





Electric Actuators





Simplified Selection Flow Chart

Single Axis Electric Actuator *Series LJ1* (AC Servomotor)

Series	Clean room	Dust seal	Brake	Work load kg	Maximum speed mm/s	Positioning repeatability mm	Lead screw	Guide type	Motor type	Capacity
Horizontal mount specification Series LJ1 	—	●	Without brake	5	300	±0.1	Slide screw	Slider guide	Standard motor [Tamagawa Seiki Co., Ltd.] Non-standard motor [Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation]	50W
	—	●		300	±0.1	100W				
	—	●		10	500	±0.1	Ground ball screw	High rigidity direct acting guide		50W
	●	●		600	±0.05	50W				
	—	●		15	500	±0.1	Slide screw	Slider guide		100W
	—	●		20	300	±0.1				200W
	●	●		High rigidity direct acting guide	30	500	±0.02	Ground ball screw		100W
	●	●				500	±0.05	Rolled ball screw		100W
	—	●			1000	±0.1	Slide screw	200W		
	●	●			1000	±0.02	Ground ball screw	100W		
	●	●			1000	±0.05	Rolled ball screw	100W		
	●	●			60	1000	±0.02	Ground ball screw		200W
	●	●		1000	±0.05	Rolled ball screw	200W			
	Vertical mount specification Series LJ1 	●		●	With brake	5	400	±0.02		Ground ball screw
●		●	±0.05	Rolled ball screw		100W				
●		●	8	500		±0.02	Ground ball screw	100W		
●		●	±0.05	Rolled ball screw		100W				
●		●	10	600		±0.02	Ground ball screw	100W		
●		●	±0.05	Rolled ball screw		100W				
●		●	15	250		±0.02	Ground ball screw	100W		
●		●	±0.05	Rolled ball screw		100W				
●		●	20	500		±0.02	Ground ball screw	200W		
●		●	±0.05	Rolled ball screw		200W				

Low Profile Single Axis Electric Actuator *Series LG1* (AC Servomotor)

Series	Clean room	Dust seal	Brake	Work load kg	Maximum speed mm/s	Positioning repeatability mm	Lead screw	Guide type	Motor type	Capacity
Without coupling/ Horizontal mount specification Series LG1 	—	—	Without brake	15	500	±0.1	Slide screw	High rigidity direct acting guide	Standard motor [Tamagawa Seiki Co., Ltd.]	100W
	—	—		±0.02	Ground ball screw	100W				
	—	—		30	±0.05	Rolled ball screw	100W			
	—	—		1000	±0.02	Ground ball screw	100W			
	—	—		±0.05	Rolled ball screw	100W				
With coupling/ Horizontal mount specification Series LG1 	—	—	Without brake	15	500	±0.1	Slide screw	High rigidity direct acting guide	Standard motor [Tamagawa Seiki Co., Ltd.] Non-standard motor [Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation]	100W
	—	—		±0.02	Ground ball screw	100W				
	—	—		30	500	±0.05	Rolled ball screw			100W
	—	—		1000	±0.02	Ground ball screw	100W			
	—	—		±0.05	Rolled ball screw	100W				

Simplified Selection Flow Chart *Series LJ1/LG1*

Standard stroke (mm) and Speed (mm/s)												Model	Page					
100	200	300	400	500	600	700	800	900	1000	1200	1500		Standard motor	Non-standard motor	Clean room	Dust seal	TSUBAKI CABLE/ET OR	Deflection
to 300												LJ1S101□SC	88	94	—	116	128	146
to 300												LJ1S202□SC	90	96	—	118	130	
to 500												LJ1H101□SC	6	48	—	110	122	145
to 600												LJ1H101□PB	2	44	104			
to 600												LJ1H101□NB	4	46	—	112	124	
to 500												LJ1H202□SC	16	58	—	120	132	146
to 300 to 300 to 300												LJ1S303□SC	92	98	—	112	124	
to 500												LJ1H202□PA	8	50	106	112	124	
to 500												LJ1H202□NA	12	54	—	114	126	
to 500 to 500 to 500												LJ1H303□SE	22	64	—	106	112	124
to 1000 to 930 to 740 to 600 to 500												LJ1H202□PC	10	52	106	112	124	
to 1000 to 930 to 740 to 600 to 500												LJ1H202□NC	14	56	—	108	114	126
to 1000 to 1000 to 1000 to 700 to 500												LJ1H303□PD	18	60	108	114	126	
to 1000 to 1000 to 1000 to 700 to 500												LJ1H303□ND	20	62	—	—	—	
to 400												LJ1H102□PH-□K	24	66	104	110	—	
to 400												LJ1H102□NH-□K	28	70	—	—	—	
to 500												LJ1H202□PA-□K	34	76	106	112	—	
to 500												LJ1H202□NA-□K	38	80	—	—	—	
to 600												LJ1H102□PB-□K	26	68	104	110	—	
to 600												LJ1H102□NB-□K	30	72	—	—	—	
to 250												LJ1H202□PF-□K	32	74	106	112	—	
to 250												LJ1H202□NF-□K	36	78	—	—	—	
to 500												LJ1H303□PA-□K	40	82	108	114	—	
to 500												LJ1H303□NA-□K	42	84	—	—	—	

Standard stroke (mm) and Speed (mm/s)												Model	Page		
100	200	300	400	500	600	700	800	900	1000	1200	1500		Standard motor	Non-standard motor	Deflection
to 500												LG1□H202□SC	156	—	183
to 500												LG1□H202□PA	148	—	
to 500												LG1□H202□NA	152	—	
to 1000 to 930 to 740 to 600 to 500												LG1□H202□PC	150	—	
to 1000 to 930 to 740 to 600 to 500												LG1□H202□NC	154	—	
to 500												LG1□H212□SC	166	176	183
to 500												LG1□H212□PA	158	168	
to 500												LG1□H212□NA	162	172	
to 1000 to 930 to 740 to 600 to 500												LG1□H212□PC	160	170	
to 1000 to 930 to 740 to 600 to 500												LG1□H212□NC	164	174	

Simplified Selection Flow Chart

Short Stroke Type Electric Actuator *Series LX* (Stepper Motor)

Series	Low particulate generation	Brake	Work load kg	Maximum speed mm/s	Positioning repeatability mm	Lead screw	Guide type	Motor	
								Manufacturer	
Low profile slide table type Series LXF	—	Without motor brake	2	200	±0.05	Slide screw	Direct acting guide	Sanyo Denki Co., Ltd.	
	●		30	Ball screw					
	●		3	80		Slide screw			
	—		4	100					
Guide rod type Series LXP	—	Without motor brake	2	200	±0.05	Slide screw	Ball bushing guide	Sanyo Denki Co., Ltd.	
	—		3	200					
	—		4	100					
	●		30	Ball screw					
	●		6	80		Slide screw			
	●		100						
	—	With motor brake	2	200	±0.05	Slide screw			
	—		3	200		Slide screw			
	—		4	100					
	●		30	Ball screw					
	●		5	80		Slide screw			
	●		100						
High rigidity slide table type Series LXS	—	Without motor brake	3	200	±0.05	Slide screw	High rigidity direct acting guide	Sanyo Denki Co., Ltd.	
	—		4.5	200					
	—		6	100					
	—		9	100					
	●		30	Ball screw					
	●		10	80		Slide screw			
	—	With motor brake	1	200	±0.05	Slide screw			
	—		2	200					
	—		4	100					
	●		30	Ball screw					
	●		5	80		Slide screw			
	●		100						

Short Stroke Type Electric Actuator *Series LX* (AC Servomotor)

Series	Low particulate generation	Brake	Work load kg	Maximum speed mm/s	Positioning repeatability mm	Lead screw	Guide type	Motor	
								Manufacturer	
Series LXF	—	Without motor brake	3	50	±0.03	Ball screw	Direct acting guide	Tamagawa Seiki Co., Ltd.	
	—		100						
Series LXP	—	Without motor brake	6	50	±0.03	Ball screw	Ball bushing guide	Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation	
	—		100						
	—	With motor brake	5	50					
	—		100						
Series LXS	—	Without motor brake	10	50	±0.03	Ball screw	High rigidity direct acting guide	Note) Series LXF is only compatible with motors manufactured by Mitsubishi Electric Corporation.	
	—		100						
	—	With motor brake	5	50					
	—		100						

