RCS3-RA20R

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

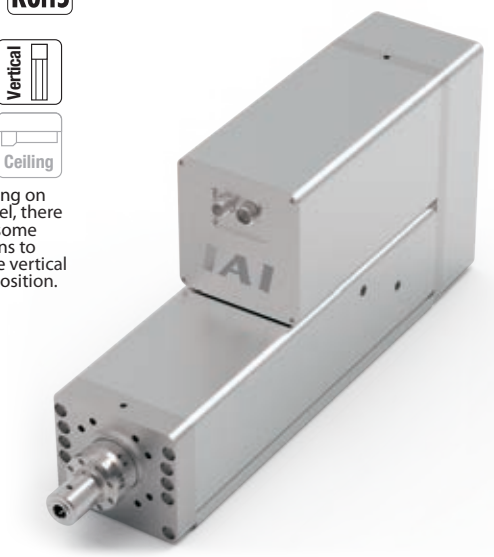
■ Models

Specification Items	RCS3	RA20R	☐	3000	☐	☐	☐	T3	☐	☐
	Series	Type	Encoder type	Motor Type	Lead	Stroke		Applicable Controller	Cable length	Option
			I: Incremental specification A: Absolute specification	3000: Servo motor, 3000 W	4: Lead 4mm	100: 100mm ~ 500: 500mm (The increment of stroke is 100mm)		T3: SCON-CGB (Servo press specification)	N: No cable P: 1m S: 3m M: 5m X☐☐: Specified length	Please refer to the options table below. * Please make sure to select an option code for the motor side-mounted direction (MT).

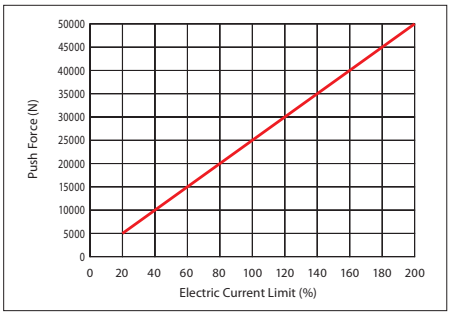
*__Controller__ is not included.

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 20% or more because the push force would be unstable when the current limit value is lower than 20%.

POINT Note on selection

(1) For push mode operation, please see P. 22 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) Please install a support block for the horizontal installation. It 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-RA20R-① -3000-4- ②-T3-③-④	3000	4	220	0.1	15	15	25902	50000

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
4	220

(Unit: mm/s)

Cable Length

Type	Cable code	
Standard type (Robot cable)	**P** (1m)	
	S (3m)	
	M (5m)	
Special length	**X06** (6m) ~**X10** (10m)	
	X11 (11m)~**X15** (15m)	
	X16 (16m)~**X20** (20m)	

* Refer to P. 37 for maintenance cables.
* The standard cable is the robot cable.

Options

Name	Option code	Reference page
Brake	**B**	Refer to the RoboCylinder General Catalog.
Cable exit direction (Top)	**CJT**	
Cable exit direction (Right side)	**CJR**	
Cable exit direction (Left side)	**CJL**	
Motor side-mounted to the top	**MT**	
Equipped with load cell (Standard equipment) (*1)	**LCT**	-

(*1) 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 Ø40mm, rolled C10
Positioning repeatability	±0.01mm
Rod non-rotation precision	±0 deg.
Lost motion	0.2mm or less
Load cell rated capacity	50000N
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

