CKD

New Products

Electric Actuator
Table type
FLCR Series

Longer, User-Friendly, and More Advanced Table type

Long Stroke for extended reach

New

Supports multi-point positioning in a wider range.

Size	Max. stroke		
	Conventional product		New
FLCR-16G	100 mm	▶	**150 mm**
FLCR-20G	100 mm	▶	**200 mm**
FLCR-25G	100 mm	▶	**200 mm**

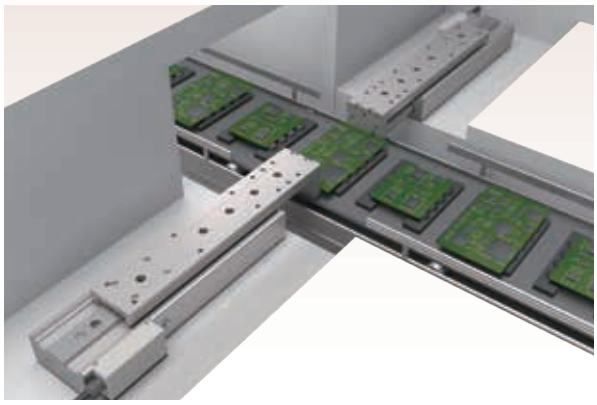
With motor protection case

New

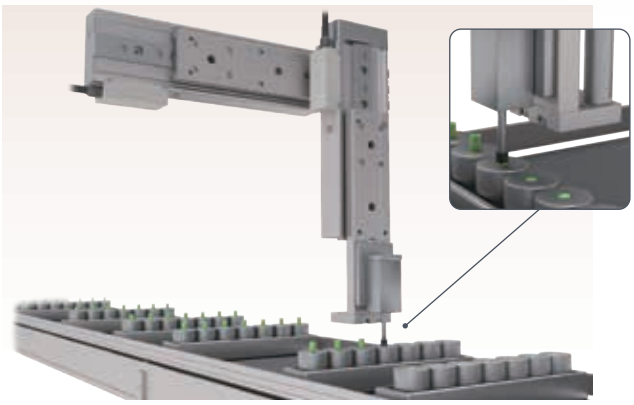
Improved environmental resistance. Movable cable reduces the risk of disconnection.

Application examples

Centering of workpieces of different sizes in limited space.



Press fitting process requiring thrust adjustment.



ROBODEX *Pulse*

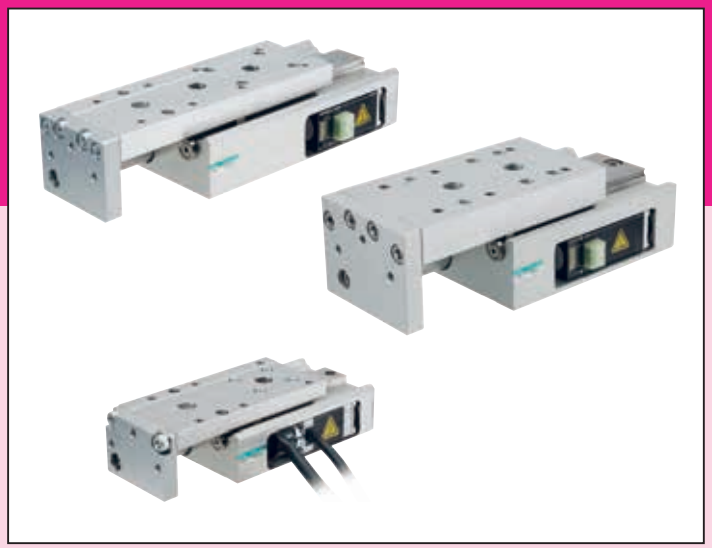
CKD Corporation

CC-1648AA

FLCR

Table type

Electric Actuator
Motor specifications



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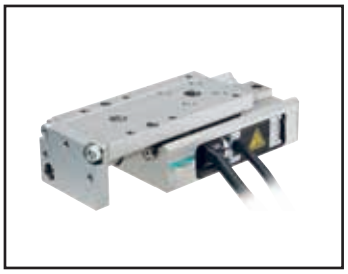
FLCR Series variation

Model No.	Motor Size	Screw lead (mm)	Max. payload (kg)		Stroke and max. speed (mm/s)						Max. Pressing force (N)
			Horizontal	Vertical	50 mm	75 mm	100 mm	125 mm	150 mm	200 mm	
FLCR-16	□20	2	4	4	100 mm/s			90		□	90
		8	3	0.5	300			250		□	20
FLCR-20	□25	2	5.5	6	100						150
		8	5	0.8	300			200			55
FLCR-25	□25 L	2	11	8.5	100			75			210
		6	11	3	300			150			90



Electric actuator Table

FLCR-16

□20 Stepping motor

Refer to the CKD website for applicable detailed model Nos.

How to Order

FLCR - 16 G 02 050 N C N - L S03

❶ 16 ❷ G ❸ 02 ❹ 050 ❺ N ❻ C ❼ L ❽ S03

❶ Size

16

❷ Connected controller *1

G	ECMG, ECG-B
Blank	ECR

❸ Screw lead

02	2 mm
08	8 mm

❹ Stroke

050	50 mm
075	75 mm
100	100 mm
125	125 mm *4
150	150 mm *4

❺ Brake

N	None
B	Available *4

❻ Encoder

C	Incremental Encoder

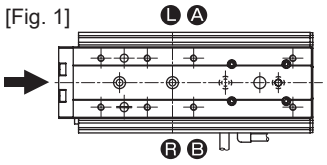
❼ Cable output type/direction *2

L	Direct outlet left side
R	Direct outlet right surface
A	Case outlet left side *4
B	Case outlet right side *4

❽ Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R 03	Movable cable 3 m
R 05	Movable cable 5 m
R 10	Movable cable 10 m

[Fig. 1]



*1. Select the controller from "Electric Actuator (Catalog No.CC-1444A)".
*2. Refer to Fig. 1.
*3. Refer to "Electric Actuator (Catalog No.CC-1444A)" for Dimensions diagram of the relay cable.
*4. Only the applicable controller "ECMG, ECG-B" can be selected.

Specifications

Supported controllers		ECMG, ECG-B, ECR	
Motor		□20 Stepping motor	
Encoder-type		Incremental encoder	
Drive method		Ball screw (ø6) + belt	
Stroke *1	mm	50, 75, 100, 125, 150	
Screw lead	mm	2	8
Max. payload kg *2 *3 *5	Horizontal	4 (4)	3 (3)
	Vertical	4 (4)	0.5 (0.5)
Operation speed range *4 *5	mm/s	2 to 100	10 to 300 (250)
Maximum pushing force	N	90	20
Pressing operation speed range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	[50st] MP:17.8, MY:17.8, MR:19.2	
		[75st or greater]: MP:37.3, MY:37.3, MR:19.2	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *6	Model, power supply voltage	Non-excitation, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding force N	51	9
Insulation resistance		10 MΩ, 500 VDC	
Withstand voltage		500 VAC for 1 minute	
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Degree of protection		IP40	

*1 Stroke 125 and 150 mm are only applicable to ECMG and ECG-B.
*2 The values in ( ) are at 24 VDC.
*3 Max. value at 0.3 G acceleration/deceleration. Payload varies according to acceleration/deceleration and speed. For detailsSpeed and payload.
*4 Values in ( ) are max. speed at 24 VDC.
*5 Differs depending on the stroke. Refer to Speed and Load Capacity for details.
*6 Applicable only for ECMG and ECG-B.

Speed and Payload

[48 VDC] Applicable only to ECR

[When installed horizontally] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	8	0.3 Screw lead (mm) 2	8
2	4		4	
10	4	4	4	3
90	4	4	4	3
100	4	4	3.5	3
200		4		3
300		3		3

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	8	0.3 Screw lead (mm) 2	8
2	4		4	
10	4	0.5	4	0.5
50	4	0.5	4	0.5
60	2.5	0.3	2.5	0.3
70	2	0.3	1.5	0.3
80	1.5	0.3	1.5	0.3
90	1	0.3	0.5	0.3
100	0.4	0.3		0.3
250		0.3		0.3

[At 24 VDC]

[When installed horizontally] (kg)

