

RCA-SA5D

ROBO Cylinder Slider Type 52mm Width 24V Servo Motor
Motor Built-In (Direct-Coupled)

■ Configuration: **RCA** — **SA5D** — — **20** — — — — —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental
A: Absolute
* Absolute encoder models can only use ASEL.
When the actuator is used with the simple absolute encoder, the model is considered an incremental model.

20: 20W Servo motor

12: 12mm
6: 6mm
3: 3mm

50: 50mm
500: 500mm (50mm pitch increments)

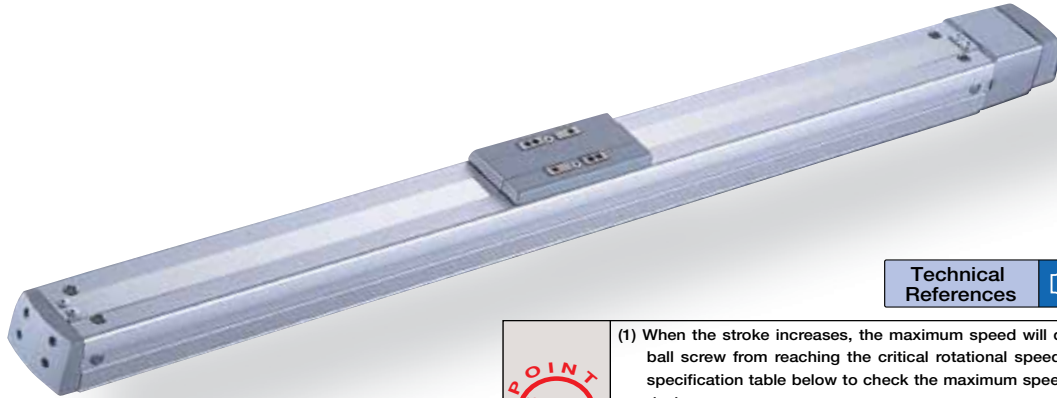
A1: ACON
RACON
ASEL
A3: AMEC
ASEP

N: None
P: 1m
S: 3m
M: 5m
X : Custom Length
R : Robot Cable

See Options below

* See page Pre-35 for explanation of each code that makes up the configuration name.

Power-saving



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed 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 the 3mm-lead model). These values are the upper limits for the acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor Output (w)	Lead (mm)	Max. Load Capacity Horizontal (kg)/Vertical (kg)	Rated Thrust (N)	Stroke (mm)
RCA-SA5D-①-20-12-②-③-④-⑤	20	12	4 / 1	16.7	50 ~ 500 (50mm increments)
RCA-SA5D-①-20-6-②-③-④-⑤		6	8 / 2	33.3	
RCA-SA5D-①-20-3-②-③-④-⑤		3	12 / 4	65.7	

■ Stroke and Maximum Speed

Stroke Lead	50 ~ 450 (50mm increments)	500 (mm)
	12	800
6	400	380
3	200	190

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Option (Unit: mm/s)

Encoder & Stroke List

② Stroke (mm)	Standard Price	
	① Encoder Type	
	Incremental	Absolute
50	I	A
100	-	-
150	-	-
200	-	-
250	-	-
300	-	-
350	-	-
400	-	-
450	-	-
500	-	-

④ Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	—
	S (3m)	—
	M (5m)	—
Special Lengths	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)	—

* See page A-39 for cables for maintenance.

⑤ Option List

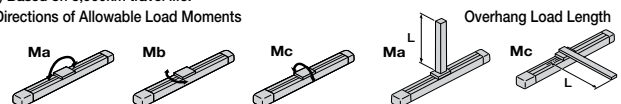
Name	Option Code	See Page	Standard Price
Brake (Cable exiting end)	BE	→ A-25	—
Brake (Cable exiting left)	BL	→ A-25	—
Brake (Cable exiting right)	BR	→ A-25	—
Foot bracket	FT	→ A-29	—
Power-saving	LA	→ A-32	—
Reversed-home	NM	→ A-33	—
Slider Roller	SR	→ A-36	—

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6 N-m Mb: 26.6 N-m Mc: 47.5 N-m
Allowable Dynamic Moment (*)	Ma: 4.9 N-m Mb: 6.8 N-m Mc: 11.7 N-m
Overhang Load Length	Ma direction: 150mm or less Mb-Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