Simplified Selection Flow Chart **Series LX**

Phases	Standard stroke (mm) and (Maximum speed (mm/s))								Model	Page			
	25	50	75	100	125	150	175	200		Standard	CE marking	Low particulate generation	Deflection
5 phase	to 200								LXFH5SB	216	282	—	304
5 phase	to 30								LXFH5BC	210	—	294	
5 phase	to 80								LXFH5BD	212	—	—	
5 phase	to 100								LXFH5SA	214	282	—	
5 phase	to 200								LXPB5SB	240	—	—	304
2 phase	to 200								LXPB2SB	224	284	—	
5 phase	to 100								LXPB5SA	238	—	—	
2 phase	to 30								LXPB2BC	218	—	—	
5 phase	to 30								LXPB5BC	234	—	294	
2 phase	to 80								LXPB2BD	220	—	—	
5 phase	to 80								LXPB5BD	236	—	—	
2 phase	to 100								LXPB2SA	222	—	—	
5 phase	to 200								LXPB5SB-□B	248	284	—	
2 phase	to 200								LXPB2SB-□B	232	—	—	
5 phase	to 100								LXPB5SA-□B	246	—	—	
2 phase	to 30								LXPB2BC-□B	226	—	—	
5 phase	to 30								LXPB5BC-□B	242	—	294	
2 phase	to 80								LXPB2BD-□B	228	—	—	
5 phase	to 80								LXPB5BD-□B	244	—	—	
2 phase	to 100								LXPB2SA-□B	230	284	—	
5 phase	to 200								LXSH5SB	272	—	—	304
2 phase	to 200								LXSH2SB	256	286	—	
5 phase	to 100								LXSH5SA	270	—	—	
2 phase	to 100								LXSH2SA	254	—	—	
5 phase	to 30								LXSH5BC	266	—	—	
2 phase	to 30								LXSH2BC	250	—	294	
5 phase	to 80								LXSH5BD	268	—	—	
2 phase	to 80								LXSH2BD	252	—	—	
5 phase	to 200								LXSH5SB-□B	280	—	—	
2 phase	to 200								LXSH2SB-□B	264	286	—	
5 phase	to 100								LXSH5SA-□B	278	—	—	
2 phase	to 100								LXSH2SA-□B	262	—	—	
5 phase	to 30								LXSH5BC-□B	274	—	—	
2 phase	to 30								LXSH2BC-□B	258	—	294	
5 phase	to 80								LXSH5BD-□B	276	—	—	
2 phase	to 80								LXSH2BD-□B	260	—	—	

Capacity	Standard stroke (mm) and (Maximum speed (mm/s))								Model	Page	
	25	50	75	100	125	150	175	200		Standard	Deflection
30W	to 50								LXFHABC	288	304
	to 100								LXPBABC		
	to 50								LXPBABC	290	304
	to 100								LXPBABD		
	to 50								LXPBABC-□B		
	to 100								LXPBABD-□B		
	to 50								LXSHABC	292	304
	to 100								LXSHABD		
	to 50								LXSHABC-□B		
	to 100								LXSHABD-□B		

Line-up of Products

Single Axis Electric Actuator

Series LJ1

LJ1H/High Rigidity Guide **P. 1**

LJ1S/Slider Guide **P. 87**

Horizontal mount specification



Vertical mount specification



Horizontal mount specification



Clean Room Specification

LJ1H **P. 104**



Dust Seal Specification

LJ1H **P. 110**
LJ1S



TSUBAKI CABLEVEYOR Specification

LJ1H **P. 122**
LJ1S



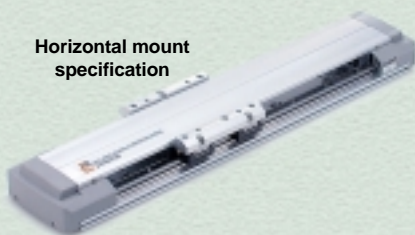
Low Profile Electric Actuator

Series LG1

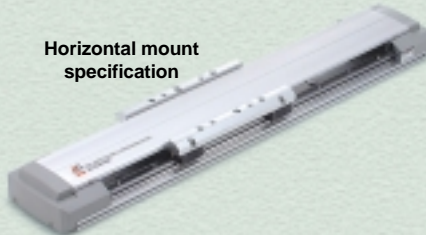
LG1□H20/Without Coupling **P. 148**

LG1□H21/With Coupling **P. 158**

Horizontal mount specification



Horizontal mount specification



Dedicated AC Servomotor Controller Driver for Non-standard Motor

Series LC1

P. 185



Teaching Box

P. 196



P. 205



Regenerative Absorption Unit

Series LC7R

P. 200



Short Stroke Electric Actuator

Series LX

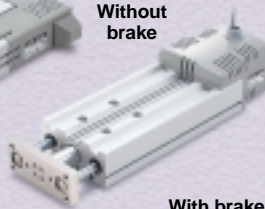
Stepper motor

Low Profile Slide Table
Series LXF P. 210



Without
brake

Guide Rod Type
Series LXP P. 218



Without
brake

With brake

High Rigidity Slide Table Type
Series LXS P. 250



Without
brake

With brake



CE Marking **P. 282**
Series LXF
Series LXP
Series LXS

Low Particulate
Generation Specification **P. 294**
Series LXF
Series LXP
Series LXS

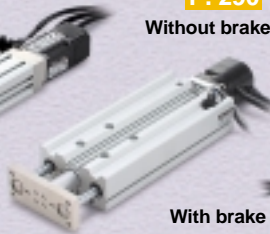
AC servomotor

Series LXF P. 288



Without brake

Series LXP P. 290



Without brake

With brake

Series LXS P. 292



Without brake

With brake



Stepper Motor Driver
Series LC6D
P. 306



Positioning Driver
Series LC6C
P. 309



Teaching Box
P. 313



Single Axis Electric Actuator

Series LJ1

Two Types of Guide and Three Types of Lead Screw

LJ1H/High Rigidity Direct Acting Guide LJ1S/Slider Guide



Positioning accuracy

• Work load

Slider guide	5 to 20kg
High rigidity direct acting guide	10 to 60kg

LJ1H
High rigidity direct acting guide + Ground ball screw

• Positioning repeatability

Slide screw	±0.1mm
Rolled ball screw	±0.05mm
Ground ball screw	±0.02mm

LJ1H
High rigidity direct acting guide + Rolled ball screw

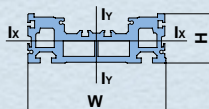
LJ1S
Slider guide + Slide screw

LJ1H
High rigidity direct acting guide + Slide screw

Low ← Work load/Allowable moment → High

High rigidity

High rigidity achieved by the use of a hollow box type aluminum construction.



	Model	Sectional secondary moment			W	H
		lx	ly			
Linear guide	LJ1H10□□	7	48	70	24.7	
	LJ1H20□□	40	374	122	44.8	
	LJ1H30□□	84	836	151	55	
Slider guide	LJ1S10□□	15	52	70	36	
	LJ1S20□□	60	402	122	56.3	
	LJ1S30□□	177	1000	151	73.3	

Low noise (slide screw type)

Slide screw + Slider guide: 47dB (LJ1S)
Slide screw + Linear guide: 53dB (LJ1H)

Cable entry is possible from 5 directions

Secure locking (vertical mount specification)

Lead screw is securely locked on the opposite side of the motor.

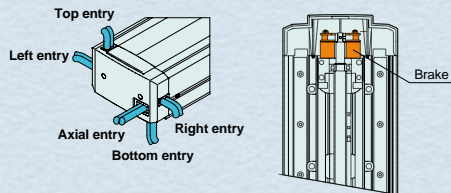
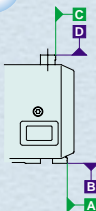


Table traveling accuracy

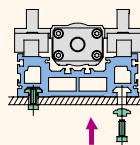


Model	Traveling accuracy	
	C side against A side	D side against B side
LJ1H10	0.07 or less	0.07 or less
LJ1H20	0.06 or less	0.03 or less
LJ1H30	0.03 or less	0.09 or less
LJ1S10	0.015 or less	0.12 or less
LJ1S20	0.1 or less	0.1 or less
LJ1S30	0.1 or less	0.1 or less

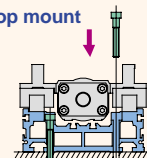
Two mounting styles

T-slots enable highly flexible mounting.

Bottom mount



Top mount



(Except LJ1H10/LJ1S10)

Variations

Series	Motor type	Guide type	Mounting orientation	Lead screw type	Made to order
LJ1H10	Standard motor [Tamagawa Seiki Co., Ltd.]	High rigidity direct acting guide	Horizontal Vertical	Ground ball screw Rolled ball screw Slide screw	Clean room Dust cover TSUBAKI CABLEVEYOR
LJ1H20					
LJ1H30					
LJ1S10	Non-standard motor [Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation]	Slider guide	Horizontal	Slide screw	Dust cover TSUBAKI CABLEVEYOR
LJ1S20					
LJ1S30					

Series LG1

Low Profile/Non-coupling Type with Reduced Height and Length

Low profile: **55mm** (35mm less than LJ1H20)



Reduced length (62mm shorter than LJ1H20 with coupling and 300mm stroke)



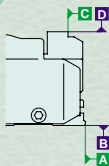
Series with coupling available

Can be used for non-standard motor mounting.

Two types of body material

In addition to aluminum frames, stainless steel frames are available for customers requiring more rigidity.

