

Model selection/Technical data

EJSG

EJSG-G

EJSG-C

EJSG-P4

EJSG-FP1

Model selection
Technical data

ECG-A

Safety
precautions

C O N T E N T S

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Model selection

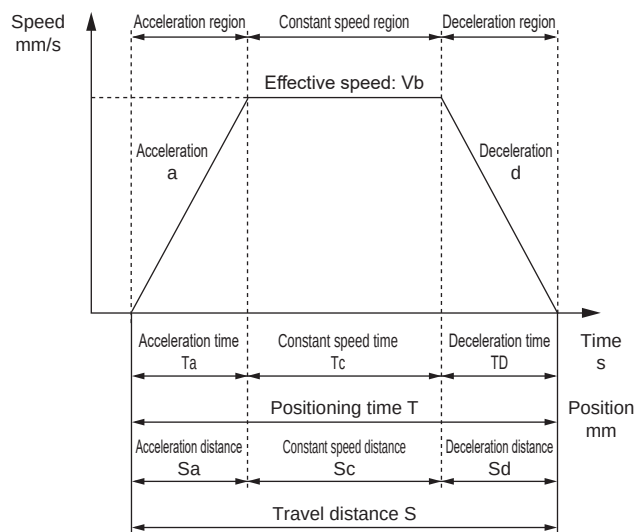
STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed and acceleration/deceleration. Refer to the Series Variation (pages 2, 38, 56, 74 and 92), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP 2 Confirming positioning time

Calculate the positioning time with the selected product according to the following example and confirm that the required tact is achievable.

Positioning time for general transport operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s ²	
	Set deceleration	d	mm/s ²	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= [2 \times a \times d \times S / (a + d)]^{1/2}$
	Effective speed	Vb	mm/s	Smaller of V and Vmax
	Acceleration time	Ta	s	$= Vb / a$
	Deceleration time	TD	s	$= Vb / d$
	Constant speed time	Tc	s	$= Sc / Vb$
	Acceleration distance	Sa	mm	$= (a \times Ta^2) / 2$
	Deceleration distance	Sd	mm	$= (d \times TD^2) / 2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd)$
	Positioning time	T	s	$= Ta + Tc + TD$

* Do not use at speeds that exceed the specifications.

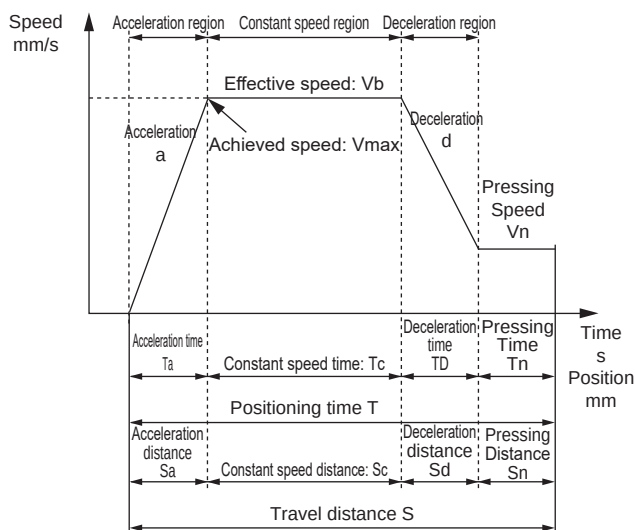
* Depending on acceleration/deceleration and stroke, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.

* Acceleration/deceleration differs depending on the product and working conditions. Refer to the specification page of each model for details.

* Though the stabilization time depends on working conditions, it may take as long as 0.2s.

* $1G = 9.8 \text{ m/s}^2$.

Positioning time for pressing operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s ²	
	Set deceleration	d	mm/s ²	
	Travel distance	S	mm	
	Pressing speed	Vn	mm/s	
	Pressing distance	Sn	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= [2 \times a \times d \times (S - Sn + Vn^2 / 2d) / (a + d)]^{1/2}$
	Effective speed	Vb	mm/s	The lesser value of V and Vmax
	Acceleration time	Ta	s	$= Vb / a$
	Deceleration time	TD	s	$= (Vb - Vn) / d$
	Constant speed time	Tc	s	$= Sc / Vb$
	Pressing time	Tn	s	$= Sn / Vn$
	Acceleration distance	Sa	mm	$= (a \times Ta^2) / 2$
	Deceleration distance	Sd	mm	$= ((Vb + Vn) \times TD) / 2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd + Sn)$
	Positioning time	T	s	$= Ta + Tc + TD + Tn$

* Do not use at speeds that exceed the specifications.