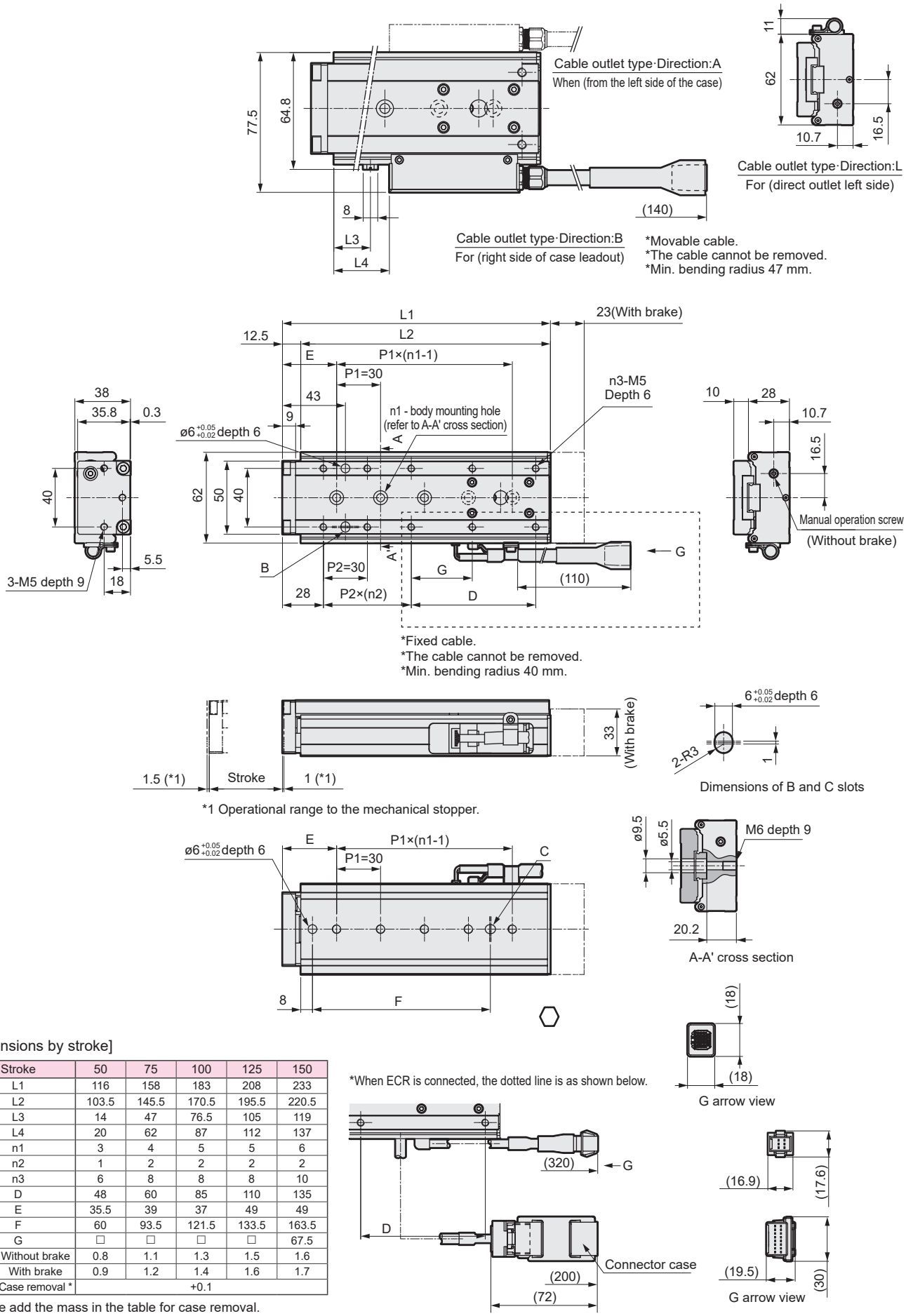
Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	8 100 or less	125 or more	0.3 2 100 or less	125 or more	8 100 or less	125 or more
2	4	3.5			4	3.5		
10	4	3.5	4	3.5	4	3.5	3	2.5
70	4	3.5	4	3.5	4	3.5	3	2.5
80	4	3.5	4	3.5	2	1.5	3	2.5
90	2.5	2	4	3.5	1	0.6	3	2.5
100	2.5		4	3.5	0.5		3	2.5
200			4	3.5			3	2.5
250			1	0.6			1	0.6

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	8 100 or less	125 or more	0.3 2 100 or less	125 or more	8 100 or less	125 or more
2	4	3.5			4	3.5		
10	4	3.5	0.5	0.1	4	3.5	0.5	0.1
20	4	3.5	0.5	0.1	4	3.5	0.5	0.1
30	4	3.5	0.5	0.1	3	2.5	0.5	0.1
40	4	3.5	0.5	0.1	3	2.5	0.5	0.1
50	3	2.5	0.5	0.1	2.5	2	0.5	0.1
60	0.5		0.3		0.4		0.3	
70	0.5		0.3		0.4		0.3	
80	0.4		0.3				0.3	
100			0.3				0.3	

Dimensions

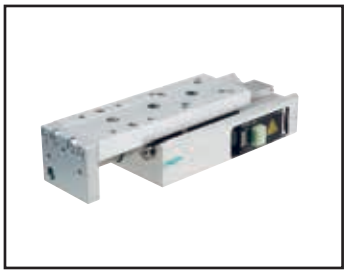
● FLCR-16



[Dimensions by stroke]

Stroke		50	75	100	125	150
L1		116	158	183	208	233
L2		103.5	145.5	170.5	195.5	220.5
L3		14	47	76.5	105	119
L4		20	62	87	112	137
n1		3	4	5	5	6
n2		1	2	2	2	2
n3		6	8	8	8	10
D		48	60	85	110	135
E		35.5	39	37	49	49
F		60	93.5	121.5	133.5	163.5
G		□	□	□	□	67.5
Weight (kg)	Without brake	0.8	1.1	1.3	1.5	1.6
	With brake	0.9	1.2	1.4	1.6	1.7
	Case removal *	+0.1				

*Please add the mass in the table for case removal.



Electric actuator Table

FLCR-20

□25 Stepping motor

Refer to the CKD website for applicable detailed model Nos.

How to Order

FLCR - 20 G 02 050 N C N - L S03

❶ 20 ❷ G ❸ 02 ❹ 050 ❺ N ❻ C ❼ L ❽ S03

❶ Size

20

❷ Connected controller *1

G	ECMG, ECG-B
Blank	ECR

❸ Screw lead

02	2 mm
08	8 mm

❹ Stroke

050	50 mm
075	75 mm
100	100 mm
125	125 mm *4
150	150 mm *4
200	200 mm * 4

❺ Brake

N	None
B	Available *4

❻ Encoder

C	Incremental Encoder

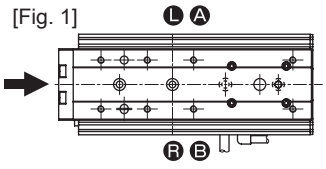
❼ Cable output type/direction *2

L	Direct outlet left side
R	Direct outlet right surface
A	Case outlet left side *4
B	Case outlet right side *4

❽ Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

[Fig. 1]



*1 Select the controller from "Electric Actuator (Catalog No.CC-1444A)".
*2 Refer to Fig. 1.
*3 Refer to "Electric Actuator (Catalog No.CC-1444A)" for Dimensions diagram of the relay cable.
*4 Only the applicable controller "ECMG, ECG-B" can be selected.

Specifications

Supported controllers		ECMG, ECG-B, ECR	
Motor		□25 Stepping motor	
Encoder-type		Incremental encoder	
Drive method		Ball screw (ø6) + belt	
Stroke *1	mm	50, 75, 100, 125, 150, 200	
Screw lead	mm	2	8
Max. payload kg *2 *3 *5	Horizontal	5.5 (5.5)	5 (5)
	Vertical	6 (6)	0.8 (0.8)
Operation speed range *4 *5	mm/s	2 to 100	10 to 300 (300)
Maximum pushing force	N	150	55
Pressing operation speed range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	[50st] MP:31.1, MY:31.1, MR:37.6	
		[75st or greater]: MP:56.2, MY:56.2, MR:37.6	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *6	Model, power supply voltage	Non-excitation, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding force N	77	15
Insulation resistance		10 MΩ, 500 VDC	
Withstand voltage		500 VAC for 1 minute	
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Degree of protection		IP40	

*1 Strokes 125 and 150 and 200 mm are only applicable to ECMG and ECG-B.
*2 The values in ( ) are at 24 VDC.
*3 Max. value at 0.3 G acceleration/deceleration. Payload varies according to acceleration/deceleration and speed. For detailsSpeed and payload.
*4 Values in ( ) are max. speed at 24 VDC.
*5 Differs depending on the stroke. Refer to Speed and Load Capacity for details.
*6 Applicable only for ECMG and ECG-B.