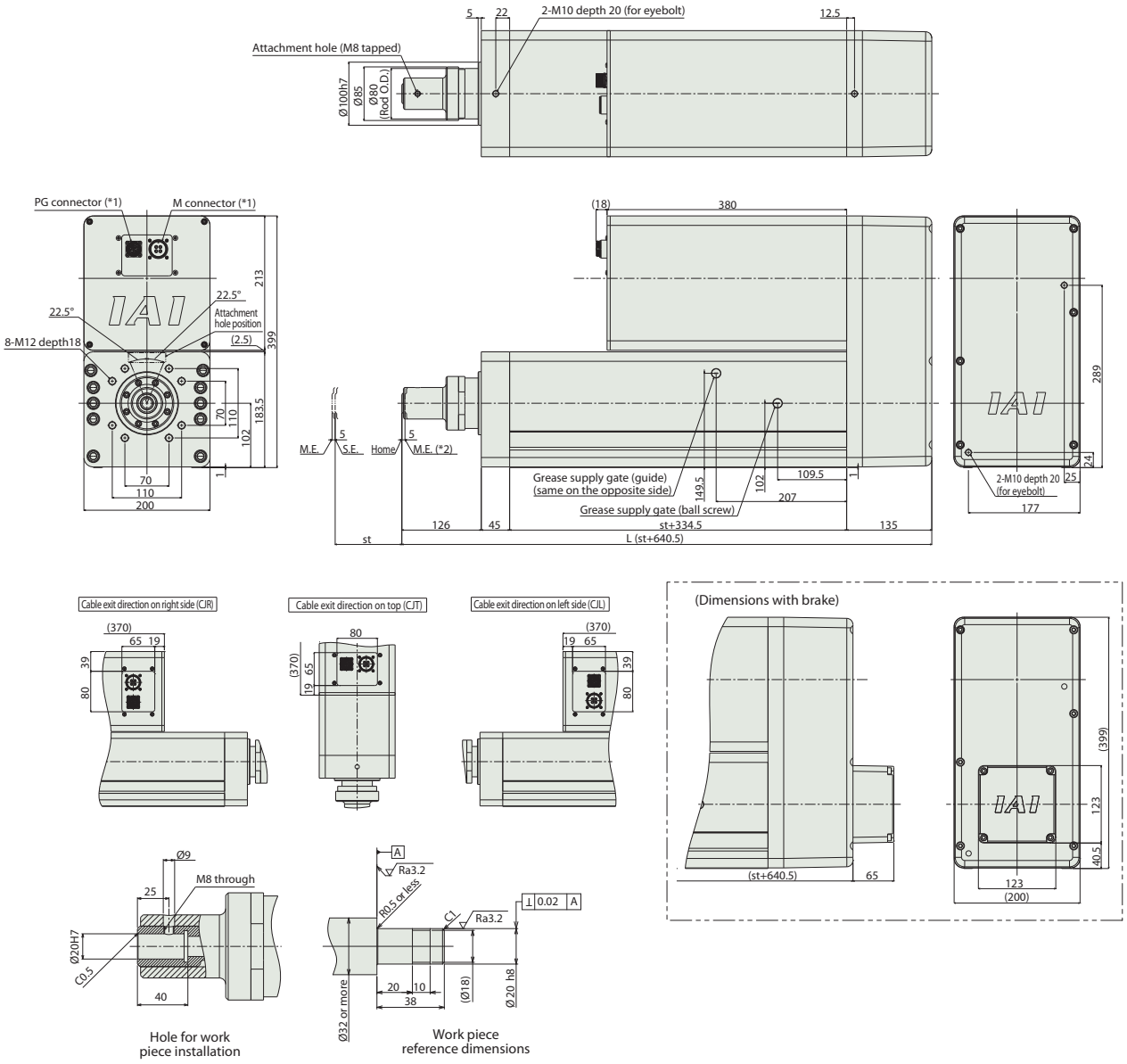
(*3) F.S: Full Scale

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



■ Dimensions and Mass by Stroke

Stroke		100	200	300	400	500
L		740.5	840.5	940.5	1040.5	1140.5
Mass (kg)	Without brake	93.3	99.6	105.8	112.1	118.4
	With brake	96.3	102.6	108.8	115.1	121.4

Compatible Controllers

RCS3-RA20R actuators can be operated with the following controller. 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 (Global type)		SCON-CGB-3000Ⓘ-NP-2-2	1 axis	Absolute Incremental	512 points	Three-phase 200 VAC	Position global type controller (Safety category compliant specification)

(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.