RCA-RA3D

Robo Cylinder, Rod Type, ø32mm Diameter, 24V Servo Motor, Built-In (Direct-Coupled) Motor

Model Specification Items

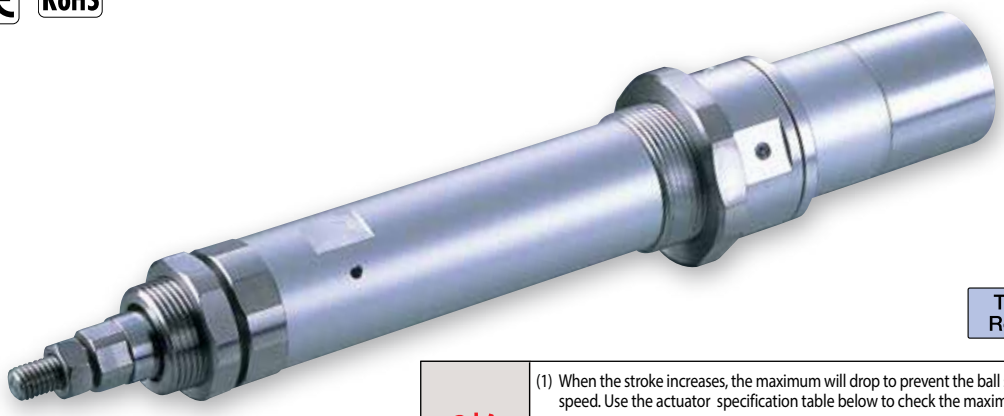
RCA — **RA3D** — **I** — **20** — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental * The Simple absolute encoder is also considered type "I".	20: 20W Servo motor	10: 10mm 5: 5mm 2.5: 2.5mm	50: 50mm 〜 200: 200mm (50mm pitch increments)	A1: ACON ASEL A3: AMEC ASEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot Cable	See Options below.

* See page Pre-47 for details on the model descriptions.

CE RoHS

Power-saving



Technical References → Appendix P.5

POINT Notes on selection

(1) When the stroke increases, the maximum will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 2.5mm-lead model). These values are the upper limits for the acceleration.
(3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.
(4) Please note that there is no brake option for the motor built-in specification.
(5) See page A-71 for details on push motion.

Actuator Specifications

■ Leads and Payloads

Model number	Motor output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCA-RA3D-I-20-10-①-②-③-④	20	10	4.0	1.5	36.2	50~200 (every 50mm)
RCA-RA3D-I-20-5-①-②-③-④		5	9.0	3.0	72.4	
RCA-RA3D-I-20-2.5-①-②-③-④		2.5	18.0	6.5	144.8	

■ Stroke and Maximum Speed

Lead \ Stroke	50~200 (every 50mm)
10	500
5	250
2.5	125

(Unit: mm/s)

Code explanation ① Stroke ② Applicable controller ③ Cable length ④ Options *See page A-71 for details on push motion.

① Stroke

①Stroke (mm)	Standard price
50	—
100	—
150	—
200	—

③ Cable Length

Type	Cable symbol	Standard Price
Standard	**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)	—

* See page A-59 for cables for maintenance.

④ Options

Name	Option code	See page	Standard price
Foot bracket	**FT**	→ A-49	—
Flange bracket (front)	**FL**	→ A-45	—
Flange bracket (back)	**FLR**	→ A-46	—
Home sensor	**HS**	→ A-50	—
Power-saving	**LA**	→ A-52	—
Knuckle joint	**NJ**	→ A-53	—
Non-motor end specification	**NM**	→ A-52	—
Trunnion bracket (front)	**TRF**	→ A-57	—
Trunnion bracket (back)	**TRR**	→ A-58	—

*The home sensor (HS) cannot be used on the Non-motor end models.