Speed and Payload

[48 VDC] Applicable only to ECR

[When installed horizontally] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	8	0.3 Screw lead (mm) 2	8
2	5.5		5.5	
10	5.5	5.5	5.5	5
100	5.5	5.5	5.5	5
300		5		5

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	8	0.3 Screw lead (mm) 2	8
2	6		6	
10	6	0.8	6	0.8
50	6	0.8	6	0.8
60	6	0.4	6	0.4
90	6	0.4	6	0.4
100	5.5	0.4	5.5	0.4
300		0.4		0.4

[At 24 VDC]

[When installed horizontally] (kg)

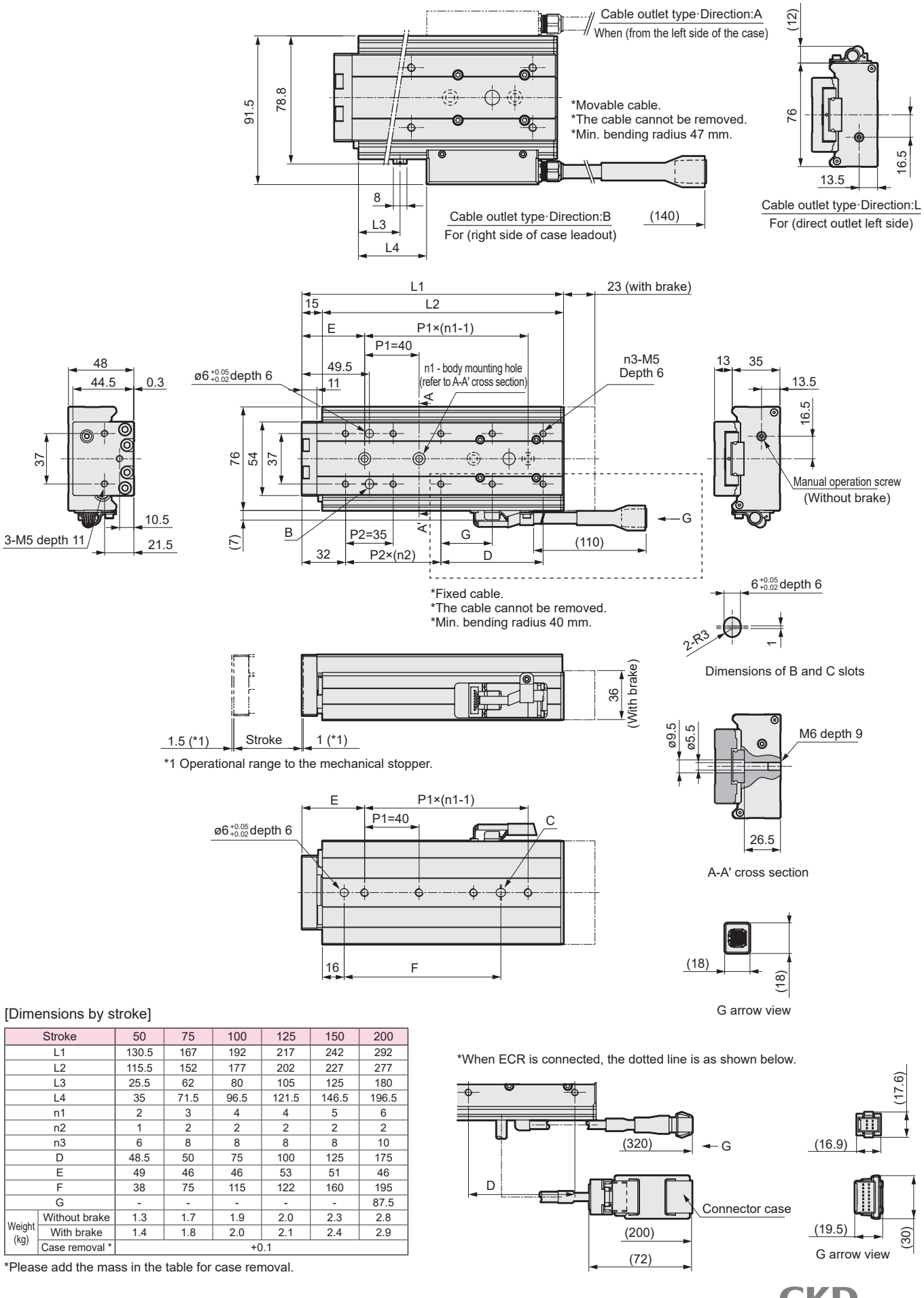
Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	8 100 or less	125 or more	0.3 2 100 or less	125 or more	8 100 or less	125 or more
2	5.5	5			5.5	5		
10	5.5	5	5.5	5	5.5	5	5	4.5
75	5.5	5	5.5	5	5.5	5	5	4.5
90	5.5	5	5.5	5	5	4.5	5	4.5
100	5.5	5	5.5	5	2.5	2	5	4.5
150			5.5	5			5	4.5
200			5.5	5			4.5	4
250			5.5				4.5	
300			3				3	

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	8 100 or less	125 or more	0.3 2 100 or less	125 or more	8 100 or less	125 or more
2	6	5.5			6	5.5		
10	6	5.5	0.8	0.3	6	5.5	0.8	0.3
45	6	5.5	0.8	0.3	6	5.5	0.8	0.3
50	6	2	0.8	0.3	6	2	0.8	0.3
60	6	2	0.4		6	2	0.4	
75	4	1	0.4		3	1	0.4	
90	2	0.5	0.4		2	0.5	0.4	
100	1.5	0.5	0.4		1.5	0.5	0.4	
200			0.4				0.4	

Dimensions

● FLCR-20

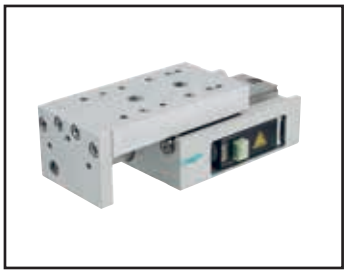


[Dimensions by stroke]

Stroke		50	75	100	125	150	200
L1		130.5	167	192	217	242	292
L2		115.5	152	177	202	227	277
L3		25.5	62	80	105	125	180
L4		35	71.5	96.5	121.5	146.5	196.5
n1		2	3	4	4	5	6
n2		1	2	2	2	2	2
n3		6	8	8	8	8	10
D		48.5	50	75	100	125	175
E		49	46	46	53	51	46
F		38	75	115	122	160	195
G		-	-	-	-	-	87.5
Weight (kg)	Without brake	1.3	1.7	1.9	2.0	2.3	2.8
	With brake	1.4	1.8	2.0	2.1	2.4	2.9
	Case removal *	+0.1					

*Please add the mass in the table for case removal.

*When ECR is connected, the dotted line is as shown below.



Electric actuator Table

FLCR-25

☐25L Stepping motor

Refer to the CKD website for applicable detailed model Nos.

How to Order

FLCR - 25 G 02 050 N C N - L S03

❶Size

25	

❷Supported controllers*1

G	ECMG, ECG-B
Blank	ECR

❸Screw lead

02	2 mm
06	6 mm

❹Stroke

050	50 mm
075	75 mm
100	100 mm
125	125 mm *4
150	150 mm *4
200	200 mm * 4

❺Brake

N	None
B	Available *4

❻Encoder

C	Incremental Encoder

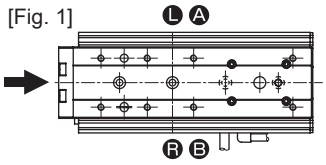
❼Cable output type/direction *2

L	Direct outlet left side
R	Direct outlet right surface
A	Case outlet left side *4
B	Case outlet right side *4

❽Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

[Fig. 1]



*1: Select the controller from "Electric Actuator (Catalog No.CC-1444A)".
*2: Refer to Fig. 1.
*3: Refer to "Electric Actuator (Catalog No.CC-1444A)" for Dimensions diagram of the relay cable.
*4: Only the applicable controller "ECMG, ECG-B" can be selected.

Specifications

Supported controllers		ECMG, ECG-B, ECR	
Motor		☐25L Stepping motor	
Encoder-type		Incremental encoder	
Drive method		Ball screw (ø10) + belt	
Stroke *1	mm	50, 75, 100, 125, 150, 200	
Screw lead	mm	2	6
Max. payload kg *2 *3 *5	Horizontal	11 (11)	11 (11)
	Vertical	8.5 (8.5)	3 (3)
Operation speed range *4 *5	mm/s	2 to 100	7 to 300 (200)
Maximum pushing force	N	210	90
Pressing operation speed range	mm/s	2 to 20	5 to 20
Repeatability	mm	±0.02	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	[50st] MP:65.1, MY:65.1, MR:116.3	
		[75st or greater]: MP:127.5, MY:127.5, MR:116.3	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake *6	Model, power supply voltage	Non-excitation, 24 VDC (+10%/-5%)	
	Power consumption W	1	
	Holding force N	109	38
Insulation resistance		10 MΩ, 500 VDC	
Withstand voltage		500 VAC for 1 minute	
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity		-10 to 50°C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Degree of protection		IP40	

*1 Strokes 125, 150 and 200 mm are applicable only to ECMG, ECG-B.
*2 The values in ( ) are at 24 VDC.
*3 Max. value at 0.3 G acceleration/deceleration. Payload varies according to acceleration/deceleration and speed. For detailsSpeed and payload.
*4 Values in ( ) are max. speed at 24 VDC.
*5 Differs depending on the stroke. Refer to Speed and Load Capacity for details.
*6 Applicable only for ECMG and ECG-B.