* Pressing speed differs depending on the product.

* Depending on acceleration/deceleration and stroke, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.

* Acceleration/deceleration differs depending on the product and working conditions. Refer to the specification page of each model for details.

* Though the stabilization time depends on working conditions, it may take as long as 0.2s.

* $1G = 9.8 \text{ m/s}^2$.

STEP 3

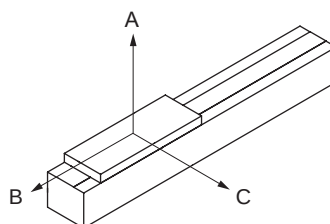
Checking allowable overhang length

Make sure that the load overhang length during operation is within the allowable range (pages 110 to 112).
Contact your CKD Sales representative for selection details.

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Allowable overhang length (EJSG Series)

[When installed horizontally]



[Allowable overhang length]

●EJSG-04*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	6	6	800	135	190
			11	595	70	95
			16	375	40	60
		12	4	800	190	255
			9	490	80	105
			13	320	50	65
	0.7	6	6	800	145	205
			11	415	75	105
			16	270	45	65
		12	4	800	200	270
			7	460	110	145
			11	275	65	85

●EJSG-05*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	5	13	820	95	125
			27	350	40	50
			40	210	20	30
		10	12	765	100	130
			23	355	45	60
			35	210	25	35
		20	5	1000	235	285
			11	520	100	120
			16	330	65	75
	0.7	5	13	1000	120	170
			27	505	50	70
			40	320	30	45
		10	14	1000	110	155
			21	665	70	95
			31	430	45	60
		20	5	1000	260	330
			11	460	110	140
			16	295	70	90

●EJSG-08*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	5	25	1000	185	305
			50	1000	85	140
			80	740	45	75
		10	25	1000	165	260
			45	875	85	135
			70	525	50	75
		20	14	1000	305	490
			29	1000	140	220
			43	920	90	140
	0.7	5	25	1000	195	315
			50	850	90	145
			80	505	50	80
		10	25	1000	195	315
			45	955	100	165
			70	585	60	95
		20	10	1000	430	680
			20	1000	205	325
			30	760	135	210

* Values are when the actuator operating life is 5,000km.

* The overhang direction is for a single-direction load.

* Dimensions A, B, and C are measured from the center of the table top.

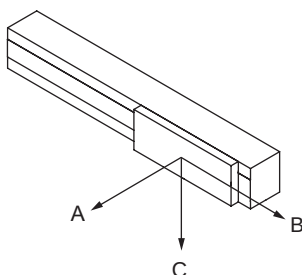
* Values are at maximum speed given stroke of 350 mm and maximum load capacity.

* Values may vary according to motor mounting direction and power supply voltage. Contact CKD for details.

* For acceleration/deceleration and load capacity, refer to the Load Capacity by Speed and Acceleration/Deceleration table (specification page for each model).

Allowable overhang length(EJSGSeries)

[When wall-mounted]



[Allowable overhang length]

●EJSG-04*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	6	6	150	105	800
			11	60	40	490
			16	20	15	240
		12	4	220	165	800
			9	70	50	390
			13	30	25	210
	0.7	6	6	165	115	765
			11	65	45	365
			16	30	20	205
		12	4	235	175	800
			7	110	80	420
			11	50	40	225

●EJSG-05*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	5	7	205	150	1000
			13	80	60	685
			20	30	20	335
		10	7	195	145	1000
			13	75	55	575
			20	25	20	265
		20	5	245	200	1000
			11	80	65	400
			16	35	25	200
	0.7	5	10	175	125	1000
			20	55	40	620
			30	15	10	305
		10	14	105	75	965
			21	50	35	580
			31	15	10	280
		20	5	290	225	1000
			11	95	75	405
			16	45	35	230

●EJSG-08*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm		
				A	B	C
Straight / side/ bottom	0.3	5	25	250	155	1000
			50	85	50	1000
			70	40	20	680
		10	25	210	130	1000
			45	85	50	745
			70	25	15	345
		20	15	350	220	1000
			30	140	90	810
			43	90	55	790
	0.7	5	25	265	160	1000
			50	95	55	780
			80	30	20	390
		10	25	265	160	1000
			45	115	70	890
			70	45	25	490
		20	10	630	400	1000
			20	280	175	1000
			30	160	100	705

* Values are when the actuator operating life is 5,000km.