Table traveling accuracy

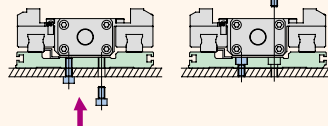


Model	Traveling accuracy	
	C side against A side	D side against B side
LG1H	0.1 or less	0.1 or less

Two mounting styles

Bottom mount

Top mount



Variations

Series	Motor/Screw connection	Motor type		Guide type	Mounting orientation	Lead screw type
LG1□H20	Without coupling	Standard motor [Tamagawa Seiki Co., Ltd.]		High rigidity direct acting guide	Horizontal	Ground ball screw Rolled ball screw Slide screw
LG1□H21	With coupling	Standard motor [Tamagawa Seiki Co., Ltd.]	Non-standard motor [Matsushita Electric Industrial Co., Ltd.] [Mitsubishi Electric Corporation] [Yaskawa Electric Corporation]			

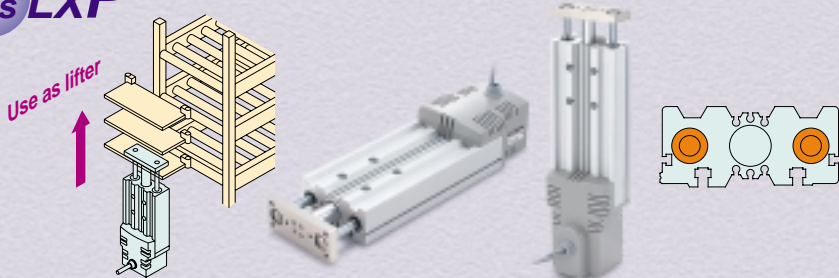
Series LX

Short Stroke Type with Three Guide Variations

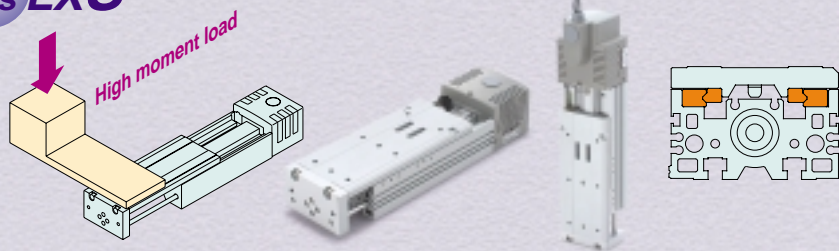
Series LXF Low profile slide table type with stepper motor



Series LXP Guide rod type with stepper motor



Series LXS High rigidity slide table type with stepper motor



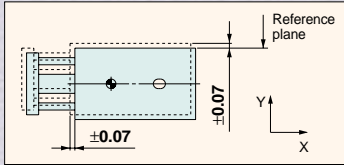
AC servomotor specification/Made to Order

CE marking
available as standard

Series LXF
Series LXP
Series LXS



Improved body mounting accuracy: ± 0.07 mm

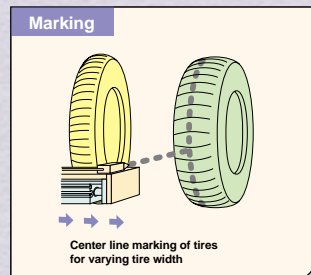
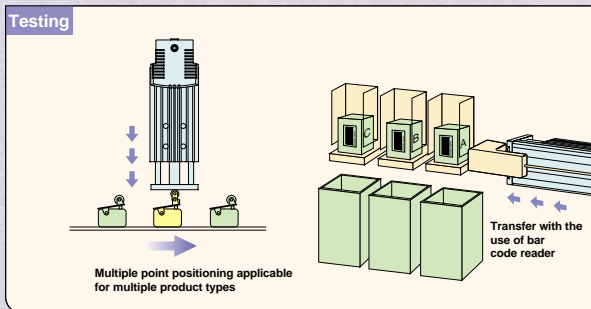
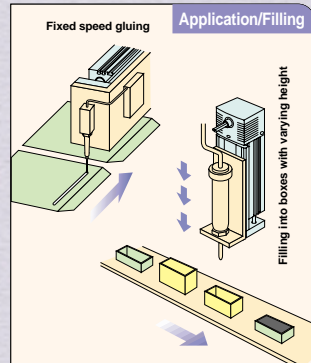
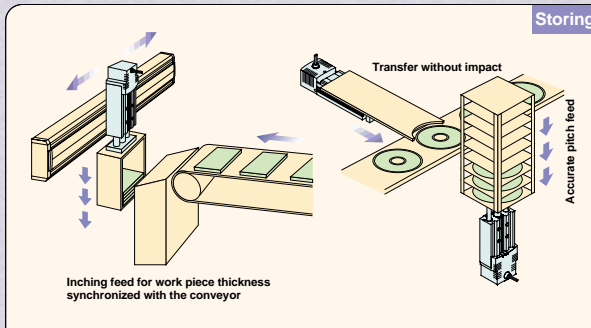


An NC machined reference plane and positioning pin hole provided on each series body improves the repeatability of actuator body mounting.

Variations

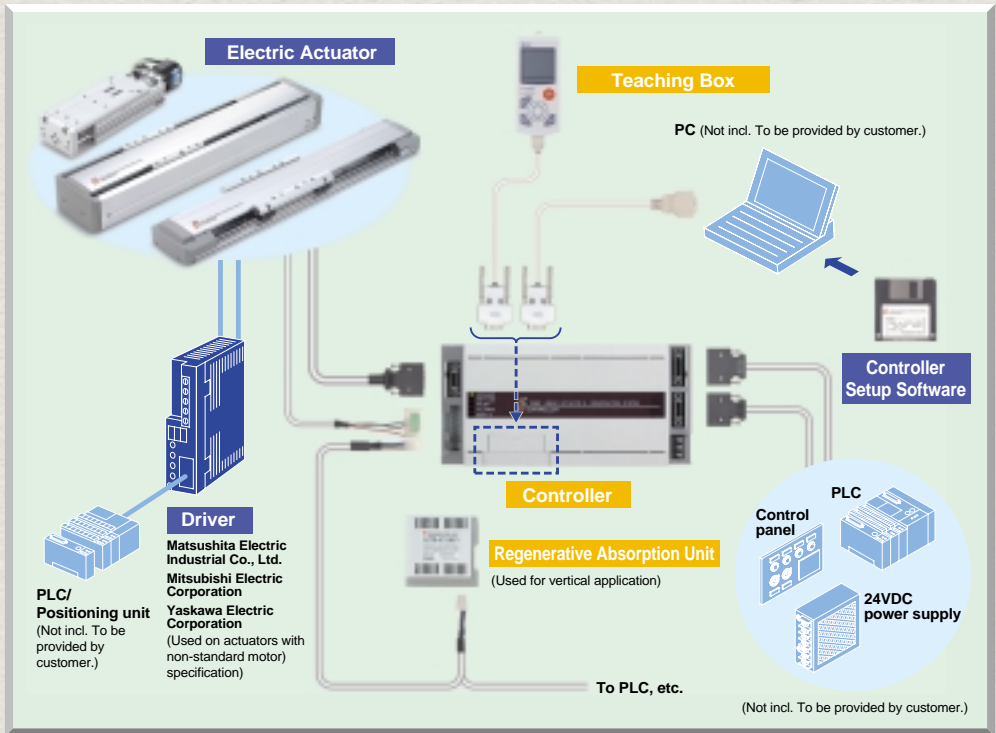
Series	Motor type (Stepper motor)	Guide type	Mounting orientation	Lead screw type	Sensor	Made to order
LXF	5 phase	Direct acting guide	Horizontal	Ball screw Slide screw	Auto switch Proximity switch	AC servomotor specification
LXP	2 phase 5 phase	Ball bushing	Horizontal		Auto switch	Low particulate generation specification
LXS		High rigidity direct acting guide	Vertical		Auto switch Proximity switch	

Applications



Series LC1

Standard Dedicated AC Servomotor Controller



Controller with built-in driver

Programming support function

Controller Setup Software

Programming, operation, test operation, parameter setting, alarm reset, monitor function, JOG teaching, direct teaching (LC1-1-W□ only)

Teaching Box (LC1-1-T1)

Programming, operation, parameter setting, alarm reset, monitor function (except I/O), JOG teaching

Regenerative Absorption Unit

Series LC7R

- Absorbs the energy (regenerative energy) generated by deceleration of a standard motor with vertical mounting
- Prevents driver power troubles inside the controller (for LC1 only)
- DIN rail mount

Program capacity

127 steps x 8 programs

General purpose input/output 6 points each

External input operation (control panel, PLC)

Program operation and step operation

• Program operation

Operation of full programs is possible/Continuous step operation

• Step operation

Individual step operation is possible/Step by step operation/Actuator control commands (ASET, MOVA, MOVI) only

Non-standard motor compatible drivers

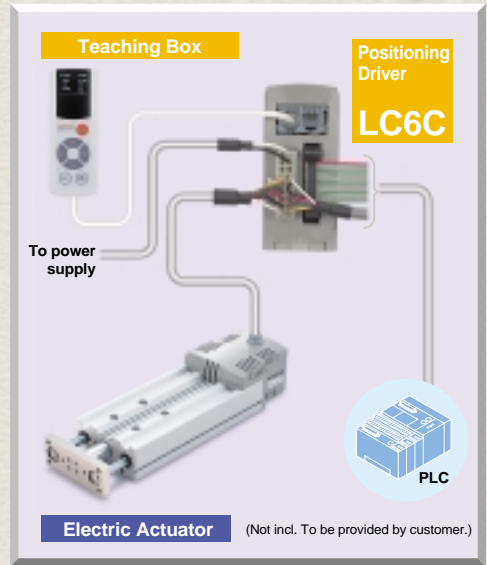
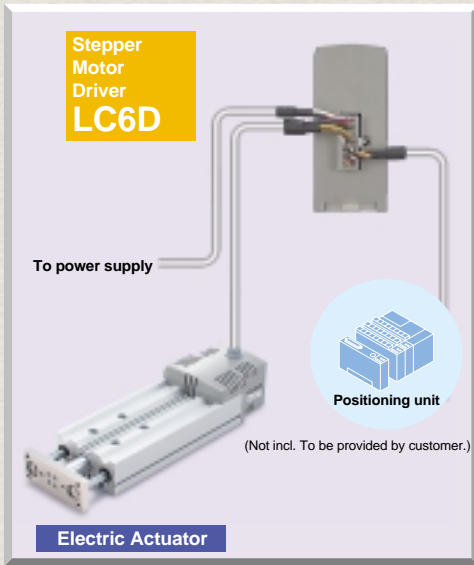
- Included with non-standard motor specification electric actuators
- Drivers by Mitsubishi Electric Industrial Co., Ltd., Mitsubishi Electric Corporation, and Yaskawa Electric Corporation are available.