Speed and Payload

[48 VDC] Applicable only to ECR

[When installed horizontally] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	6	0.3 Screw lead (mm) 2	6
2	11		11	
10	11	11	11	11
100	11	11	11	11
300		11		11

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2	6	0.3 Screw lead (mm) 2	6
2	8.5		8.5	
10	8.5	3	8.5	3
50	8.5	3	8.5	3
60	8.5	2.5	8.5	2.5
75	7.5	2.5	7	2.5
90	7.5	2.5	6	2.5
100	7.5	2.5	4.5	2.5
150		2		2
300		1		1

[At 24 VDC]

[When installed horizontally] (kg)

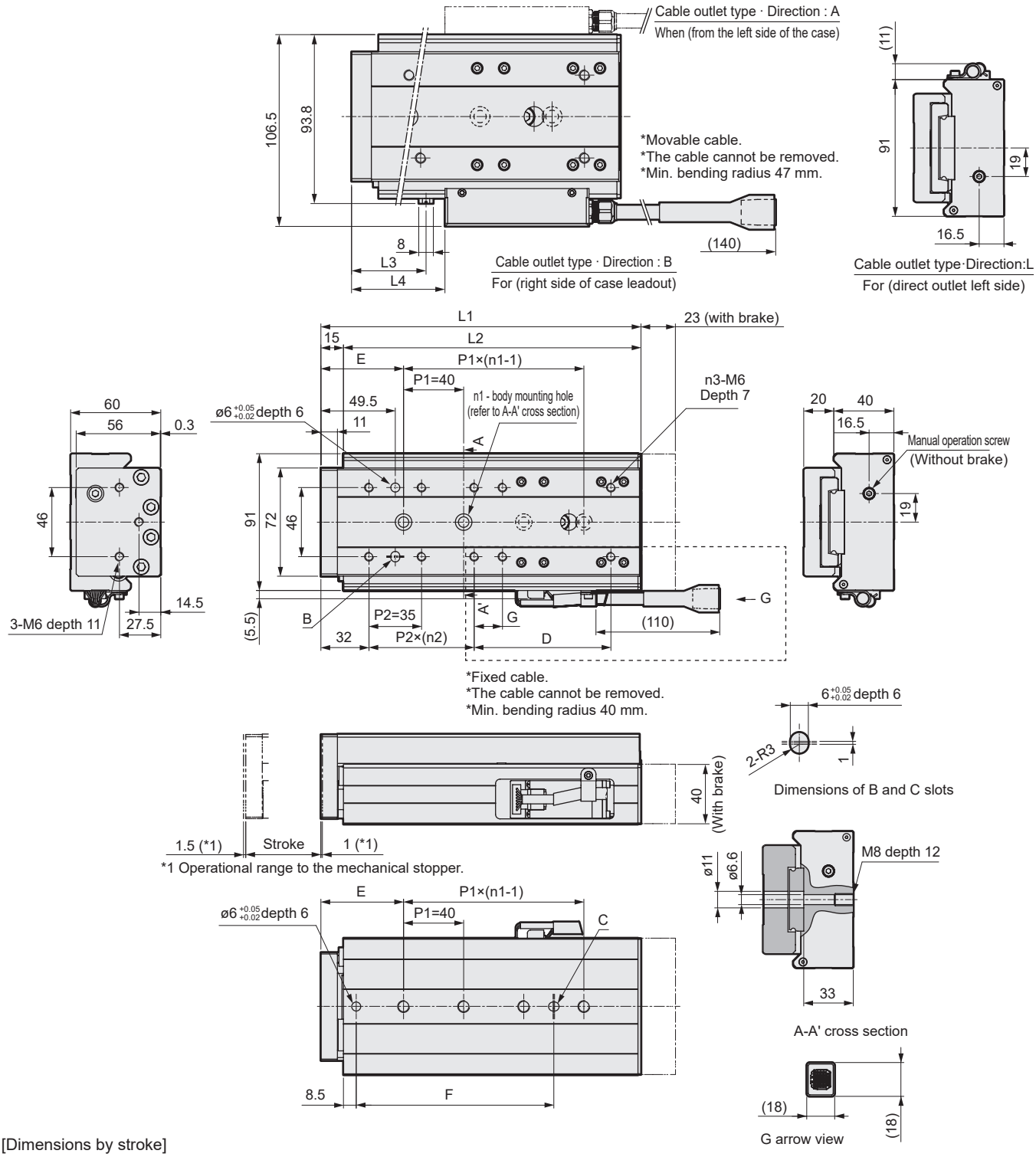
Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	6 100 or less	125 or more	0.3 2 100 or less	125 or more	6 100 or less	125 or more
2	11	10			11	10		
10	11	10	11	10	11	10	11	10
75	11	10	11	10	11	10	11	10
150			11	10			11	10
200			11				11	

[When installed vertically] (kg)

Speed (mm/s)	Acceleration/Deceleration (G) 0.1 Screw lead (mm) 2 Stroke (mm) 100 or less	125 or more	6 100 or less	125 or more	0.3 2 100 or less	125 or more	6 100 or less	125 or more
2	8.5	7.5			8.5	7.5		
10	8.5	7.5	3	2	8.5	7.5	3	2
30	8.5	7.5	3	2	8.5	7.5	3	2
45	4	3	3	2	4	3	3	2
50	3.5	2.5	3	2	3.5	2.5	3	2
60	3.5	2.5	2.5	1.5	3.5	2.5	2.5	1.5
75	3.5	1.5	2.5	1.5	3.5	1.5	2.5	1.5
100			2.5	1.5			2.5	1.5
150			2	1			2	1
200			1				1	

Dimensions

● FLCR-25

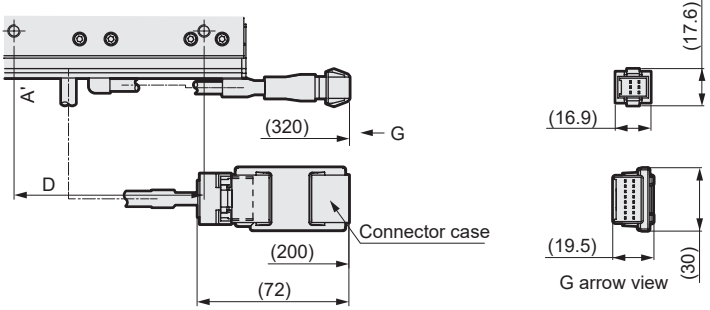


[Dimensions by stroke]

Stroke		50	75	100	125	150	200
L1		142.5	188	213	238	263	313
L2		127.5	173	198	223	248	298
L3		19.5	65	90	100.5	140	155.5
L4		30	76.5	100.5	125.5	150.5	200.5
n1		2	3	4	5	5	6
n2		1	2	2	2	2	2
n3		6	8	8	8	8	10
D		55.5	66	91	116	141	191
E		60.5	60	55	45	60	77
F		57	96.5	131.5	161.5	176.5	233.5
G		-	-	-	-	-	95.5
Weight (kg)	Without brake	2.3	3.0	3.3	3.5	4	4.7
	With brake	2.5	3.2	3.5	3.7	4.2	4.9
	Case removal *	+0.1					

*Please add the mass in the table for case removal.

*When ECR is connected, the dotted line is as shown below.



Model selection

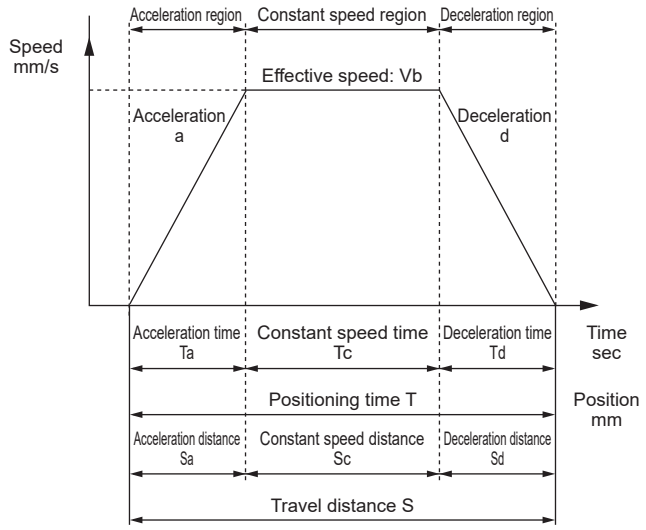
STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed, acceleration/deceleration and power supply voltage. Series variation(Page 1), refer to the specification table for each model and 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.

