

EC-S8 AR

Simple dust-proof

Motor side-mounted

Body width **90 mm**

24v Stepper motor

Model specification items

EC	S8		A	R			
Series	Type	Lead	Specification	Specification	Stroke	Power · I/O cable length	Option
	S	30mm	A	For long stroke	R	Motor side-mounted	Refer to the Option table below
	H	20mm			350	350mm	
	M	10mm			1100	1100mm (every 50mm)	
	L	5mm					



Horizontal

Vertical

Side

Ceiling

(Note) The above photo shows motor side-mounted specification (ML).

Table of strokes

Stroke (mm)	Stroke (mm)
350	750
400	800
450	850
500	900
550	950
600	1000
650	1050
700	1100

Table of Options

Name	Option code	Reference page
RCON-EC connection specification (Note 1)	ACR	2-625
Brake	B	2-625
Grease Specification (Note 2)	G5	2-635
Motor side-mounted to the left (Note 3)	ML	2-635
Motor side-mounted to the right (Note 3)	MR	2-635
Non-motor end homing specification	NM	2-638
PNP specification	PN	2-638
Slider part roller specification (Note 4)	SR	2-641
Twin power specification	TMD2	2-641
Double slider specification (Note 2) (Note 4) (Note 5)	W	2-271
Battery-less absolute encoder specification	WA	2-642
Wireless communication specification	WL	2-642
Wireless axis operation specification	WL2	2-643

(Note 1) When selecting RCON-EC connection specification (ACR), PNP specification (PN) and Twin power specification (TMD2) cannot be selected.

(Note 2) Double slider specification (W) and Grease Specification (G1/G5) cannot be used together.

(Note 3) Make sure to specify either model in the option of the model specification items.

(Note 4) When Slider part roller specification (SR) and Double slider specification (W) are used together, Slider part roller specification (SR)'s price will be doubled.

(Note 5) Some leads cannot be selected. Refer to P. 2-271 for details.

Selection Notes



- (1) Longer strokes may decrease the maximum speed due to the resonance of the ball screw. Check the stroke maximum speed required in the "Stroke and Max. Speed" table.
- (2) "Main Specifications" displays the payload's maximum value. Refer to the "Table of Payload by Speed and Acceleration" for details.
- (3) If performing push-motion operations, refer to the "Correlation between Push force and Current Limit" diagram. The push force is only for a reference value. Contact IAI for precautions.
- (4) Depending on the ambient operating temperature, the duty ratio may be limited. Contact IAI for details.
- (5) Pay close attention to the installation orientation. Contact IAI for the overhang load length.
- (6) Reference value of the overhang load length is under 400mm (800mm for the double slider specification) in the Ma, Mb, and Mc directions. Contact IAI for the overhang load length.
- (7) The center of gravity of the attached object should be less than 1/2 of the overhang distance. Even when the overhang distance and load moment are within the allowable range, the operating conditions should be moderated if some abnormal vibration or noise is observed.
- (8) For the ordering model number and notes for the double slider specification, please contact IAI.
- (9) There are limitations on connections when RCON-EC connection specification (ACR) is connected to EC connection unit (RCON-EC-4). Please contact IAI for details.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 7) (With connectors on both end)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	No cable	✓ (Note 6)	✓
1 ~ 3	1 ~ 3m	✓	✓
4 ~ 5	4 ~ 5m	✓	✓
6 ~ 7	6 ~ 7m	✓	✓
8 ~ 10	8 ~ 10m	✓	✓

(Note 6) Only a terminal connector is supplied. Contact IAI for details.

(Note 7) In case an optional RCON-EC connection specification (ACR) is selected.

(Note) Robot cable

4-directional connector cable

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 8) (With connectors on both end)
		CB-EC2-PWBIO□□□-RB supplied	CB-REC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓	✓
S4 ~ S5	4 ~ 5m	✓	✓
S6 ~ S7	6 ~ 7m	✓	✓
S8 ~ S10	8 ~ 10m	✓	✓

(Note 8) In case an optional RCON-EC connection specification (ACR) is selected.