Actuator Specifications

Item	Description
Drive System	Ball screw, ø8mm, rolled C10
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Rod diameter	ø16mm
Non-rotating accuracy of rod	±1.0 deg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Dimensional Drawings

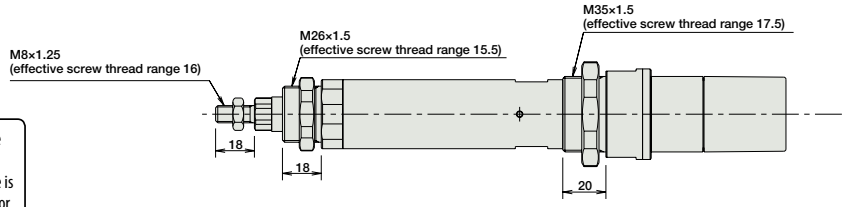
CAD drawings can be downloaded from the website. www.intelligentactuator.com

For Special Orders Appendix P.15

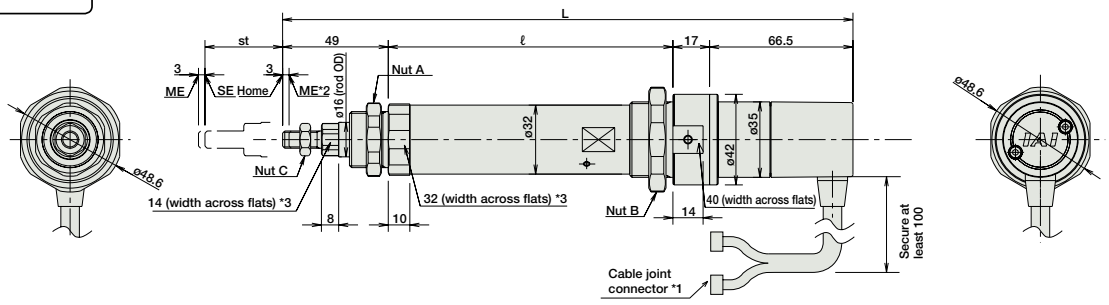
2D CAD

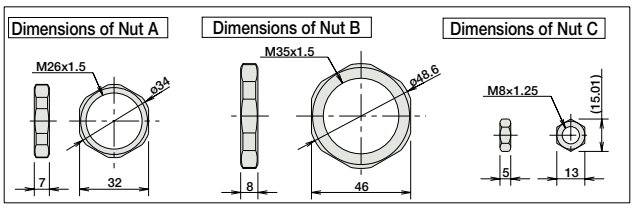
(*1) Connect the motor and encoder cables here. See page A-59 for details on cables.
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) The orientation of the bolt varies depending on the product.

[No Brake]



Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.





■ Dimensions and Weight by Stroke

RCA-RA3D (without brake)

Stroke	50	100	150	200
L	264.5	314.5	364.5	414.5
ℓ	132	182	232	282
Weight (kg)	0.7	0.8	0.9	1.0

RCA-RA3D models are not equipped with a brake.

②Applicable Controllers

RCA series actuators can be operated with the controllers indicated below. Select the type according to your intended application. * ACON-CY also can be used.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type		AMEC-C-20SI①-②-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-20SI①-②-2-0	Simple controller operable with the same signal as a solenoid valve		DC24V	(Standard) 1.7A rated 5.1A max. (Power-saving) 1.7A rated 3.4A max.	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-③-~~-②-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected				—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-③-~~-Ⓥ-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type		ACON-C-20SI①-②-2-0	Positioning is possible for up to 512 points	512 points			—	→ P631
Safety-Compliant Positioner Type		ACON-CG-20SI①-②-2-0					—	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20SI①-②-2-0	Pulse train input type with differential line driver support	(—)			—	
Pulse Train Input Type (Open Collector)		ACON-PO-20SI①-②-2-0	Pulse train input type with open collector support				—	
Serial Communication Type		ACON-SE-20SI①-N-0-0	Dedicated Serial Communication	64 points			—	
Program Control Type		ASEL-CS-1-20SI①-②-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			—	→ P675

* This is for the single-axis ASEL. * Enter the code "LA" in ① when the power-saving specification is specified. * ② indicates I/O type (NP/PN).
* ③ indicates number of axes (1 to 8). * Ⓥ indicates field network specification symbol.