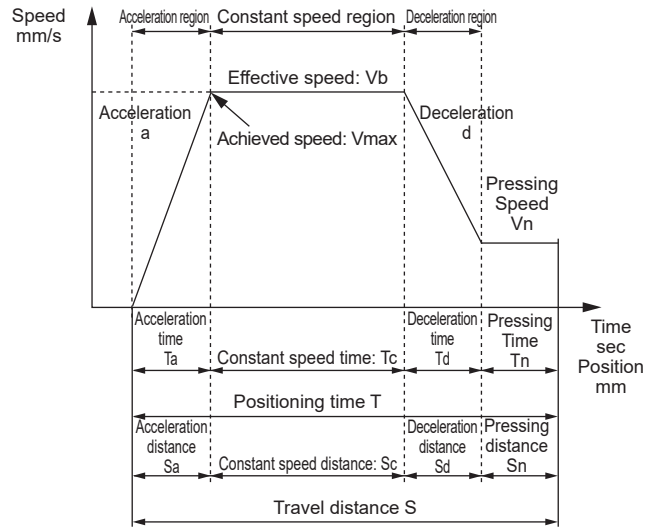
Positioning time for general transport operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s2	
	Set deceleration	d	mm/s2	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	=[2×a×d×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×Ta2)/2
	Deceleration distance	Sd	mm	=(d×Td2)/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 the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (i.e., the set velocity is not reached). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
*Use at the acceleration and deceleration of 0.3 G or less. Refer to the specifications page of each model for details.
*Though the stabilization time differs depending on working conditions, it may take approximately 0.2 s.
*1G≈9.8 m/s2is .

Positioning time for pressing operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s2	
	Set deceleration	d	mm/s2	
	Travel distance	S	mm	
	Pressing speed	Vn	mm/s	
	Pressing distance	Sn	mm	
Calculated value	Achieved speed	Vmax	mm/s	=[2×a×d×(S-Sn+Vn2/2/d)/(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×Ta2)/2
	Deceleration distance	Sd	mm	=((Vb+Vn)×Td)/2
	Constant speed distance	Sc	mm	=S-(Sa+Sd+Sn)
	Positioning time	T	s	=Ta+Tc+Td+Tn

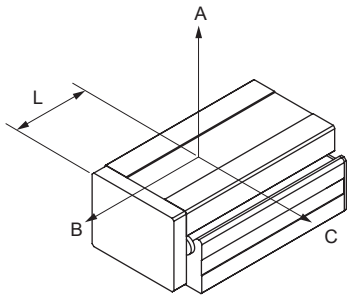
* Do not use at speeds that exceed the specifications.
* Pressing speed differs depending on the product.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (i.e., the set velocity is not reached). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Use at the acceleration and deceleration of 0.3 G or less. Refer to the specifications page of each model for details.
* Though the stabilization time differs depending on working conditions, it may take approximately 0.2 s.
* 1G≈9.8 m/s2is .

STEP 3 Checking allowable overhang length

The load overhang length during operation is the allowable value (Pages 9 to 11).

Allowable overhang length

[When installed horizontally]



[Allowable overhang length]

■FLCR-16

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	1	630	155	195
			2	630	75	95
			4	630	35	45
		8	1	630	135	155
			2	630	65	75
			4	340	30	35
	0.3	2	1	630	160	195
			2	630	80	95
			4	340	35	45
		8	1	475	120	120
			2	225	60	55
			3	145	40	35
75 or more	0.1	2	1	630	380	195
			2	630	185	95
			4	630	85	45
		8	1	630	325	165
			2	630	155	80
			4	630	75	35
	0.3	2	1	630	385	200
			2	630	185	95
			4	630	90	45
		8	1	630	295	145
			2	630	140	70
			3	460	90	45

■FLCR-20

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	1	645	285	380
			3	645	90	125
			5.5	645	50	65
		8	1	645	225	265
			3	645	75	85
			5.5	350	35	45
	0.3	2	1	645	285	380
			3	645	90	120
			5.5	405	50	65
		8	1	645	220	235
			3	270	70	75
			5	155	40	40
75 or more	0.1	2	1	645	580	385
			3	645	185	125
			5.5	645	95	65
		8	1	645	460	295
			3	645	145	95
			5.5	645	75	45
	0.3	2	1	645	580	385
			3	645	185	125
			5.5	645	95	65
		8	1	645	450	280
			3	645	145	90
			5	410	80	50

■FLCR-25

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	3	940	210	410
			5	940	125	245
			11	940	55	105
		6	3	940	165	245
			5	780	95	145
			11	330	40	60
	0.3	2	3	940	210	405
			5	940	125	240
			11	450	55	105
		6	3	630	165	225
			5	365	95	130
			11	150	40	55
75 or more	0.1	2	3	940	465	420
			5	940	275	245
			11	940	115	105
		6	3	940	360	300
			5	940	210	175
			11	920	90	75
	0.3	2	3	940	465	420
			5	940	275	245
			11	940	115	105
		6	3	940	360	295
			5	940	210	175
			11	445	90	70

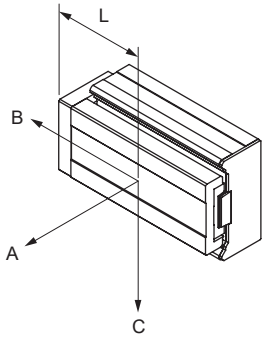
* Values for which the number of actuator operations is limited to 5 million cycles or with a shorter operating life of 1000 km.
* The overhang direction is for a single-direction load.
* Dimensions A, B, and C are measured from the table top.
* Values are at maximum speed and maximum payload.
* Values may vary according to power supply voltage. Contact CKD for details.
* For information on acceleration/deceleration speed and payload, please refer to the payload table by speed and acceleration/deceleration speed (specifications page for each model).

L value (guide block center distance) [mm]

Size	Stroke 50	75	100	125	150	200
FLCR-16	91	124	149	174	199	□
FLCR-20	101	127	152	177	202	252
FLCR-25	104	143	168	193	218	268

Allowable overhang length

[When wall-mounted]



[Allowable overhang length]

■FLCR-16

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	1	180	145	630
			2	80	65	630
			4	30	25	540
		8	1	140	125	630
			2	60	55	600
			4	20	20	230
	0.3	2	1	185	150	630
			2	85	65	630
			4	30	25	300
		8	1	110	110	440
			2	45	45	190
			3	25	25	110
75 or more	0.1	2	1	180	350	630
			2	80	160	630
			4	30	60	630
		8	1	150	295	630
			2	65	130	630
			4	20	45	630
	0.3	2	1	185	360	630
			2	80	160	630
			4	30	60	630
		8	1	130	265	630
			2	55	115	620
			3	30	65	370

■FLCR-20

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	1	365	275	645
			3	110	80	645
			5.5	50	35	645
		8	1	255	215	645
			3	70	60	565
			5.5	30	25	245
	0.3	2	1	365	275	645
			3	110	80	645
			5.5	50	35	365
		8	1	225	210	645
			3	60	55	235
			5	30	25	115
75 or more	0.1	2	1	370	560	645
			3	110	165	645
			5.5	50	75	645
		8	1	280	440	645
			3	80	125	645
			5.5	30	50	645
	0.3	2	1	370	560	645
			3	110	165	645
			5.5	50	75	645
		8	1	270	430	645
			3	75	120	640
			5	35	60	335

■FLCR-25

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm A	B	C
50	0.1	2	3	390	200	940
			5	225	115	940
			11	85	45	850
		6	3	230	150	940
			5	130	85	680
			11	45	30	230
	0.3	2	3	385	200	940
			5	220	115	940
			11	85	45	415
		6	3	215	150	600
			5	120	85	335
			11	40	25	115
75 or more	0.1	2	3	400	445	940
			5	225	250	940
			11	85	95	940
		6	3	285	335	940
			5	155	190	940
			11	55	65	700
	0.3	2	3	400	445	940
			5	225	250	940
			11	85	95	940
		6	3	280	335	940
			5	155	190	940
			11	55	65	370

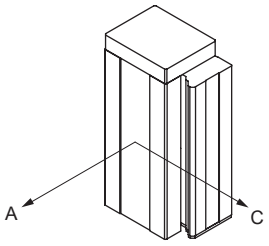
* The value will be limited by the shorter of 5 million actuator actuations or 1,000 km driving life.
* The overhang direction is for a single-direction load.
* Dimensions A, B, and C are measured from the table top.
* Values are at maximum speed and maximum payload.
* Values may vary according to power supply voltage. Contact CKD for details.
* For information on acceleration/deceleration speed and payload, please refer to the payload table by speed and acceleration/deceleration speed (specifications page for each model).