(Note) Robot cable

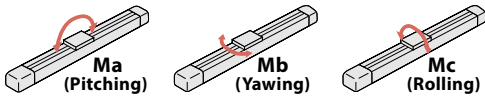
Main specifications

Item		Description				
Lead	Ball screw lead (mm)	30	20	10	5	
	Horizontal	Payload	20	35	70	80
		Max. speed (mm/s)	1200	975	450	225
		Min. speed (mm/s)	38	25	13	7
		Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3
Vertical	Max. acceleration/deceleration (G)	1	1	0.5	0.3	
	Payload	2	4	25	55	
	Max. speed (mm/s)	850	650	400	200	
	Min. speed (mm/s)	38	25	13	7	
Push	Rated acceleration/deceleration (G)	0.3	0.3	0.3	0.3	
	Max. acceleration/deceleration (G)	0.5	0.5	0.5	0.3	
	Max. push force (N)	78	103	235	470	
	Max. push speed (mm/s)	38	25	20	20	
Brake	Brake specification	Non-excitation actuating solenoid brake				
	Brake holding force (kgf)	2	4	25	55	
Stroke	Min. stroke (mm)	350	350	350	350	
	Max. stroke (mm)	1100	1100	1100	1100	
	Stroke pitch (mm)	50	50	50	50	

Item	Description
Driving system	Ball screw, ϕ 16mm, rolled C10
Positioning repeatability	\pm 0.05mm
Lost motion	(two-point positioning function; cannot be represented)
Base	Dedicated aluminum extruded material (A6063S5-T6 equivalent), black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 173 N·m
	Mb: 173 N·m Mc: 271 N·m
Dynamic allowable moment (Note 9)	Ma: 61 N·m
	Mb: 61 N·m Mc: 116 N·m
Ambient operating temperature, humidity	0 - 40°C, 85%RH or less (Non-condensing)
Degree of protection	IP20
Vibration/shock resistance	4.9m/s ²
Overseas standards	CE marking, RoHS directive
Motor type	Stepper motor (\square 56SP) (Power capacity: max. 6A)
Encoder type	Incremental/battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 9) Based on the standard rated operation life of 5,000km. Operation life varies according to operating and mounting conditions. Contact IAI to confirm operational life span.

Slider type moment direction



Payload by speed and acceleration

The unit for payload is kg. If blank, operation is not possible.

Lead 30

Orientation	Horizontal				Vertical	
	Acceleration (G)					
Speed (mm/s)	0.3	0.5	0.7	1	0.3	0.5
0	20	16	13	12	2	2
200	20	16	13	12	2	2
450	20	13	12	11	1	1
650	14	10	9	8	1	1
850	9	6	4	2	1	1
1000	5	3	2	1		
1200	1					

Lead 20

Orientation	Horizontal				Vertical	
	Acceleration (G)					
Speed (mm/s)	0.3	0.5	0.7	1	0.3	0.5
0	35	25	25	25	4	4
200	35	25	25	25	4	4
300	35	25	24	16	4	4
400	35	22	18	12	1	1
650	18	9	4	3	1	1
800	10	3	1			
900	7	1				
975	4					

Lead 10

Orientation	Horizontal		Vertical	
	Acceleration (G)			
Speed (mm/s)	0.3	0.5	0.3	0.5
0	70	70	25	25
100	70	70	25	25
200	60	50	14	14
300	45	30	7	7
400	15	9	2	1
450	11	2		

Lead 5

Orientation	Horizontal		Vertical	
	Acceleration (G)			
Speed (mm/s)	0.3	0.5	0.3	0.5
0	80	80	55	55
50	80	80	55	55
75	80	80	30	30
135	80	80	18	18
175	70	70	11	11
200	40	40	3	3
225	10	10		