* The overhang direction is for a single-direction load.

* Dimensions A, B, and C are measured from the center of the table top.

* EJSG Series stroke: 350mm, max. speed under max. load capacity.

* Values may vary according to motor mounting direction and power supply voltage. Contact CKD for details.

* For acceleration/deceleration and load capacity, refer to the Load Capacity by Speed and Acceleration/Deceleration table (specification page for each model).

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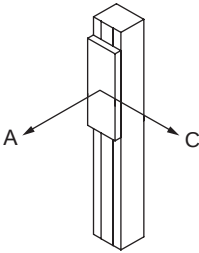
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Allowable overhang length (EJSG Series)

[When installed vertically]



[Allowable overhang length]

●EJSG-04*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm	
				A	C
Straight / side/ bottom	0.3	6	3	315	315
			5	175	175
			8	90	90
	12		1	755	725
			2	355	340
			3	225	215

●EJSG-05*

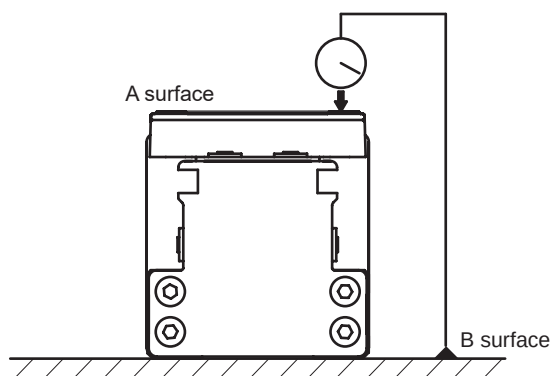
Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm	
				A	C
Straight / side/ bottom	0.3	5	6	265	265
			11	120	120
			16	70	70
		10	3	525	525
			5	295	295
			8	170	170
		20	2	815	810
			3	525	525
			4.5	340	340

●EJSG-08*

Motor mounted	Acceleration/ deceleration G	Screw lead	Load weight kg	Overhang mm	
				A	C
Straight / side/ bottom	0.3	5	15	325	325
			25	175	175
			40	90	90
		10	6	690	680
			12	315	315
			18	195	195
		20	3	1000	1000
			7	580	575
			10	390	390

* Values are when the actuator operating life is 5,000km.
 * The overhang direction is for a single-direction load.
 * Dimensions A and C are measured from the center of the table top.
 * Values are at maximum speed given stroke of 350 mm and maximum load capacity.
 * Values may vary according to motor mounting direction and power supply voltage. Contact CKD for details.
 * For acceleration/deceleration and load capacity, refer to the Load Capacity by Speed and Acceleration/Deceleration table (specification page for each model).

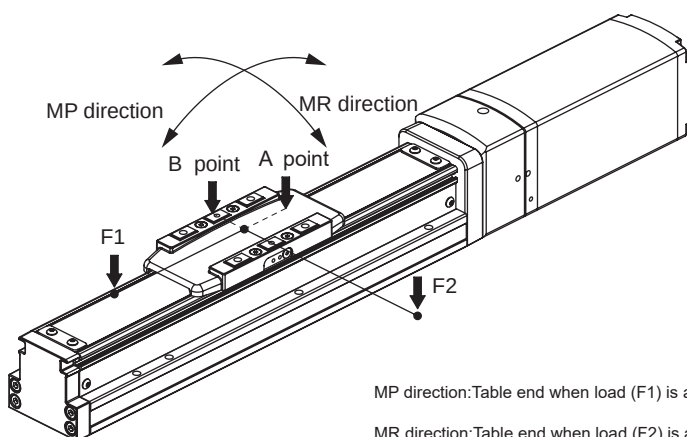
Slider parallelism *Reference value



	(mm)
	Parallelism
	A surface against B surface
EJSG-04 Series	0.03
EJSG-05 Series	
EJSG-08 Series	