L value (guide block center distance) [mm]

Size	Stroke					
	50	75	100	125	150	200
FLCR-16	91	124	149	174	199	□
FLCR-20	101	127	152	177	202	252
FLCR-25	104	143	168	193	218	268

Allowable overhang length

[When installed vertically]



[Allowable overhang length]

■FLCR-16

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm	
				A	C
50	0.1	2	1	160	160
			2	70	70
			4	30	30
		8	0.3	520	510
			0.4	425	420
			0.5	335	335
	0.3	2	1	160	160
			2	70	70
			4	30	30
		8	0.3	520	510
			0.4	425	420
			0.5	335	335
75 or more	0.1	2	1	410	410
			2	195	195
			4	95	90
		8	0.3	630	630
			0.4	630	630
			0.5	630	630
	0.3	2	1	410	410
			2	195	195
			4	95	95
		8	0.3	630	630
			0.4	630	630
			0.5	630	630

■FLCR-20

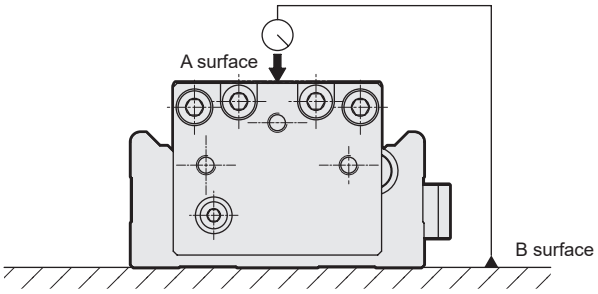
Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm	
				A	C
50	0.1	2	1	270	265
			2	130	125
			4	60	55
		8	0.3	645	645
			0.5	615	610
			0.8	375	375
	0.3	2	1	270	265
			2	130	125
			4	60	60
		8	0.3	645	645
			0.5	610	610
			0.8	375	375
75 or more	0.1	2	1	575	570
			2	285	280
			4	140	135
		8	0.3	645	645
			0.4	645	645
			0.5	645	645
	0.3	2	1	575	570
			2	285	280
			4	140	140
		8	0.3	645	645
			0.4	645	645
			0.5	645	645

■FLCR-25

Stroke mm	Acceleration/ Deceleration G	Screw lead	Load weight (kg)	Overhang mm	
				A	C
50	0.1	2	2	315	310
			4	155	155
			8.5	65	65
		6	1	525	490
			2	275	265
			3	210	210
	0.3	2	2	315	310
			4	155	155
			8.5	65	65
		6	1	520	485
			2	270	260
			3	210	210
75 or more	0.1	2	2	730	725
			4	375	375
			8.5	170	170
		6	1	940	940
			2	645	625
			3	505	500
	0.3	2	2	730	725
			4	375	375
			8.5	170	170
		6	1	940	940
			2	640	620
			3	505	500

* The value is limited to the shorter of 5 million actuator actuations or 1,000 km driving life.
* The overhang direction is for a single-direction load.
* Dimensions A and C are measured from the table top.
* Values are at maximum speed and maximum payload.
* Values may vary according to power supply voltage. Contact CKD for details.
* For information on acceleration/deceleration speed and payload, please refer to the payload table by speed and acceleration/deceleration (specifications page for each model).Specifications page of each model

Slider parallelism *Reference value

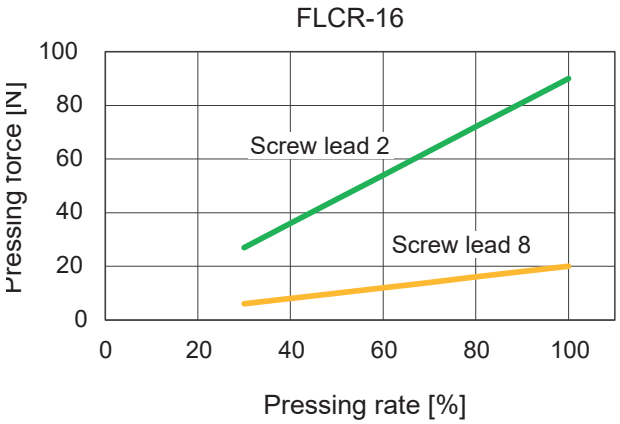


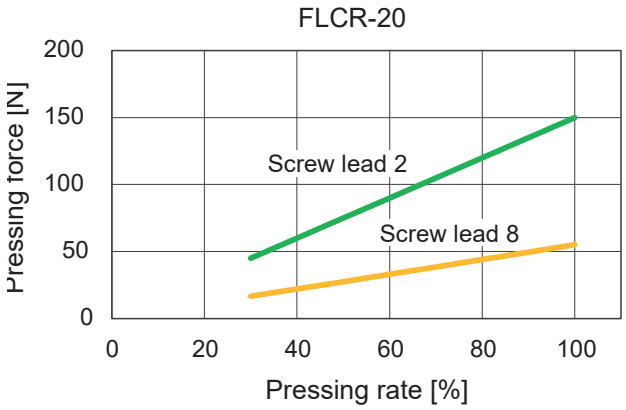
Parallelism of A surface against B surface [mm]

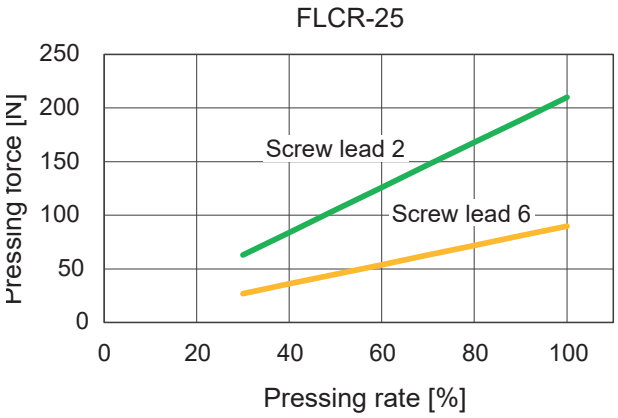
Size	Stroke					
	50	75	100	125	150	200
FLCR-16	0.070	0.105	0.135	0.155	0.185	□
FLCR-20	0.075	0.115	0.140	0.160	0.185	0.200
FLCR-25	0.080	0.110	0.140	0.165	0.190	0.210

*Parallelism with the product fixed to a surface plate.

Pressing force and pressing rate





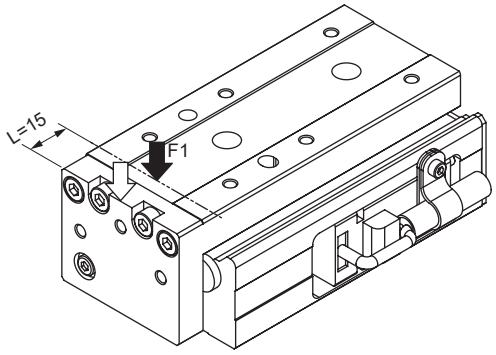


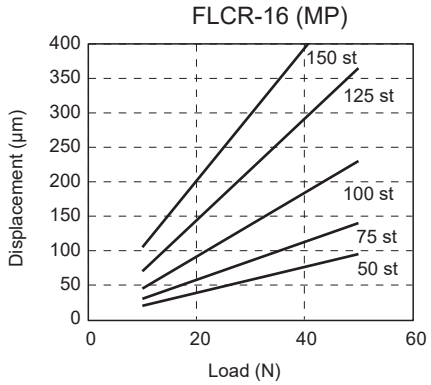
*The pressing force and pressing rate indicate a guideline.
Individual motor differences and variations in mechanical efficiency may result in errors even at the same pressing rate.

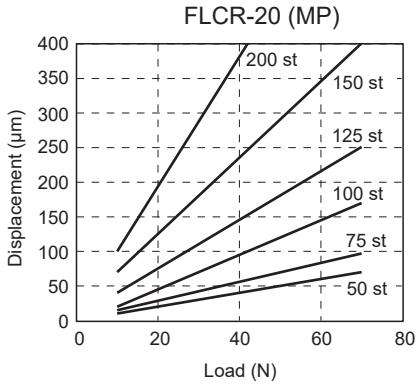
Table deflection *Reference value

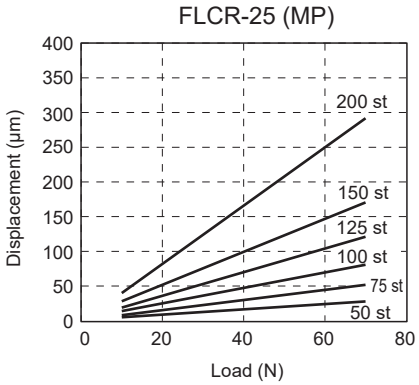
[Table deflection due to pitching moment MP]