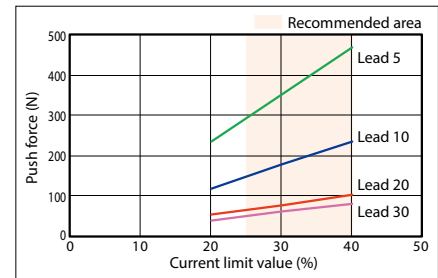
Stroke and maximum speed

Lead (mm)	350~700 (every 50mm)	750 (mm)	800 (mm)	850 (mm)	900 (mm)	950 (mm)	1000 (mm)	1050 (mm)	1100 (mm)
30	1200<850>	1160<850>	1040<850>	940<850>	860<850>	780	720	660	
20	975<650>	880<650>	780<650>	700<650>	640	580	530	480	440
10	450<400>	430<400>	380	340	310	280	260	240	220
5	225<200>	215<200>	190	170	150	140	130	115	110

(Unit: mm/s)

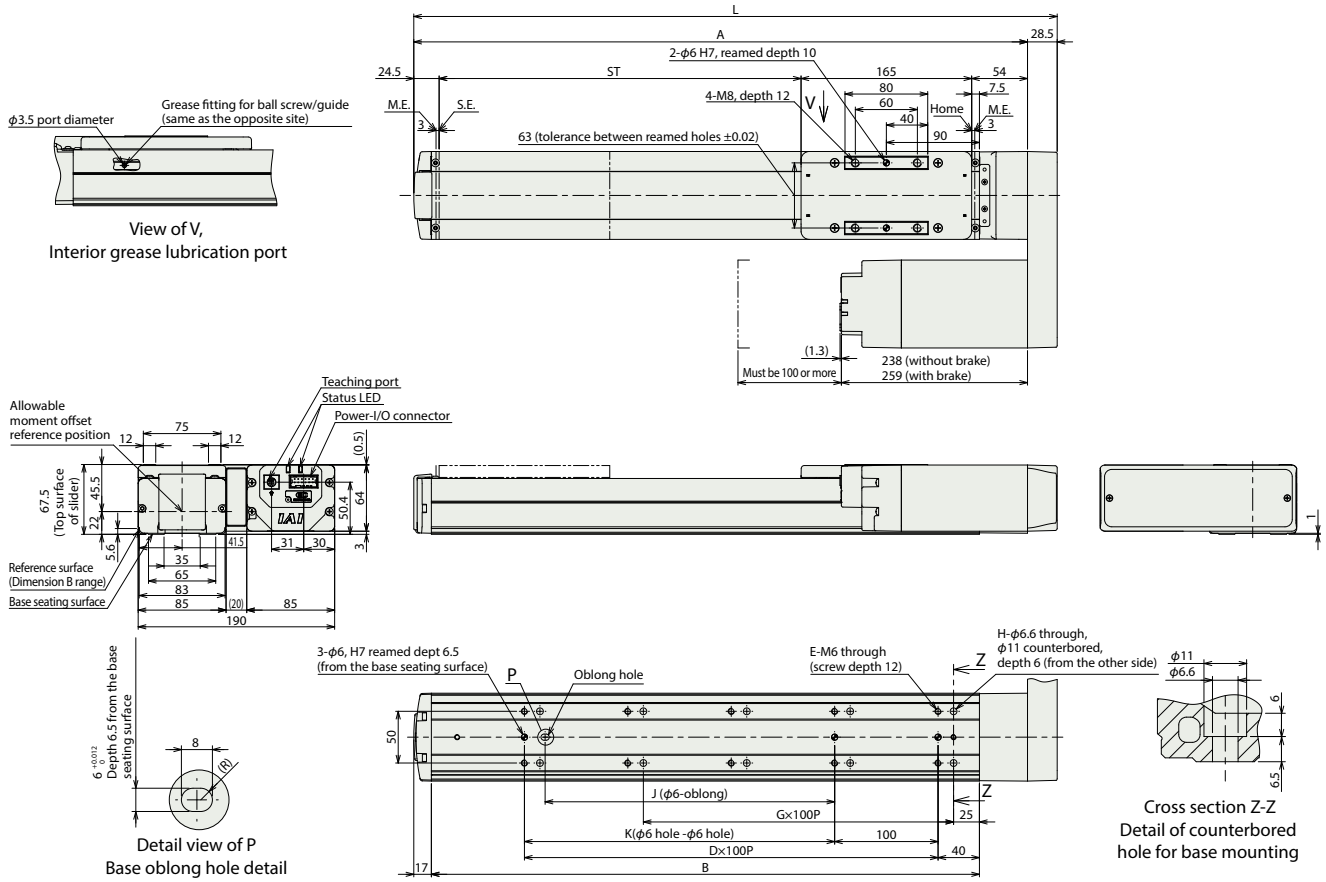
(Note) Values in brackets <> are for vertical use.

