EC-RR6□AHR

High Rigidity | Side-mounted Motor | Body width 63 mm | 24v Stepper motor

■ Model Specification Items

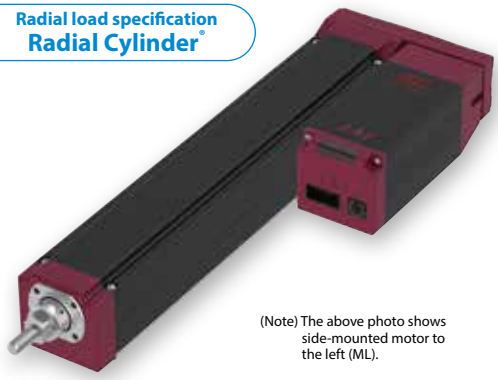
EC — RR6 [ ] AHR — [ ] — [ ] — [ ]

Series	Type	Lead		Specification		Stroke		Cable Length		Options
EC	RR6	S	20mm	AHR	High rigidity with Side-mounted motor	50	50mm	0	Terminal type with connector	Refer to the price list below
		H	12mm			~	~	1	1m	
		M	6mm			400	400mm (per 50mm)	~	~	
		L	3mm					10	10m	

CE RoHS

Horizontal | Vertical | Side | Ceiling

Radial load specification
Radial Cylinder®



(Note) The above photo shows side-mounted motor to the left (ML).

POINT Selection Notes

(1) The actuator specifications display the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" for more details.
(2) The Radial Cylinder is equipped with a guide. Please refer to P111 for details of the radial loads applied to the rod.
(3) The value of the horizontal payload assumes the use of an external guide.
(4) When performing a push-motion operation, please refer to the "Correlation between push force and current limit value." Push force is only a guide.
(5) Depending on the ambient operating temperature, duty control is necessary. Please refer to P115 for cautions.
(6) Special attention needs to be paid to the mounting orientation. Please refer to P33 for details.

Stroke

Stroke (mm)	EC-RR6□AHR	Stroke (mm)	EC-RR6□AHR
50	○	**250**	○
100	○	**300**	○
150	○	**350**	○
200	○	**400**	○

Cable length

Cable code	Cable length
0	No cable (connector supplied)
1 ~ 3	1 ~ 3m
4 ~ 5	4 ~ 5m
6 ~ 10	6 ~ 10m

(Note) Robot cables.

Options

Name	Option code	Reference page
Brake	**B**	See P.101
Tip adapter (flange)	**FFA**	See P.101
Flange (front)	**FL**	See P.102
Foot bracket	**FT**	See P.103
Side-mounted motor to the left (Note 1)	**ML**	See P.105
Side-mounted motor to the right (Note 1)	**MR**	See P.105
Tip adapter (female screw)	**NFA**	See P.106
Knuckle joint (Note 2)	**NJ**	See P.107
Knuckle joint + oscillation receiving bracket (Note 2)	**NJPB**	See P.107
Non-motor end specification	**NM**	See P.108
PNP specification	**PN**	See P.108
Clevis bracket (Note 2)	**QR**	See P.108
Clevis bracket + oscillation receiving bracket (Note 2)	**QRPB**	See P.109
Split motor and controller power supply specification	**TMD2**	See P.109
Battery-less absolute encoder	**WA**	See P.109
Wireless communication specification	**WL**	See P.109
Wireless axis-operation specification	**WL2**	See P.109

(Note 1) Please make sure to enter a code in the option column of the model spec item.
(Note 2) Please purchase a clevis bracket (QR or QRPB) and a knuckle joint (NJ or NJPB) together as a set. Mounting is to be done by customer.