Displacement at the table end when load (F1) is applied to the table end



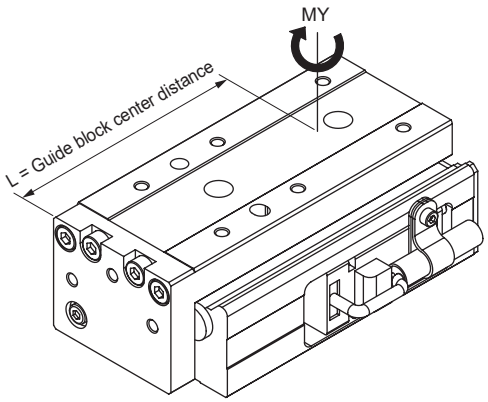


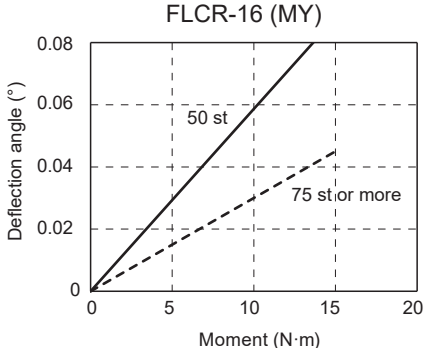


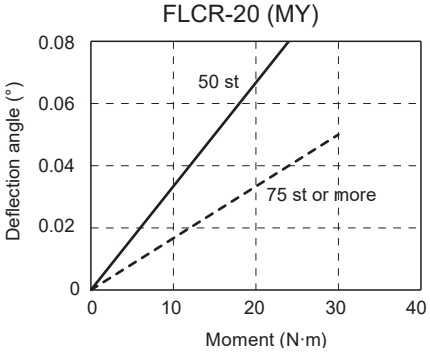


[Table deflection angle due to yawing moment MY]

Table displacement angle when rotation moment (MY) is applied to the table







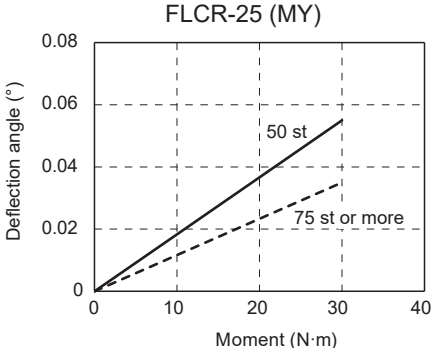
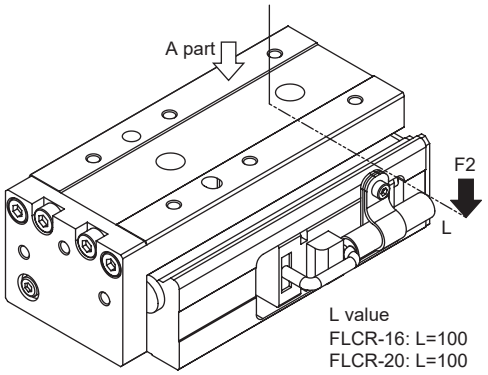


Table deflection *Reference value

[Table deflection due to rolling moment MR]

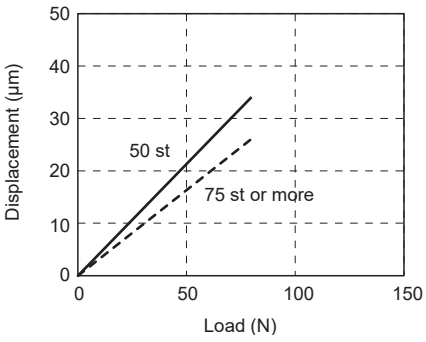
Displacement at the table end (part A) when load (F2) is applied to a position L mm away from the center of the actuator



L value
FLCR-16: L=100
FLCR-20: L=100
FLCR-25: L=200

Measurement is performed with the following shaped plate (material: iron) attached.
w=12, t=19

FLCR-16 (MR)



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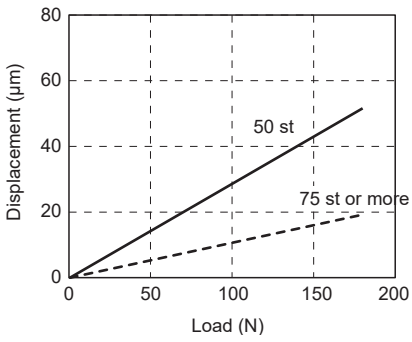
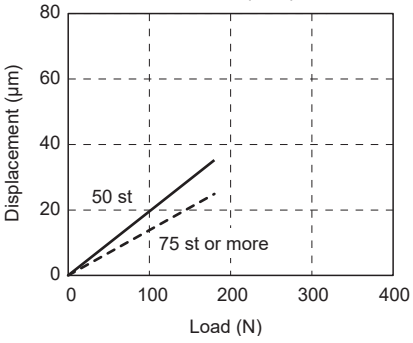


FLCR-25 (MR)



MEMO

Safety Precautions

Always read this section before use.

When designing equipment using electric actuators, the manufacturer is obligated to ensure that the safety of the mechanism and the electrically controlled system are secured.
It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.
Observe warnings and precautions to ensure device safety.
Check that device safety is ensured and a safe device is manufactured.

WARNING

1 This product is designed and manufactured as a general industrial machine part.
It must be handled by an operator having sufficient knowledge and experience in handling.

2 Use the product within specifications range.

This product must be used within its stated specifications. It must not be modified or machined additionally.
This product is intended for use as a device or part for general-purpose industrial machinery. It is not intended for use outdoors (except for outdoor type) or for use under the following conditions or environment.
(Note that this product can be used under the following conditions only when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)

❶ Use for special applications which require the safety, including nuclear energy, railways, aircrafts, marine vessels, vehicles, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency operations (cutoff circuits, opening etc.) circuits, press machines, brake circuits, or safety devices or applications.

❷ Use for applications where life or assets could be adversely affected and special safety measures are required.

3 Observe organization standards and regulations, etc. related to the safety of device design.

4 Never remove devices before confirming safety.

❶ Inspect and service on the machine and devices after confirming safety of the entire system related to this product.

❷ Note that there may be hot or charged sections even after operation is stopped.

❸ When inspecting or maintaining device, be sure to shut down the power supply of the equipment and the relevant power supply, using caution to avoid electric shock.

5 Observe instruction manual and precautions attached the product surely to prevent accidents.

❶ The product could operate unexpectedly during teaching operation or trial operation. Be especially careful not to touch the actuator. If operating the product from a position where the shaft body cannot be seen, be sure to first confirm that the safety is secured even if the actuator moves.

6 Observe precautions to prevent electric shock.

❶ Do not touch the heat sink, cement friction, or motor inside the controller.
These will heat up, and could cause burns. Wait an appropriate amount of time prior to performing inspections or other tasks.
A high voltage is applied until the electrical load stored in the internal capacitors is discharged after the power is turned OFF.
Do not touch for around three minutes after the power OFF.

❷ Make sure to turn the switch on the controller power supply source OFF, before maintenances and inspections.
There is a danger of high voltage electric shocks.

❸ Do not attach or remove connector, while the power is on. Otherwise, this may cause malfunction, failure, or electric shock.

7 Install an overcurrent protector.

The wiring to the driver should be in accordance with JIS B 9960-1:2019 (IEC 60204-1:2016) Safety of Machinery - Electrical Equipment of Machines - Part 1: General Requirements. Install an overcurrent protector (a circuit breaker or circuit protector for wiring) on the main power, control power, and I/O power.

(Reference: JIS B 9960-1 7.2.1 General description)
If there is a possibility the circuit current may exceed the rated value of the component or the allowable current of the conductor, an overcurrent protection must be provided. The details of the ratings or set values to be selected shall be provided in 7.2.10.

8 Observe precautions below to prevent accidents.

■ The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, and when there is a high degree of emergency to a warning.

WARNING: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation.
Every item provides important information and must be observed.

Warranty

1 Warranty period

The product specified herein is warranted for one (1) year from the date of delivery to the location specified by the customer.

2 Warranty coverage

If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD's facilities free of charge.

However, following failures are excluded from this warranty:

1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
3) Failure not caused by the product.
4) Failure caused by use not intended for the product.
5) Failure caused by modifications/alterations or repairs not carried out by CKD.
6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
7) Failure caused by acts of nature and disasters beyond control of CKD.

The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.

Note: For details on the durability and consumable parts, contact your nearest CKD sales office.

3 Compatibility confirmation

The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

4 Range of service

The delivered product price does not include engineer dispatch service fees. Separate fees will be charged in the following cases.

(1) Instruction of installation and adjustment, and presence on test operation
(2) Maintenance and inspection, adjustment, and repair
(3) Technical instructions and technical education (operation, program, wiring method, safety education, etc.)

Precautions for export

Products and related technologies in this catalog
Those of the products and related technologies in this catalog which are subject to US Export Administration Regulations
(EAR) are marked on the product page as "Product subject to the EAR (EAR99) or (EAR99 and 3A991)". For export or provision of products or related technologies subject to EAR regulations, we request that the US Export Administration Regulations (EAR) be observed appropriately.

Safety Precautions

Be sure to read this section before use. Also refer to "Electric actuator controller ECR, ECG Series (Catalog No.CC-1444A)".

IndividualCautions: Electric actuator FLCRSeries

Design / Selection

1. Common

DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a possibility of ignition, combustion or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
Failure to do so may cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix it(including the workpiece).
If the product falls, is knocked over, or experiences malfunction, it may lead to injury. As a rule, fix the product using all mounting holes.