Series LX Dedicated Stepper Motor Driver & Positioning Driver Series LC6D/LC6C



Series LC6D

Series LC6C



DIN rail mount

Controls positioning by pulse signals

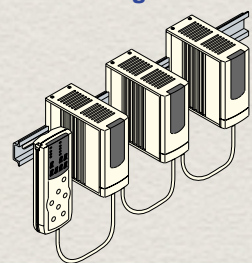
The driver can be controlled by general purpose positioning unit or controller.

With built-in positioning (pulse) output function
Movement pattern can be directly specified by PLC.

Reduces design requirements
Eliminates the selection and arrangement of a positioning (pulse) unit by the customer

Space saving
Allows the reduction of PLC side installation space
{ Positioning driver dimensions are the same }
{ as the driver (LC6D). }

Maximum of 16 units can be set with one teaching box.



Electric Actuator

Series LJ1

Series LG1

Series LX



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Single Acting Electric Actuator Series LJ1

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LJ1

Low Profile Electric Actuator Series LG1

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LG1

Dedicated AC Servomotor Controller Series LC1

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LC1

Short Stroke Electric Actuator Series LX

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LX

Stepper Motor Driver/Positioning Driver Series LC6D/LC6C

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LC6D/LC6C

Switches

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Switches



Single Axis Electric Actuator Series **LJ1H** High Rigidity Direct Acting Guide

Series	Motor type	Guide type	Mounting orientation	Model	Lead screw lead mm			Page
					Ground ball screw	Rolled ball screw	Slide screw	
LJ1H	Standard motor	High rigidity direct acting guide	Horizontal	LJ1H10	12	12	20	2
				LJ1H20	10 20	10 20	20	8
				LJ1H30	25	25	40	18
			Vertical	LJ1H10	8 12	8 12		24
				LJ1H20	5 10	5 10		32
				LJ1H30	10	10		40
	Non-standard motor	High rigidity direct acting guide	Horizontal	LJ1H10	12	12	20	44
				LJ1H20	10 20	10 20	20	50
				LJ1H30	25	25	40	60
			Vertical	LJ1H10	8 12	8 12		66
				LJ1H20	5 10	5 10		74
				LJ1H30	10	10		82

■ Options	Page 100
■ Made to Order	101
• Clean room specification	104
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• TSUBAKI CABLEVEYOR specification	122
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■ Mounting	140
■ Non-standard Motor Mounting	143
■ Deflection Data	145

Part Number Designations

LJ1 H 10 G 1 1 N B - 100 - F W - X10

Guide type
H High rigidity direct acting guide

Series
10 Series 10
20 Series 20
30 Series 30

Motor specification
Nil Standard motor
G Matsushita Electric Industrial Co., Ltd.
R Mitsubishi Electric Corporation
Y Yaskawa Electric Corporation

Motor output
1 50W
2 100W
3 200W

Power supply voltage
1 100/110VAC 50/60Hz
2 200/220VAC 50/60Hz
3 200/230VAC 50/60Hz
0 Without motor

Lead screw type
P Ground ball screw
N Rolled ball screw
S Slide screw

Stroke
H 8mm
B 12mm
C 20mm
F 5mm
A 10mm
D 25mm
E 40mm

Lead screw lead
H 8mm
B 12mm
C 20mm
F 5mm
A 10mm
D 25mm
E 40mm

Cable entry direction
F Axial
R Right
L Left
T Top
B Bottom

Limit switch
Nil None
W B contact specification 2 pcs.

Brake
Nil None
K With brake

Cable length
2 2m
3 3m
4 4m
5 5m

X10 Non-standard motor

The tables above show the definition for each symbol only and cannot be used for actual model selection.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1H101 **1** **PB** — **Stroke** — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

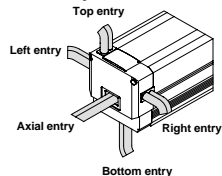
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	
Performance	Body weight	kg		5.2	6.0	6.8	7.5	8.3	
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg		10					
	Rated thrust	N		74					
	Maximum speed	mm/s		600					
	Positioning repeatability	mm		±0.02					
Main parts	Motor	AC servomotor (50W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅12mm, 12mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Controller	Model	LC1-1B1H□□□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1011PB-150-F2-X2

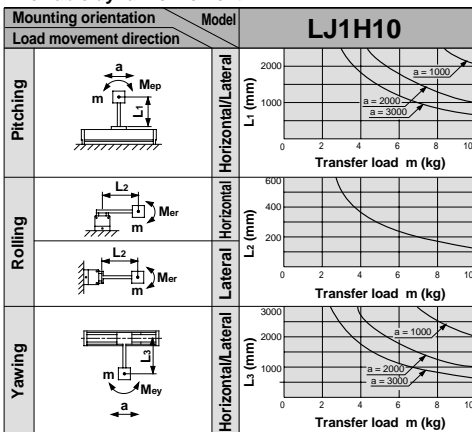
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

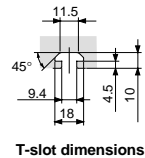
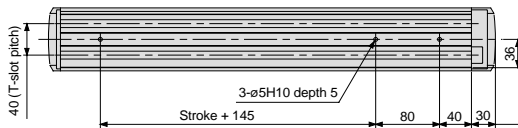
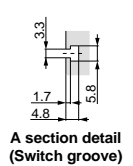
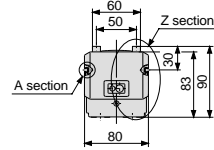
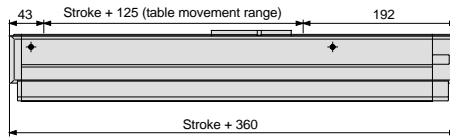
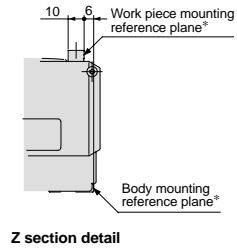
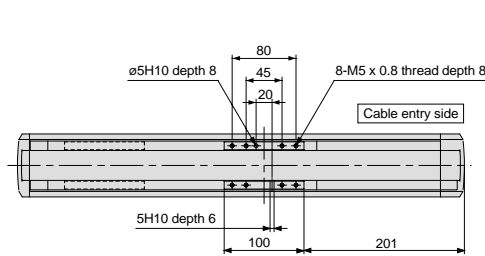
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H10□PB

Scale: 15%

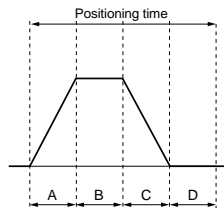


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor

Horizontal Mount

Series LJ1H10

Motor Output
50W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
ø12mm/12mm lead

How to Order

LJ1H101 **1** **NB** — **Stroke** — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

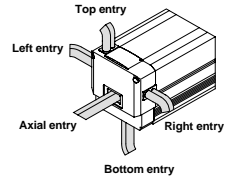
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	
Performance	Body weight	kg		5.2	6.0	6.8	7.5	8.3	
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg		10					
	Rated thrust	N		74					
	Maximum speed	mm/s		600					
	Positioning repeatability	mm		±0.05					
Main parts	Motor	AC servomotor (50W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ø12mm, 12mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Controller	Model	LC1-1B1H□-□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1011NB-150-F2-X2

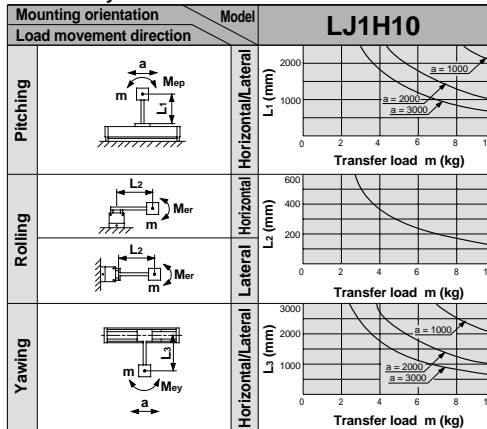
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

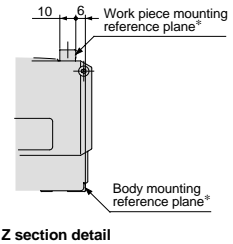
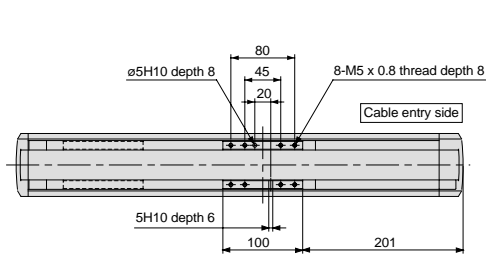
Allowable dynamic moment



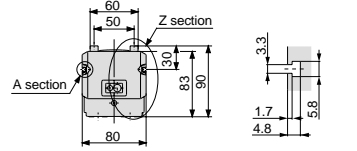
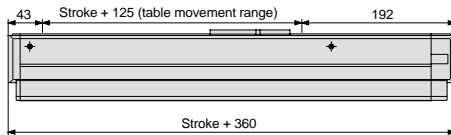
Refer to page 145 for deflection data.