Main specifications

Item			Description			
Lead		Ball screw lead (mm)	20	12	6	3
Horizontal	Payload	Max. payload (kg) (energy-saving disabled)	6	25	40	60
		Max. payload (kg) (energy-saving enabled)	6	25	40	40
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	800	700	450	225
		Min. speed (mm/s)	25	15	8	4
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	1	1	1	1
Vertical	Payload	Max. payload (kg) (energy-saving disabled)	1.5	4	10	20
		Max. payload (kg) (energy-saving enabled)	1	4	10	20
	Speed/ acceleration/ deceleration	Max. speed (mm/s)	800	700	450	225
		Min. speed (mm/s)	25	15	8	4
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.5	0.5	0.5
Push force		Max. thrust force when pushing (N)*	67	112	224	449
		Max. speed when pushing (mm/s)	20	20	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake			
		Brake holding force (kgf)	1.5	4	10	20
Stroke		Min. stroke (mm)	50	50	50	50
		Max. stroke (mm)	400	400	400	400
		Stroke pitch (mm)	50	50	50	50

Item	Description
Driving system	Ball screw φ10mm, Rolling C10
Positioning repeatability	±0.05mm
Lost motion	-
Linear guide	Linear motion infinite circulating type
Rod	φ25mm Material: Aluminum Hard alumite treatment
Rod no-rotation precision (Note 3)	0 degree
Ambient operation temperature/humidity	0~40°C, RH 85% or less (Non-condensing)
Degree of protection	IP20
Vibration & shock resistance	4.9m/s² 100Hz or less
Overseas standards	CE Marking, RoHS (Restriction of Hazardous Substances)
Motor type	Stepper motor
Encoder type	Incremental / battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 3) The rod tip displacement angle when no load is applied.

* Speed limitation applies to push motion. See the manual or contact IAI.

Table of Payload by Speed and Acceleration/Deceleration

■ **Energy-saving disabled** Unit of payload is kg. Operations on the blank locations are not possible.

Lead 20

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	6	6	5	5	1.5	1.5
160	6	6	5	5	1.5	1.5
320	6	6	5	3	1.5	1.5
480	6	6	5	3	1.5	1.5
640	6	4	3	2	1.5	1.5
800	4	3			1	1

Lead 12

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	25	18	16	12	4	4
100	25	18	16	12	4	4
200	25	18	16	10	4	4
400	20	14	10	6	4	4
500	15	8	6	4	3.5	3
700	6	2			2	1

Lead 6

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	40	35	30	25	10	10
50	40	35	30	25	10	10
100	40	35	30	25	10	10
200	40	30	25	20	10	10
250	40	27.5	22.5	18	9	8
350	30	14	12	10	5	4.5
400	18	10	6	2	3	2.5
450	8	3			1	0.5

Lead 3

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	60	50	45	40	20	20
50	60	50	45	40	20	20
100	60	50	45	40	20	20
125	60	50	40	30	10	10
175	40	35	25	20	6	5
200	35	23	15	5	5	4
225	16				2	

■ Energy-saving enabled Unit of payload is kg.

Lead 20

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	6	5	1
160	6	5	1
320	6	5	1
480	4	3	1
640	3	1	0.5

Lead 12

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	25	10	4
100	25	10	4
200	25	10	4
300	20	8	3
400	10	5	2
500	5	2	1

Lead 6

Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	40	20	10
50	40	20	10
100	40	20	10
150	40	20	8
200	35	18	5
250	10	6	3

Lead 3

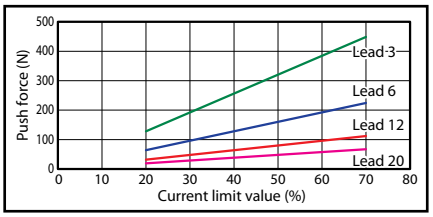
Orientation	Horizontal		Vertical
Speed (mm/s)	Acceleration (G)		
	0.3	0.7	0.3
0	40	25	20
25	40	25	20
50	40	25	20
75	40	25	12
100	40	25	9
125	40	25	5

Stroke and maximum speed

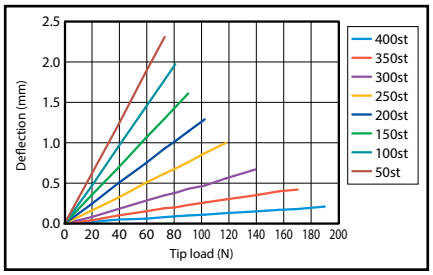
Lead (mm)	Energy-saving mode	50-400 (per 50mm)
20	Disabled	800
	Enabled	640
12	Disabled	700
	Enabled	500
6	Disabled	450
	Enabled	250
3	Disabled	225
	Enabled	125

(Unit is mm/s)

