroke is 100mm, the foot bracket cannot be chosen.

(*3) 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 Ø16mm, rolled C10
Positioning repeatability	±0.01mm
Rod non-rotation precision	±0 deg.
Lost motion	0.1mm or less
Load cell rated capacity	2000N
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

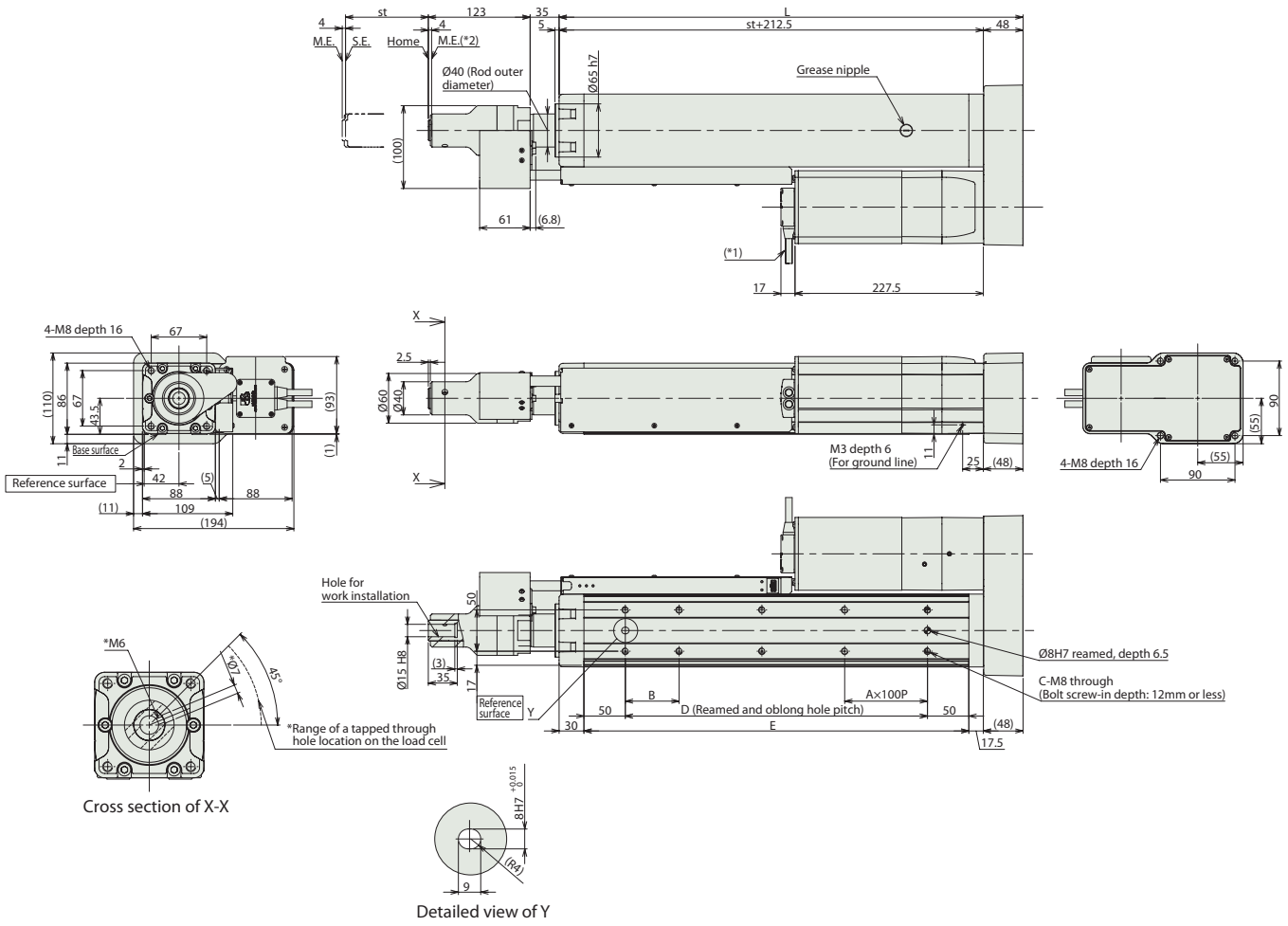
(*3) F.S: Full Scale

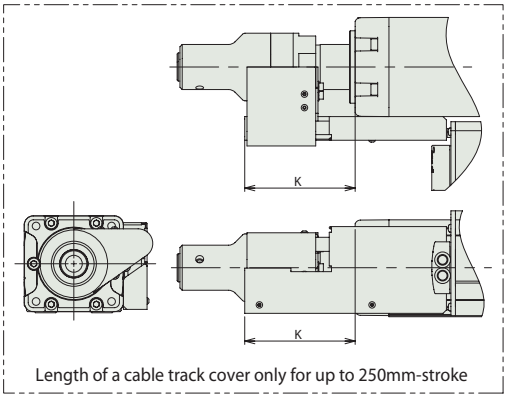
Dimensions

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

2/3D CAD

*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





Length of a cable track cover only for up to 250mm-stroke

■ Dimensions and Mass by Stroke

Stroke		100	150	200	250	300	350	400	450	500
L		360.5	410.5	460.5	510.5	560.5	610.5	660.5	710.5	760.5
A		1	1	2	2	3	3	4	4	5
B		65	115	65	115	65	115	65	115	65
C		6	6	8	8	10	10	12	12	14
D		165	215	265	315	365	415	465	515	565
E		265	315	365	415	465	515	565	615	665
K		98	63	42	21	-	-	-	-	-
Mass (kg)	Without brake	10.2	10.8	11.3	11.9	12.5	13	13.6	14.1	14.7
	With brake	10.7	11.3	11.8	12.4	13.0	13.5	14.1	14.6	15.2

Compatible Controllers

RCS3-RA8R 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-200Ⓘ-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-200Ⓘ-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. Ⓘ represents the encoder type (absolute/incremental). For details, refer to page 28.