Dimensions/LJ1H101□NB

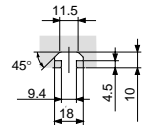
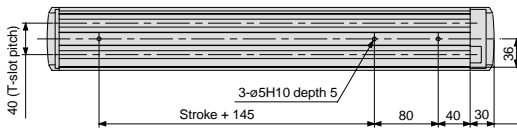
Scale: 15%



Z section detail



A section detail (Switch groove)



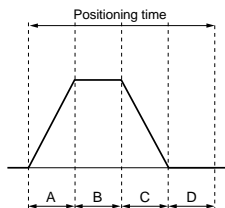
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor

Horizontal Mount

Series LJ1H10

Motor Output
50W

High Rigidity
Direct Acting
Guide

Slide Screw
∅20mm/20mm lead

How to Order

LJ1H101 **1** **SC** — **Stroke** — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

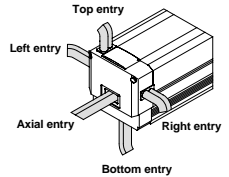
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.3	6.2	7.2	8.0	8.8	9.7	10.5	11.3	12.2	13.0
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	10									
	Rated thrust	N	24									
	Maximum speed	mm/s	500									
Main parts	Positioning repeatability	mm	±0.1									
	Motor		AC servomotor (50W)									
	Encoder		Incremental system									
	Lead screw		Slide screw ∅20mm, 20mm lead									
	Guide		High rigidity direct acting guide									
Controller	Motor/Screw connection		With coupling									
	Model		LC1-1B1M□-□□ (Refer to page 185 for details.)									

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550, 650, 750, 850, 950
Example) LJ1H1011SC-150-F2-X2

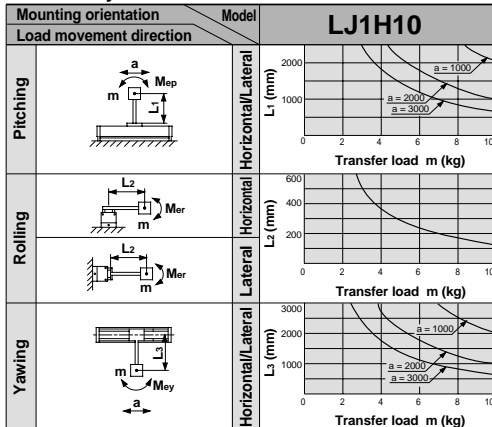
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

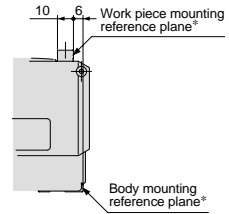
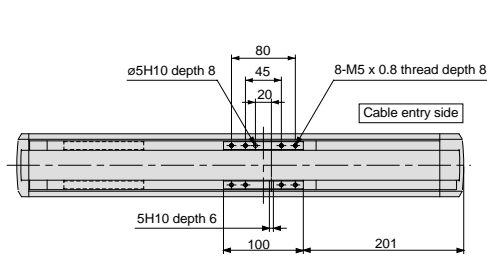
Allowable dynamic moment



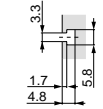
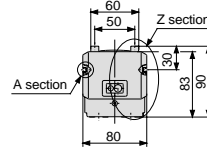
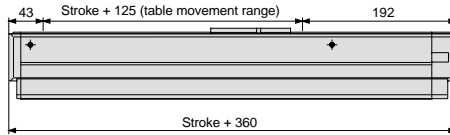
Refer to page 145 for deflection data.

Dimensions/LJ1H10□SC

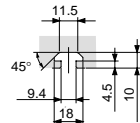
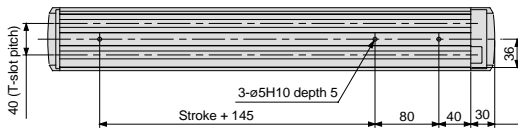
Scale: 15%



Z section detail



A section detail (Switch groove)



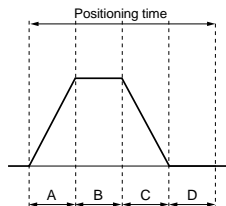
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.4	10.4	50.4	100.4
	100	0.4	0.5	1.4	5.4	10.4
	250	0.4	0.5	0.9	2.5	4.5
	500	0.4	0.5	0.8	1.6	2.6

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 2000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1H202 **1** **PA** — **Stroke** — **F** **2**

Power supply voltage

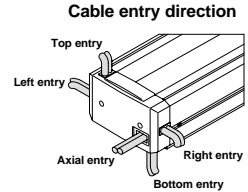
1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m



Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		7.7	8.9	10.1	11.2	12.6	13.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ø15mm, 10mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Controller	Model	LC1-1B2H□□□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550
Example) **LJ1H2021PA-150-F2-X2**

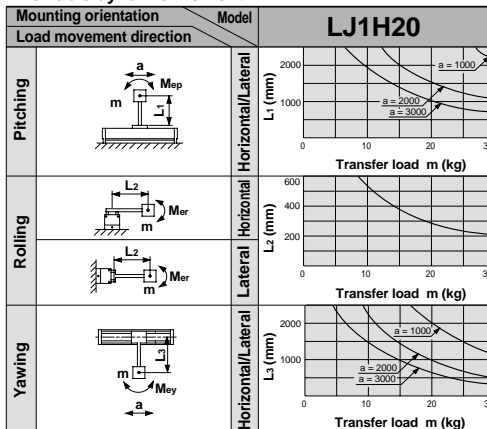
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

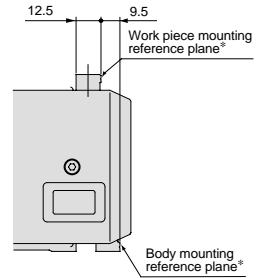
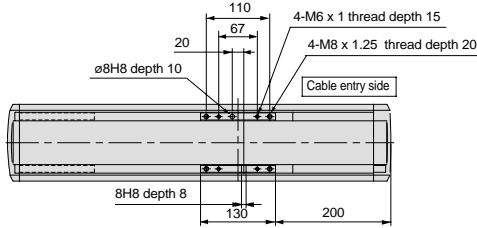
Allowable dynamic moment



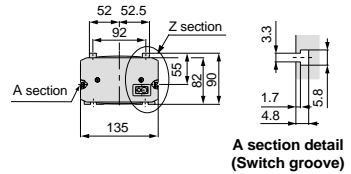
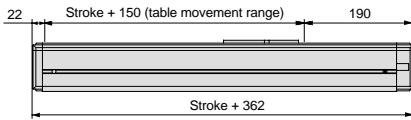
Refer to page 145 for deflection data.

Dimensions/LJ1H20□PA

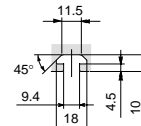
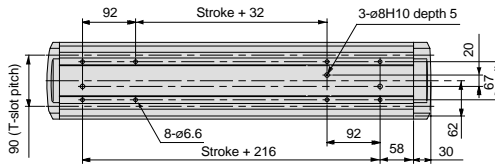
Scale: 10%



Z section detail



A section detail (Switch groove)



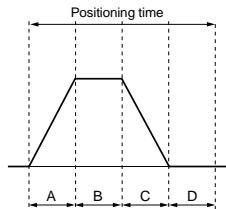
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor
Horizontal Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅15mm/20mm lead

How to Order

LJ1H202 1 PC Stroke F 2

Power supply voltage

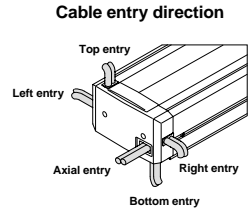
1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m



Specifications

Standard stroke		mm	500	600	700	800	900	1000
Performance	Body weight	kg	12.6	13.7	14.5	15.3	17.2	18.6
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Rated thrust	N	90					
	Maximum speed (Note)	mm/s	1000	1000	930	740	600	500
Main parts	Positioning repeatability	mm	±0.02					
	Motor		AC servomotor (100W)					
	Encoder		Incremental system					
	Lead screw		Ground ball screw ∅15mm, 20mm lead					
	Guide		High rigidity direct acting guide					
Controller	Motor/Screw connection		With coupling					
	Model		LC1-1B2H□□□□ (Refer to page 185 for details.)					