WARNING

■ Use the product in the range of conditions specified for the product.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. For the emergency stop button, use a structure and wiring that will prevent automatic restoration or inadvertent restoration by personnel.

■ If the moving workpiece poses a possible risk to personnel or if fingers could be caught, take safety measures.

■ It may take several seconds to complete an emergency stop, depending on the travel speed and load.

■ If the machine stops in the event of a system failure such as emergency stop or power outage, equipment damage or injury do not occur.Design a safety circuit or device.

■ Install indoors with low humidity.
There is a risk of electric leakage or fire accidents in places exposed to rainwater or where there is high humidity (humidity of 85% or more, condensation). Oil drops and oil mist are also strictly prohibited. Use in such an environment could lead to damage or operation failure.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If electrical leakage occurs, it may lead to electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage temperature: -10°C to 50°C, storage humidity: 35% to 80%, operating ambient temperature: 0°C to 40°C, operating ambient humidity: 35% to 80%) Otherwise, abnormal stopping or decreased product service life may result. Ventilate in locations where heat may build up.

■ Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. Furthermore, chemical resistance has not been reviewed for this product.
Failure to comply may lead to damage, explosion, or combustion.

■ Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
Otherwise, malfunction or damage may result.

■ Take possibility of power source breakdown into consideration.
Take measures to prevent bodily injury or machine damage even in the event of a power failure.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
Design the system so that bodily injury or equipment damage will not occur when restarting. If there is a need to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of power failure of the mounted motor. Take measures to prevent bodily injury or machine damage even in the event of a power failure.

■ Avoid using this product where vibration and impact are present.

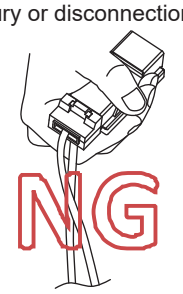
■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ If the actuator is used for other than horizontal installation, select the actuator with brake.
If the motor is not equipped with a brake, the movable parts may fall off at servo OFF (including emergency stops and alarms) or power OFF, which may result in injury or damage to the workpiece.

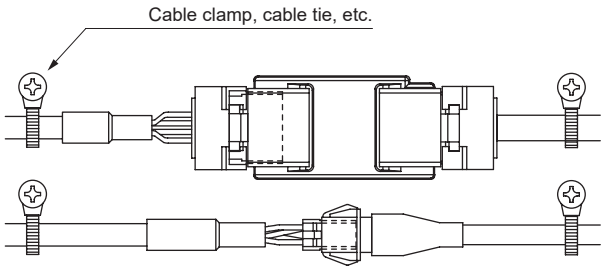
■ The brakes are not sufficient to completely retain the actuator in all situations. Be sure to achieve a balanced state or install a mechanical lock mechanism where safety must be guaranteed, such as when performing maintenance in an application where the table moves with a balanced load or when stopping the machine for a long period of time.

⚠ CAUTION

- Never disassemble or modify the product.
- The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.
- ULUse a Class2 power supply unit conforming to UL1310 for the combination DC power supply.
- Set up the wiring so as not to apply inductive noise.
  Avoid locations where large currents or strong magnetic fields are generated. Do not use the same wiring as any large motor power lines other than that of this product. Do not wire the same as inverter power supplies used for robots, etc. Apply a frame ground for the power supply and insert the filter to the output part.
- Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
  If the power supply is shared, surge current may flow into the output and cause damage. If a separate power supply cannot be used, connect the surge absorber directly to all inductive loads in parallel.
- Select a power supply which provides ample capacity based on the number of installed products. Malfunction may occur if there is no excess capacity.
- Fix the fixing cable so that it does not easily move, as it cannot be used in applications where it is repeatedly bent. For use in locations where repeated bending is performed, use a movable cable.
- Fixed/movable cables should be used with a minimum bend radiusof 63 mm.
  Because the bending radius does not apply to bending of the connector part, we recommend fixing near the connector.
- The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. Be careful with the layout of the external stopper, etc., so that the origin can be properly detected after the power supply is turned ON.
- Use a cable within 10 m to connect the IF connector.
- Select a model that has sufficient power to grip the workpiece weight.
- Select a model that has sufficient opening/closing width for the workpiece size. Fluctuation in the open/close width or the workpiece may cause the gripping position to become unstable. When opening after gripping operation, increase the stroke by an amount corresponding to the backlash.
- Use with a load that does not exceed the specified range. If used outside of the specified range, an excessive eccentric load will be applied to the guide. This can cause chattering in the guide, reduce accuracy, and/or reduce the operating life.
- Do not hold the product's movable parts or cables during transportation and installation.
  This may lead to injury or disconnection.



- Do not move the cable leading out of the actuator. Fix the cable part. Furthermore, use cables with a bending radius of 40 mm or more.



For cautions about mounting, installation, adjustment, use, and maintenance, refer to CKD components Product Site (https://www.ckd.co.jp/kiki/en/) → "Model No." → Instruction Manual

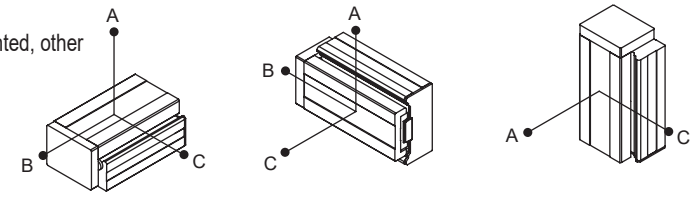
FLCR Series Model Selection Check Sheet →**CKD** (Contact)

Fill in the form and send to the nearest CKD Sales Office. We will respond with the model selection results.

Customer:

Company		Department	
Name		E-mail	
Tel.		Fax	

Selection conditions:

Desired model	
Basic specifications	Max. stroke: mm, ball screw lead: mm
Operating conditions	Travel stroke: mm, travel time: s
	Set speed: mm/s
	Set acceleration/deceleration: mm/s^2(Set acceleration/deceleration time: s)
	Repeatability: ± mm
Load conditions	Load weight: kg
	Mounting orientation: Horizonta, wall mounted, vertical, ceiling mounted, other 
	Center of gravity of load from center of table: Direction A: mm Direction B:: mm Direction C: : mm *B dimension is the distance from the center of the guide block (refer to pages 9, 10).
	Pressing load: No / Yes (N) Operating / Stopped Direction of the force applied to table center ( )
Working environment	Ambient temperature: °C, Ambient humidity: %
	Atmosphere:
Interface specification	Parallel I/O, IO-Link, CC-Link, EtherCAT, EtherNet/IP
Remarks	

Related products

Electric actuator FLSH, FLCR, FGRC Series

Catalog No.CC-1444A

■ 2-Finger Gripper FLSH Series
For soft handling of multi-model workpieces

■ Table type FLCR Series
For short-stroke workpiece transport and positioning

■ Rotary type FGRC Series
For indexing operation and workpiece inversion

■ Controller ECG Series
New Controller with easy inventory management, easy design, and easy configuration

■ Controller ECR Series
Can be connected to any actuator "One controller"

Electric actuator EJSG Series

Catalog No.CC-1569A

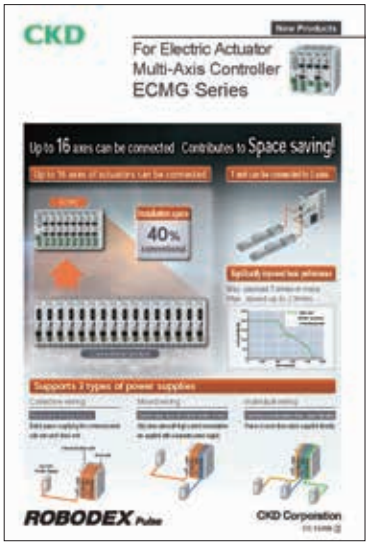
Electric actuator that can be used in various environments

■ Environment-resistant series full-line-up
Five products that pursue ease of use and high rigidity
Standard, Dust-proof, Low dust specifications
Compatible with rechargeable battery manufacturing processes Compatible with food manufacturing processes

■ Compact and highly rigid body
High rigidity and space saving are realized simultaneously with the use of a wide guide that is integrated with the body.

Multi-axis controller for electric actuators ECMG Series

Catalog No.CC-1570A



■ Unit connected multi-axis controller. 2 axes can be connected per unit, space saving
Up to 16 axes of actuators can be connected, reducing installation space by 40% compared to conventional models

■ Significantly improved basic performance
Compared to conventional products, the slider EJSG/EBS-G and rod EBR-G with built-in guide have a maximum load capacity of 5 times and a maximum speed of 2 times.

■ Three types of power supply system adopted
- Central wiring that can reduce the man-hours required for wiring
- Individual wiring method with no restriction on the number of axes by the current value
- Select from batch wiring and individual wiring for a drive unit with high current consumption

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- AUSTIN OFFICE

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2025.5