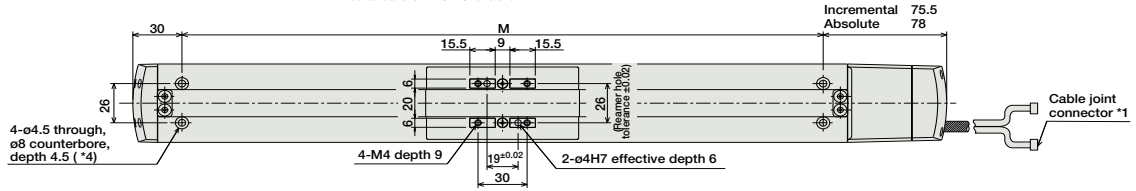
Dimensions

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

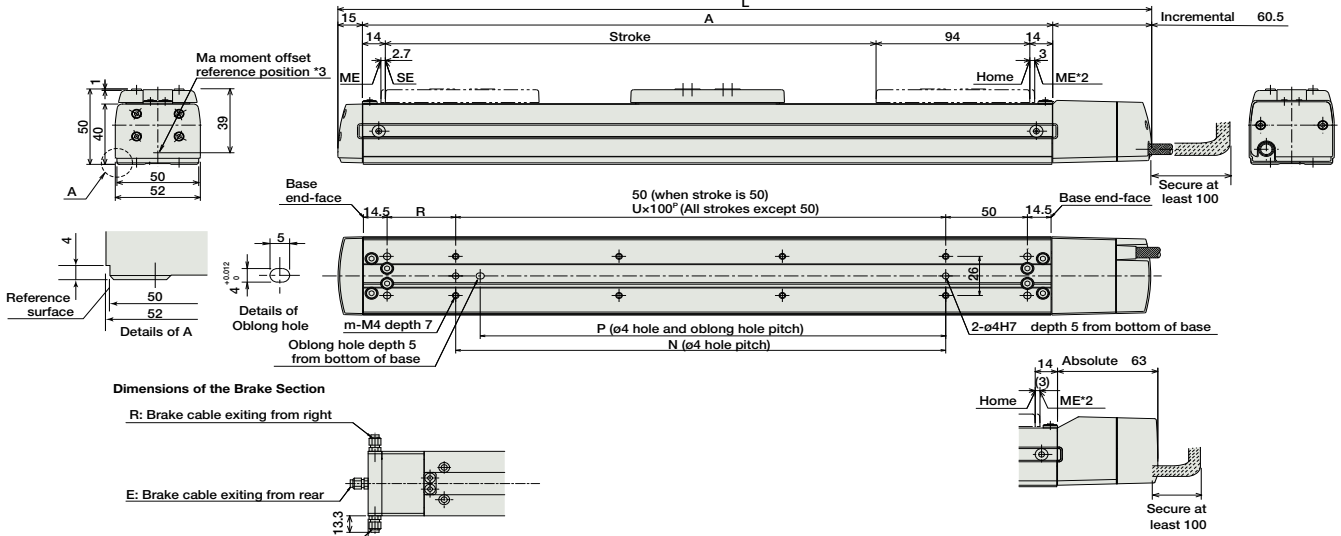


- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

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- *3 Reference position for calculating the moment M_a .
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 300mm or less.



■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500
L	Incremental	247.5	297.5	347.5	397.5	447.5	497.5	547.5	597.5	647.5
	Absolute	250	300	350	400	450	500	550	600	650
A	172	222	272	322	372	422	472	522	572	622
M	142	192	242	292	342	392	442	492	542	592
N	50	100	100	200	200	300	300	400	400	500
P	35	85	85	185	185	285	285	385	385	485
R	42	42	92	42	92	42	92	42	92	42
U	-	1	1	2	2	3	3	4	4	5
m	4	4	4	6	6	8	8	10	10	12
Weight (kg)	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1

* Adding a brake increases the actuator's overall length (L) by 26.5mm (39.8mm with the cable coming out its end), and its weight by 0.3kg.

③ Compatible Controllers

The RCA series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page	
Solenoid Valve Type		AMEC-C-20②-NP-2-1	Easy-to-use controller, even for beginners	3 points	DC24V	(Standard) 1.3A rated 4.4A max. (Power-saving) 1.3A rated 2.5A max.	-	→ P477	
		ASEP-C-20②-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.						-
Splash-Proof Solenoid Valve Type		ASEP-CW-20②-NP-2-0		-					
Positioner Type		ACON-C-20②-NP-2-0	Positioning is possible for up to 512 points	512 points					
Safety-Compliant Positioner Type		ACON-CG-20②-NP-2-0							
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20②-NP-2-0	Pulse train input type with differential line driver support	(-)					→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-20②-NP-2-0	Pulse train input type with open collector support						
Serial Communication Type		ACON-SE-20②-N-0-0	Dedicated to serial communication	64 points					
Field Network Type		RACON-20②	Dedicated to field network	768 points					→ P503
Program Control Type		ASEL-C-1-20①②-NP-2-0	Programmed operation is possible Can operate up to 2 axes	1500 points					→ P567

* This is for the single-axis ASEL.

* ① is a placeholder for the encoder type (I: incremental, A: absolute).

* ② is a placeholder for the code "LA" when the power-saving option is specified.