Correlation between Push force and Current Limit



(Note) When the slider is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
 (Note) To mount the actuator using the through holes on the base, it is necessary to remove the side cover and stainless sheet.
 (Note) The following drawings show the side-mounted motor to the left (ML).

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



■ Dimensions by stroke

Stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
L	622	672	722	772	822	872	922	972	1022	1072	1122	1172	1222	1272	1322	1372
A	593.5	643.5	693.5	743.5	793.5	843.5	893.5	943.5	993.5	1043.5	1093.5	1143.5	1193.5	1243.5	1293.5	1343.5
B	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230	1280
D	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
E	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
G	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
H	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
J	280	380	380	480	480	580	580	680	680	780	780	880	880	980	980	1080
K	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000	1100

■ Mass by stroke

Stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	
Mass (kg)	Without brake	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.6	9.9	10.2	10.5	10.8	11.1	11.4
	With brake	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9	12.2

Main specifications (Double slider)

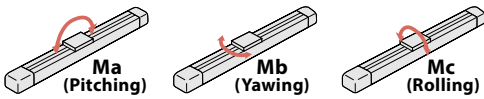
		Item	Description		
Lead	Horizontal	Ball screw lead (mm)	20	10	5
		Max. payload (kg)	35	63	73
Speed/acceleration/deceleration	Horizontal	Max. speed (mm/s)	800	450	200
		Min. speed (mm/s)	25	13	7
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.5	0.3
		Max. payload (kg)	—	18	48
Vertical	Vertical	Max. speed (mm/s)	—	200	175
		Min. speed (mm/s)	—	13	7
		Rated acceleration/deceleration (G)	—	0.3	0.3
		Max. acceleration/deceleration (G)	—	0.5	0.3
		Max. push force (N)	103	235	470
Push	Horizontal	Max. push speed (mm/s)	25	20	20
		Brake specification	Non-excitation actuating solenoid brake		
Brake	Horizontal	Brake holding force (kgf)	4	25	55
		Minimum nominal stroke (mm)	350	350	350
Stroke	Horizontal	Minimum effective stroke (mm)	150	150	150
		Maximum nominal stroke (mm)	1100	1100	1100
		Maximum effective stroke (mm)	900	900	900
		Stroke pitch (mm)	50	50	50
		Stroke pitch (mm)	50	50	50

(Note) Nominal stroke: Stroke specified as the model code
 Effective stroke: Actually operable stroke
 (Note) Lead 20 cannot be installed vertically.

Item	Description
Driving system	Ball screw, ϕ 16mm, rolled C10
Positioning repeatability	\pm 0.05mm
Lost motion	(two-point positioning function; cannot be represented)
Base	Dedicated aluminum extruded material (A6063S5-T6 equivalent), black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 1560 N·m
	Mb: 1560 N·m
	Mc: 542 N·m
Dynamic allowable moment (Note 10)	Ma: 449 N·m
	Mb: 449 N·m
	Mc: 188 N·m
Ambient operating temperature, humidity	0 - 40°C, 85%RH or less (Non-condensing)
Degree of protection	IP20
Vibration/shock resistance	4.9m/s ²
Overseas standards	CE marking, RoHS directive
Motor type	Stepper motor (□56SP) (Power capacity: max. 6A)
Encoder type	Incremental/battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 10) Based on the standard rated operation life of 5,000km. Operation life varies according to operating and mounting conditions. Contact IAI to confirm operational life span.