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 550, 650, 750, 850, 950
Example) **LJ1H2021PC-550-F2-X2**

(Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

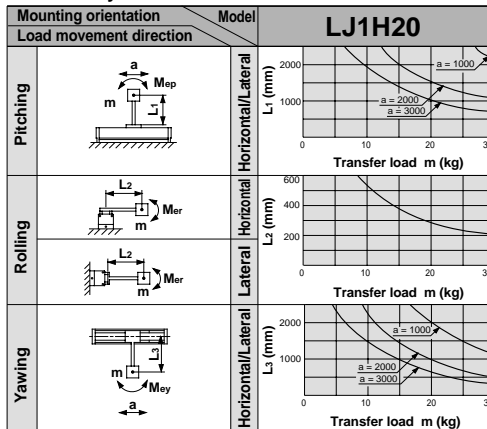
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

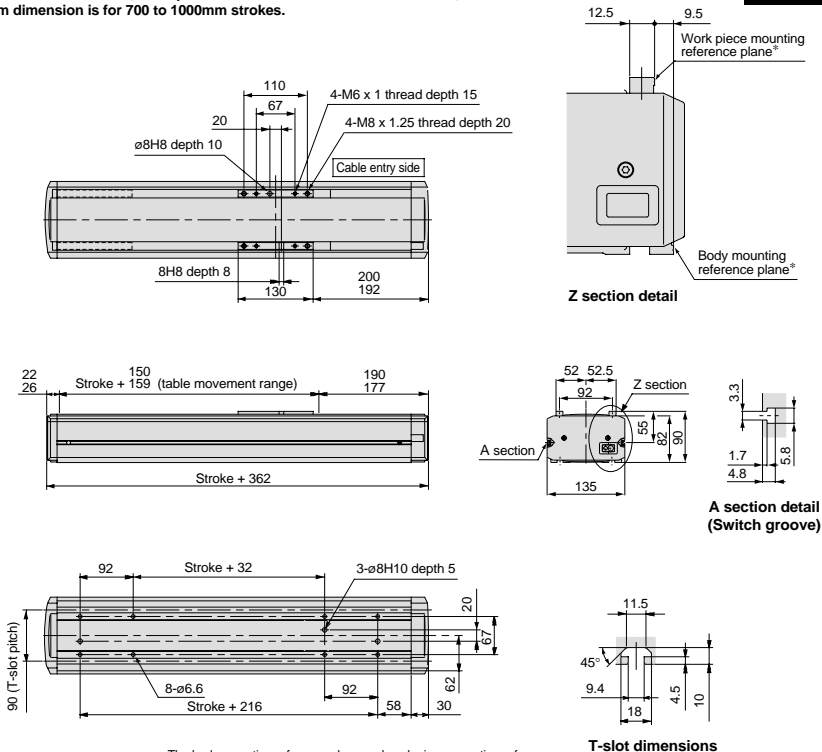


Refer to page 145 for deflection data.

Dimensions/LJ1H20□PC

When two dimensions are shown, the top dimension is for 500 and 600mm strokes, and the bottom dimension is for 700 to 1000mm strokes.

Scale: 10%

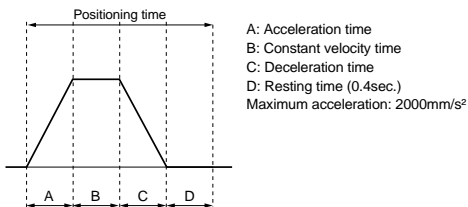


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	500	1000	
Speed (mm/s)	10	0.6	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LJ1H20□PC-500-□□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1B2H1-□□
LJ1H20□PC-600-□□	1000	700	500	500	
LJ1H20□PC-700-□□	930	600	500	500	
LJ1H20□PC-800-□□	740	600	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1B2H2-□□
LJ1H20□PC-900-□□	600	500	500	500	
LJ1H20□PC-1000-□□	500	500	500	500	

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor
Horizontal Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅15mm/10mm lead

How to Order

LJ1H202 **1** **NA** — **Stroke** — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

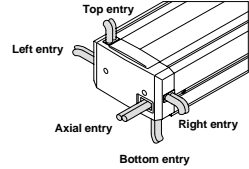
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600
Performance	Body weight	kg	7.7	8.9	10.1	11.2	12.6	13.7
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Rated thrust	N	180					
	Maximum speed	mm/s	500					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅15mm, 10mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Controller	Model	LC1-1B2H□□□□ (Refer to page 185 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550
Example) LJ1H2021NA-150-F2-X2

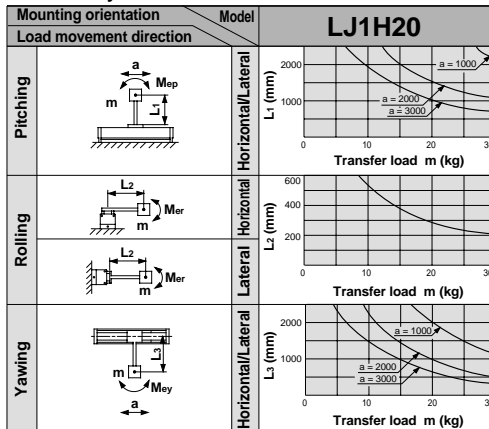
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

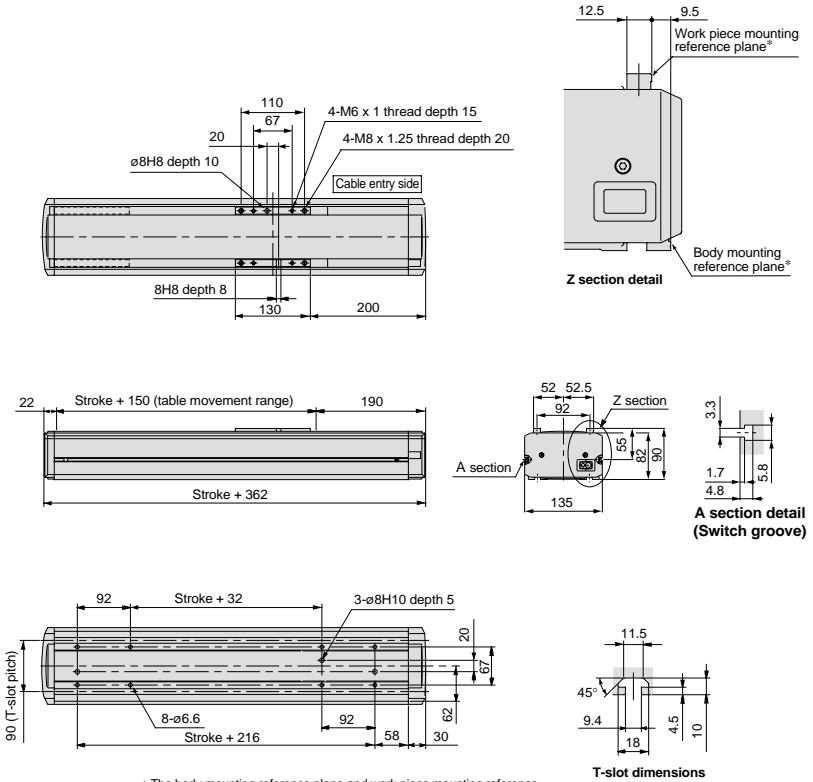
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H20□NA

Scale: 10%

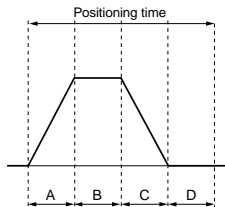


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)					
		1	10	100	300	600	
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4	
	100	0.5	0.6	1.5	3.5	6.5	
	250	0.5	0.6	0.9	1.7	2.9	
	500	0.5	0.6	0.8	1.2	1.8	

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor
Horizontal Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅15mm/20mm lead

How to Order

LJ1H202 **1** **NC** — **Stroke** — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

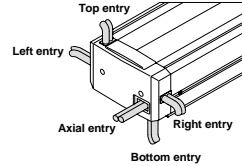
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	500	600	700	800	900	1000
Performance	Body weight	kg	12.6	13.7	14.5	15.3	17.2	18.6
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Rated thrust	N	90					
	Maximum speed ^(Note)	mm/s	1000	1000	930	740	600	500
Positioning repeatability		mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅15mm, 20mm lead						
	Guide	High rigidity direct acting guide						
Motor/Screw connection		With coupling						
Controller	Model	LC1-1B2H□-□□ (Refer to page 185 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number. Applicable strokes: 550, 650, 750, 850, 950
Example) LJ1H2021NC-550-F2-X2

(Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

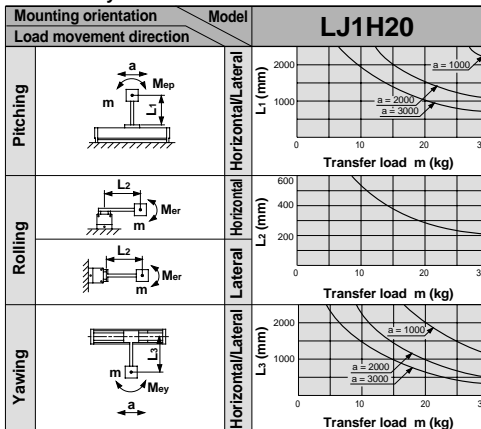
Allowable Moment (N.m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



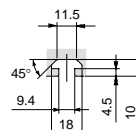
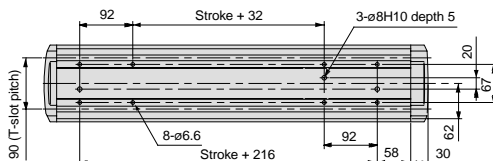
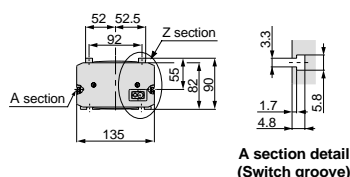
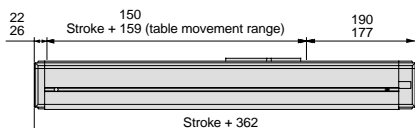
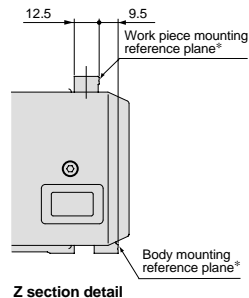
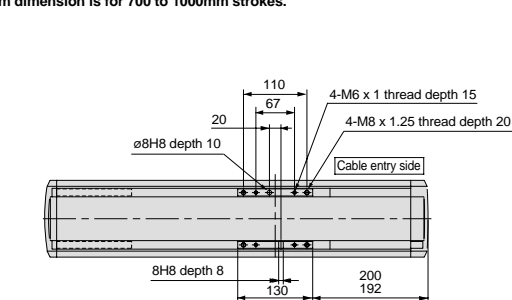
Refer to page 145 for deflection data.