Correlation between push force and current limit value



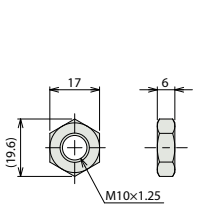
Rod deflection value (reference value)



Dimensions

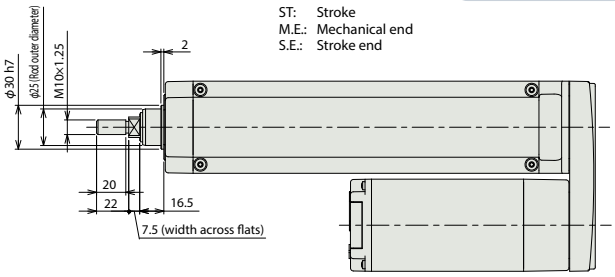
*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
*2 The drawing below represents side-mounted motor to the left (ML).
*3 The direction of width across flats various depending on the product. This flat cannot be used for reference plane.

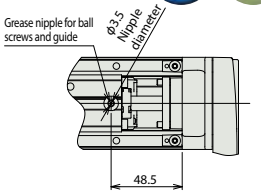
CAD drawings can be downloaded from our website.
www.intelligentactuator.com



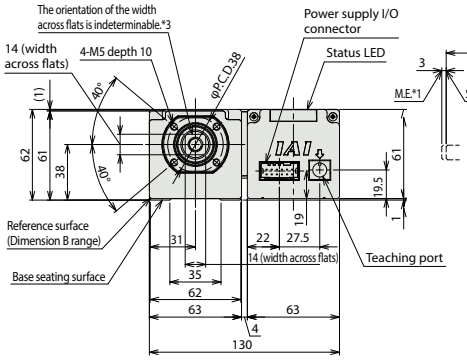
Supplied hex nut

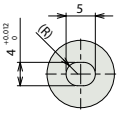
ST: Stroke
M.E.: Mechanical end
S.E.: Stroke end



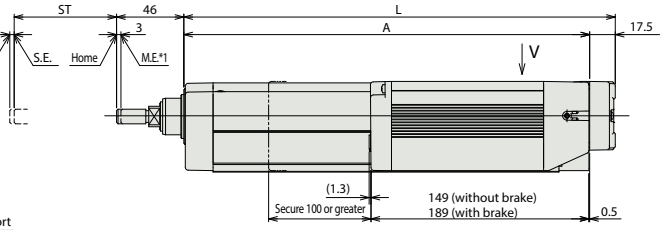


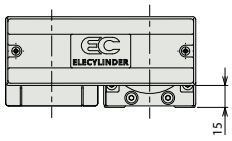
Arrow view V
Grease nipple

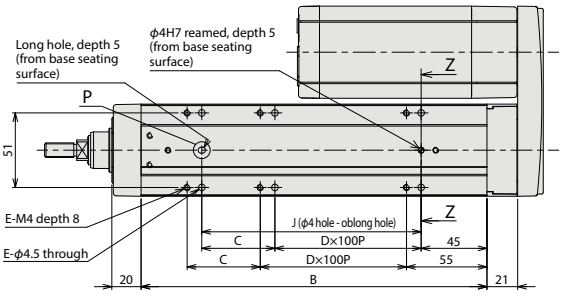


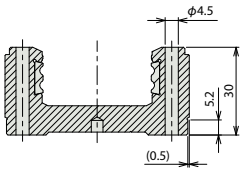


Detailed drawing P
base long hole detail









Sectional view Z-Z
Detail of through hole for attaching the base

■ Dimensions by stroke

Stroke	50	100	150	200	250	300	350	400
L	345	395	445	495	545	595	645	695
A	227	277	327	377	427	477	527	577
B	186.5	236.5	286.5	336.5	386.5	436.5	486.5	536.5
C	0	50	0	50	0	50	0	50
D	1	1	2	2	3	3	4	4
E	4	6	6	8	8	10	10	12
J	100	150	200	250	300	350	400	450

■ Mass by stroke

Stroke		50	100	150	200	250	300	350	400
Weight (kg)	Without brake	2	2.2	2.5	2.8	3	3.3	3.6	3.8
	With brake	2.3	2.5	2.8	3.1	3.3	3.6	3.9	4.1

Applicable controller

(Note) The EC series is equipped with a built-in controller. Please refer to P116 for details.