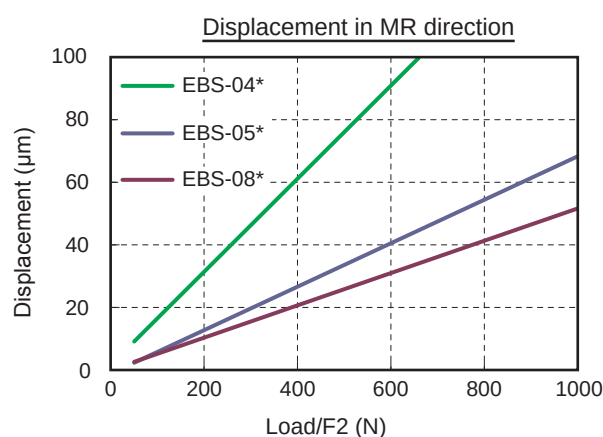
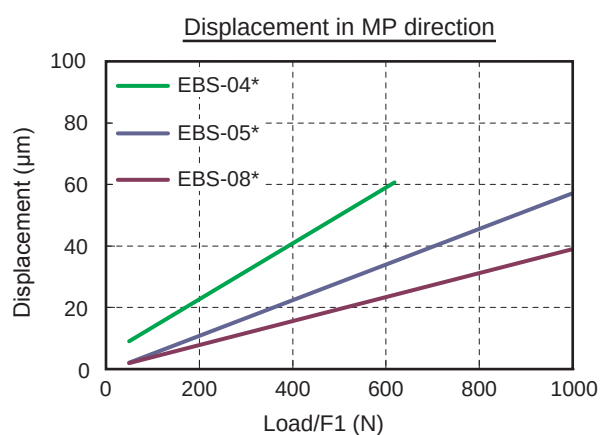
*Parallelism with the product fixed to a surface plate.

Table deflection *Reference value



MP direction: Table end when load (F1) is applied to a position 100mm from the center of the table (Displacement at point A)

MR direction: Table end when load (F2) is applied to a position 100mm from the center of the table (Displacement at point B)



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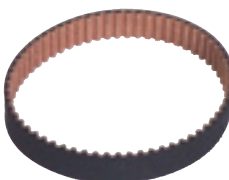
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Maintenance parts

■ Maintenance parts (motor unit)

Model No.		Compatibility	
			
Without brake	Absolute encoder	EJSG-04E-MOTORUNIT-NB	EJSG-04E
		EJSG-04R-MOTORUNIT-NB	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-NB	EJSG-05E
		EJSG-05R-MOTORUNIT-NB	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-NB	EJSG-08E
		EJSG-08R-MOTORUNIT-NB	EJSG-08R/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-NC	EJSG-04E
		EJSG-04R-MOTORUNIT-NC	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-NC	EJSG-05E
		EJSG-05R-MOTORUNIT-NC	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-NC	EJSG-08E
		EJSG-08R-MOTORUNIT-NC	EJSG-08R/D/L
With brake	Absolute encoder	EJSG-04E-MOTORUNIT-BB	EJSG-04E
		EJSG-04R-MOTORUNIT-BB	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-BB	EJSG-05E
		EJSG-05R-MOTORUNIT-BB	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-BB	EJSG-08E
		EJSG-08R-MOTORUNIT-BB	EJSG-08R/D/L
	Incremental Encoder	EJSG-04E-MOTORUNIT-BC	EJSG-04E
		EJSG-04R-MOTORUNIT-BC	EJSG-04R/D/L
		EJSG-05E-MOTORUNIT-BC	EJSG-05E
		EJSG-05R-MOTORUNIT-BC	EJSG-05R/D/L
		EJSG-08E-MOTORUNIT-BC	EJSG-08E
		EJSG-08R-MOTORUNIT-BC	EJSG-08R/D/L

■ Maintenance parts / motor mounting direction: For right/left/downward mounting (timing belt)

Model No.		Compatibility	
			
EJSG-04R-BELT		EJSG-04R/D/L	
EJSG-05R-BELT		EJSG-05R/D/L	
EJSG-08R-BELT		EJSG-08R/D/L	

Maintenance parts

■ Maintenance parts (steel belt)

Model No.	Compatibility
	
EJSG-04-STEELBELT (stroke code 4-digit)	EJSG-04 (applicable stroke product)
EJSG-05-STEELBELT (stroke code 4-digit)	EJSG-05 (applicable stroke product)
EJSG-08-STEELBELT (stroke code 4-digit)	EJSG-08 (applicable stroke product)

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