Standard Motor/Horizontal Mount Specification *Series LJ1H20*

Dimensions/LJ1H20□NC

When two dimensions are shown, the top dimension is for 500 and 600mm strokes, and the bottom dimension is for 700 to 1000mm strokes.

Scale: 10%



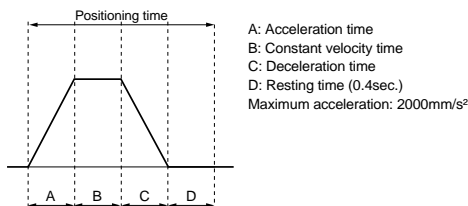
* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

T-slot dimensions

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LJ1H20□NC-500-□□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1B2H1-□□
LJ1H20□NC-600-□□	1000	700	500	500	
LJ1H20□NC-700-□□	930	600	500	500	
LJ1H20□NC-800-□□	740	600	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1B2H2-□□
LJ1H20□NC-900-□□	600	500	500	500	
LJ1H20□NC-1000-□□	500	500	500	500	

How to Order

LJ1H202 1 SC — Stroke — **F 2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

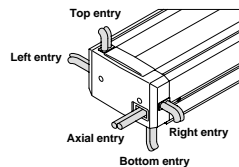
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight	kg		9.0	10.0	11.1	12.2	13.3	14.3	15.3	17.2	19.1	20.6	24.7
	Operating temperature range	°C	5 to 40 (with no condensation)											
	Work load	kg	15											
	Rated thrust	N	50											
	Maximum speed	mm/s	500											
Main parts	Positioning repeatability	mm	±0.1											
	Motor	AC servomotor (100W)												
	Encoder	Incremental system												
	Lead screw	Slide screw ∅20mm, 20mm lead												
	Guide	High rigidity direct acting guide												
Controller	Motor/Screw connection	With coupling												
	Model	LC1-1B2M□-□□ (Refer to page 185 for details.)												

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550, 650, 750, 850, 950
Example) **LJ1H2021SC-150-F2-X2**

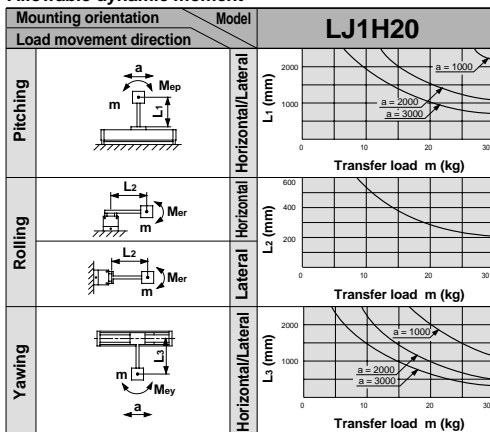
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

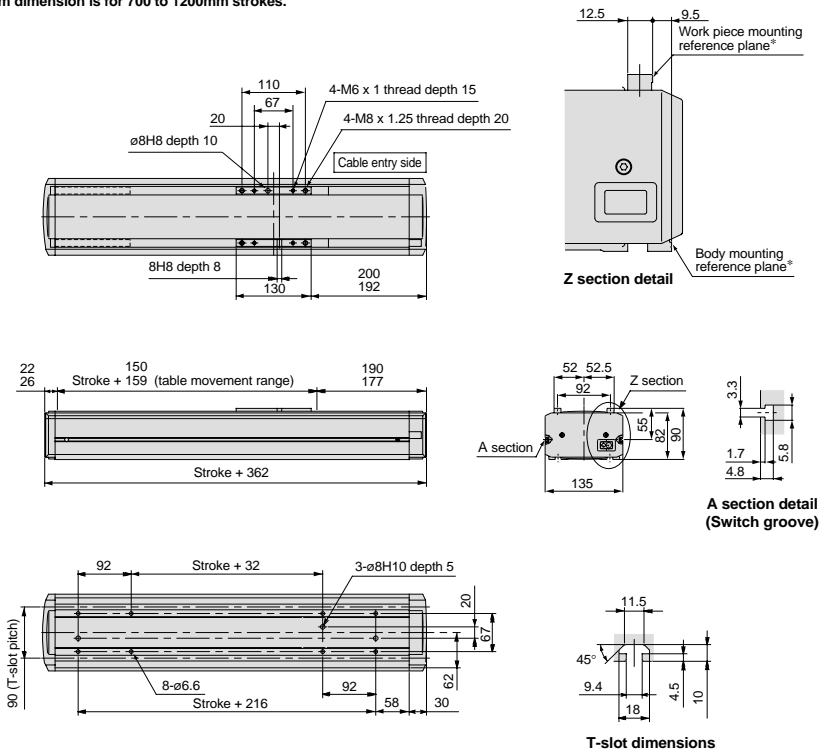


Refer to page 145 for deflection data.

Dimensions/LJ1H20□SC

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes.

Scale: 10%

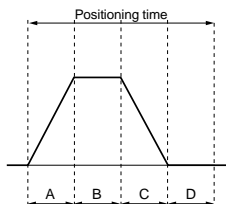


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	600	1200
Speed (mm/s)	10	0.6	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	250	0.5	0.6	1.0	3.0	5.4
	500	0.5	0.6	0.9	1.9	3.1

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 2000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor

Horizontal Mount

Series LJ1H30

Motor Output

200W

High Rigidity
Direct Acting
Guide

Ground Ball Screw

∅25mm/25mm lead

How to Order

LJ1H303 1 PD Stroke F 2

Power supply voltage

1	100/110VAC (50/60Hz)
2	200VAC (50/60Hz)

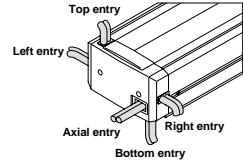
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight	kg	16.0	18.0	20.0	22.0	24.0	28.5	33.0	37.0	43.0
	Operating temperature range	°C	5 to 40 (with no condensation)								
	Work load	kg	60								
	Rated thrust	N	144								
	Maximum speed ^{Note)}	mm/s	1000							700	500
Main parts	Positioning repeatability	mm	±0.02								
	Motor	AC servomotor (200W)									
	Encoder	Incremental system									
	Lead screw	Ground ball screw ∅25mm, 25mm lead									
	Guide	High rigidity direct acting guide									
Controller	Motor/Screw connection	With coupling									
	Model	LC1-1B3H□-□□ (Refer to page 185 for details.)									

Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550, 650, 700, 750, 850, 900, 950, 1050, 1100, 1150, 1250, 1300, 1350, 1400, 1450
Example) LJ1H3031PD-250-F2-X2

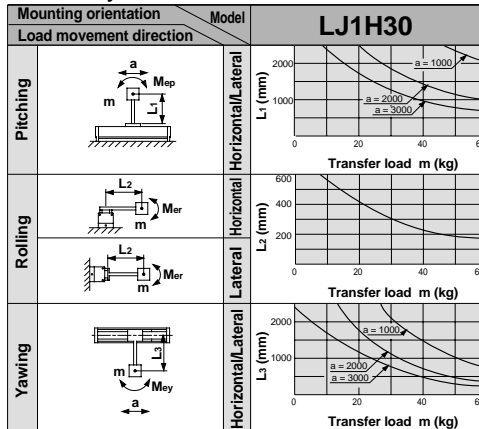
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

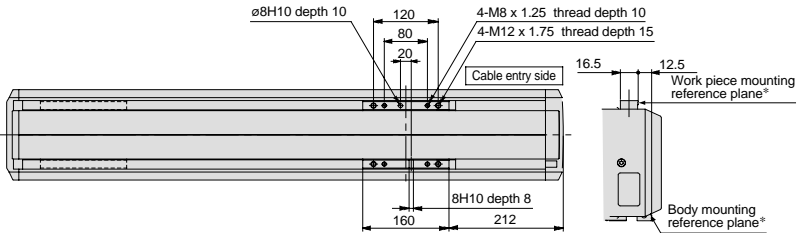
Allowable dynamic moment



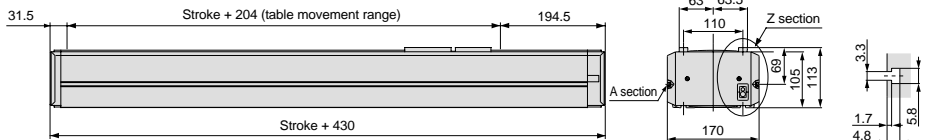
Refer to page 145 for deflection data.