Slider type moment direction



Payload by speed and acceleration (double slider specification)

The unit for payload is kg. If blank, operation is not possible.

Lead 20

Orientation	Horizontal		Vertical	
	Acceleration (G)			
Speed (mm/s)	0.3	0.5	0.3	0.5
	0	35	25	
200	35	25		
300	35	25		
400	28	15		
650	13	2		
800	3			

Lead 10

Orientation	Horizontal				Vertical	
	Acceleration (G)					
Speed (mm/s)	0.3	0.5	0.3	0.5		
	0	63	63	18	18	
100	63	63	18	18		
200	53	42	7	7		
300	38	23				
400	8	2				
450	4					

Lead 5

Orientation	Horizontal		Vertical	
	Acceleration (G)			
Speed (mm/s)	0.3	0.3		
	0	73	48	
50	73	48		
75	73	23		
135	73	11		
175	50	4		
200	20			

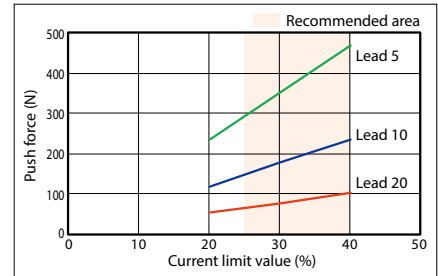
Stroke and maximum speed (double slider specification)

Lead (mm)	Nominal stroke	350~700	750	800	850	900	950	1000	1050	1100
	Effective stroke (every 50mm)	150~500	550	600	650	700	750	800	850	900
20		800	780	700	640	640	580	530	480	440
10		450<200>	430<200>	380<200>	340<200>	310<200>	280<200>	260<200>	240<200>	220<200>
5		200<175>	200<175>	190<175>	170	150	140	130	115	110

(Note) Values in brackets < > are for vertical use.
 (Note) Nominal stroke: Stroke specified as the model code
 Effective stroke: Actually operable stroke

(Unit: mm/s)

Correlation between Push force and Current Limit (double slider specification)



(Note) Same values as those for the single slider specification.

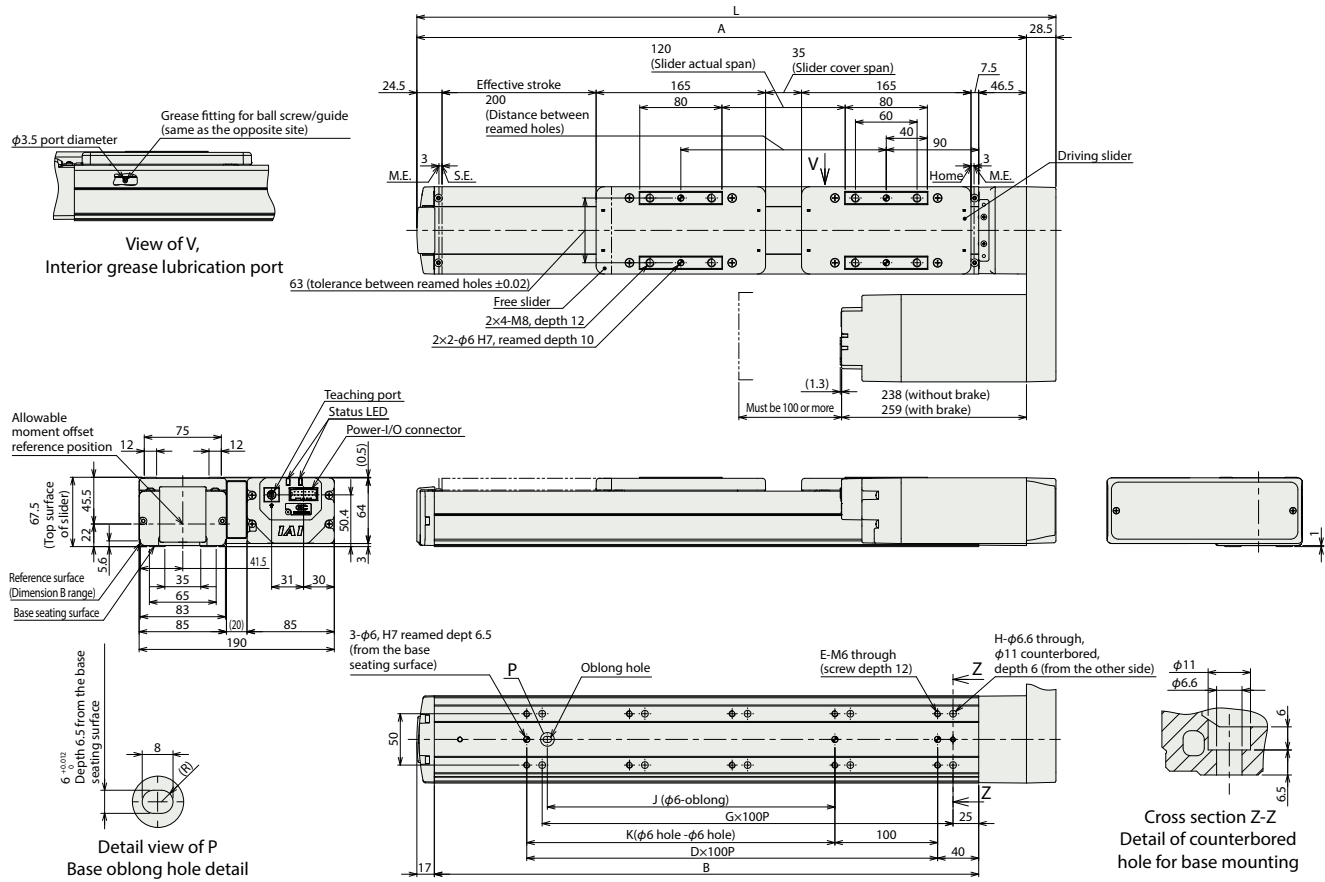
Dimensions (double slider specification)

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



(Note) When the slider is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) Connect the slider at the slider cover span or distance between reamed holes as specified in the drawing.
(Note) To mount the actuator using the through holes on the base, it is necessary to remove the side cover and stainless sheet.

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



Dimensions by stroke

Nominal stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
L	622	672	722	772	822	872	922	972	1022	1072	1122	1172	1222	1272	1322	1372
A	593.5	643.5	693.5	743.5	793.5	843.5	893.5	943.5	993.5	1043.5	1093.5	1143.5	1193.5	1243.5	1293.5	1343.5
B	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230	1280
D	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
E	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
G	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
H	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
J	280	380	380	480	480	580	580	680	680	780	780	880	880	980	980	1080
K	300	400	400	500	500	600	600	700	700	800	800	900	900	1000	1000	1100

(Note) Nominal stroke: Stroke specified as the model code
Effective stroke: Actually operable stroke

Mass by stroke

Nominal stroke	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Mass (kg)	Without brake	7.71	8.01	8.30	8.60	8.89	9.18	9.48	9.77	10.07	10.37	10.67	10.97	11.27	11.57	11.87
	With brake	8.53	8.83	9.12	9.42	9.71	10.01	10.30	10.59	10.89	11.19	11.49	11.79	12.09	12.39	12.69

(Note) The mass is added by 0.79 kg of the free slider to the single slider specification.

Applicable controller

(Note) The EC series is equipped with a built-in controller. Contact IAI for more details about the built-in controller.