Dimensions/LJ1H30□PD

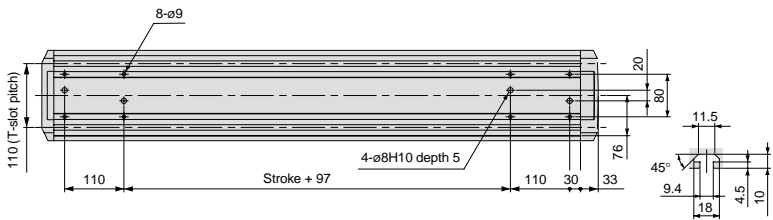
Scale: 10%



Z section detail



A section detail (Switch groove)



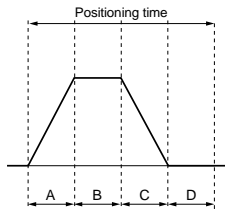
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)					
Positioning distance (mm)		1	10	100	750	1500	
Speed (mm/s)	10	1.1	2.0	11.0	76.0	151.0	
	100	1.1	1.2	2.1	8.6	16.1	
	500	1.1	1.2	1.4	2.7	4.2	
	1000	1.1	1.2	1.4	2.1	2.9	

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (1.0sec.)
 Maximum acceleration: 3000mm/s²

Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)						Note
	10	20	30	40	50	60	
LJ1H3031PD-200 to 1000-□□	1000	1000	1000	1000	900	800	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1B3H1-□□
LJ1H3031PD-1200-□□	700	700	700	700	700	700	
LJ1H3031PD-1500-□□	500	500	500	500	500	500	Power supply: 200(V)AC ±10% Compatible controller: LC1-1B3H2-□□
LJ1H3032PD-200 to 1000-□□	1000	900	800	700	650	600	
LJ1H3032PD-1200-□□	700	700	700	700	650	600	
LJ1H3032PD-1500-□□	500	500	500	500	500	500	

* Consult SMC if outside of the above conditions.

Standard Motor

Horizontal Mount

Series LJ1H30

Motor Output

200W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅25mm/25mm lead

How to Order

LJ1H303 1 ND Stroke F 2

Power supply voltage

1	100/110VAC (50/60Hz)
2	200VAC (50/60Hz)

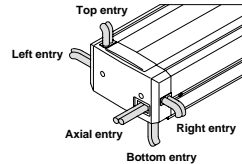
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

	Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500	
Performance	Body weight	kg	16.0	18.0	20.0	22.0	24.0	28.5	33.0	37.0	43.0	
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	60									
	Rated thrust	N	144									
	Maximum speed (Note)	mm/s	1000								700	500
Main parts	Positioning repeatability	mm	±0.05									
	Motor		AC servomotor (200W)									
	Encoder		Incremental system									
	Lead screw		Rolled ball screw ∅25mm, 25mm lead									
	Guide		High rigidity direct acting guide									
Controller	Motor/Screw connection		With coupling									
	Model		LC1-1B3H□-□□ (Refer to page 185 for details.)									

Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550, 650, 700, 750, 850, 900, 950, 1050, 1100, 1150, 1250, 1300, 1350, 1400, 1450
Example) LJ1H3031ND-250-F2-X2

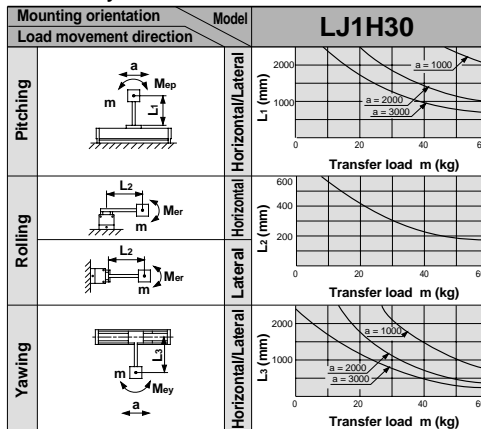
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

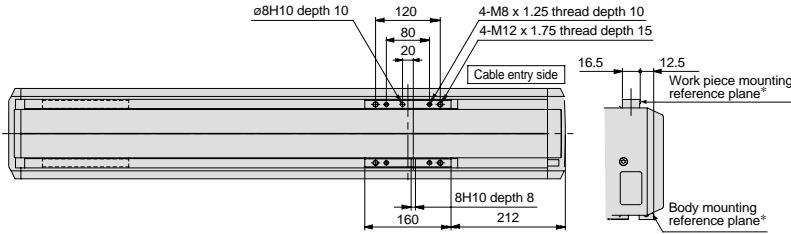
Allowable dynamic moment



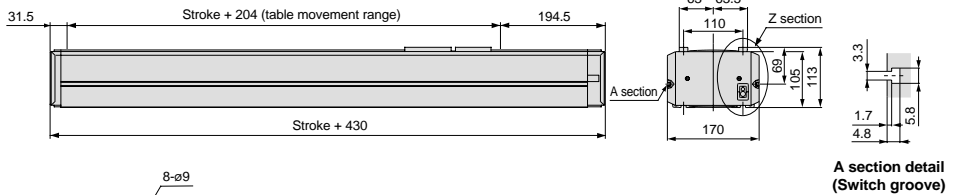
Refer to page 145 for deflection data.

Dimensions/LJ1H303□ND

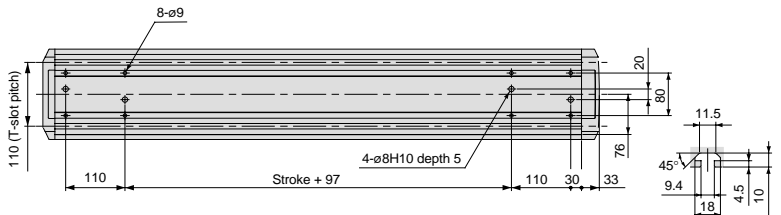
Scale: 10%



Z section detail



A section detail (Switch groove)



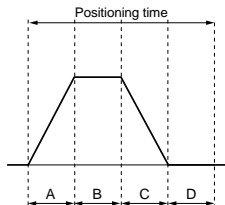
* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

T-slot dimensions

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	750	1500
Speed (mm/s)	10	1.1	2.0	11.0	76.0	151.0
	100	1.1	1.2	2.1	8.6	16.1
	500	1.1	1.2	1.4	2.7	4.2
	1000	1.1	1.2	1.4	2.1	2.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (1.0sec.)
Maximum acceleration: 3000mm/s²

Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)						Note
	10	20	30	40	50	60	
LJ1H3031ND-200 to 1000-□□	1000	1000	1000	1000	900	800	Power supply: 100/110(V)AC $\pm 10\%$ Compatible controller: LC1-1B3H1-□□
LJ1H3031ND-1200-□□	700	700	700	700	700	700	
LJ1H3031ND-1500-□□	500	500	500	500	500	500	
LJ1H3032ND-200 to 1000-□□	1000	900	800	700	650	600	Power supply: 200(V)AC $\pm 10\%$ Compatible controller: LC1-1B3H2-□□
LJ1H3032ND-1200-□□	700	700	700	700	650	600	
LJ1H3032ND-1500-□□	500	500	500	500	500	500	

* Consult SMC if outside of the above conditions.

Standard Motor

Horizontal Mount

Series LJ1H30

Motor Output

200W

High Rigidity
Direct Acting
Guide

Slide Screw

∅30mm/40mm lead

How to Order

LJ1H303 1 SE Stroke F 2

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

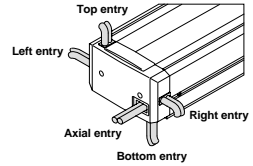
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight	kg		14.9	17.0	19.0	21.1	23.2	27.3	31.5	35.6	41.9
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	30									
	Rated thrust	N	50									
	Maximum speed	mm/s	500									
Main parts	Motor	AC servomotor (200W)										
	Encoder	Incremental system										
	Lead screw	Slide screw ∅30mm, 40mm lead										
	Guide	High rigidity direct acting guide										
	Motor/Screw connection	With coupling										
Controller	Model	LC1-1B3M□□□ (Refer to page 185 for details.)										

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550, 650, 700, 750, 850, 900, 950, 1050, 1100, 1150, 1250, 1300, 1350, 1400, 1450
Example) LJ1H3031SE-250-F2-X2

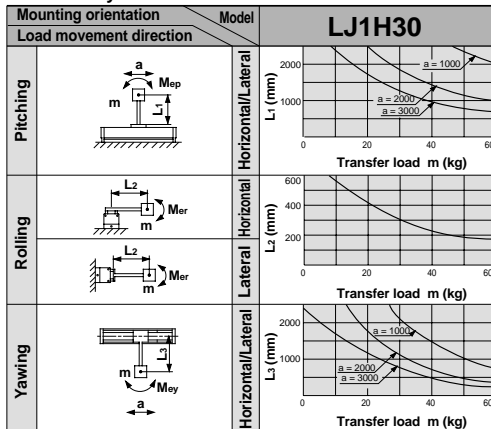
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

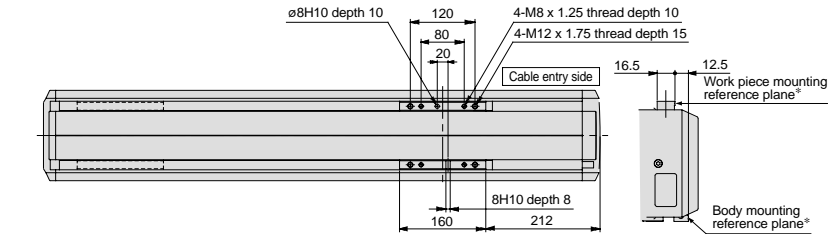
Allowable dynamic moment



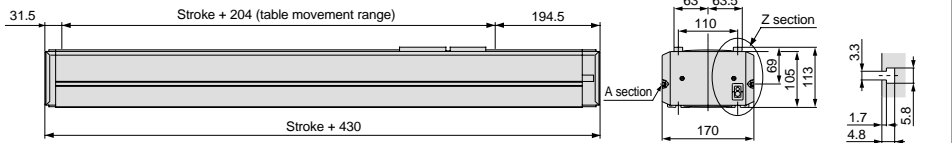
Refer to page 145 for deflection data.

Dimensions/LJ1H30□SE

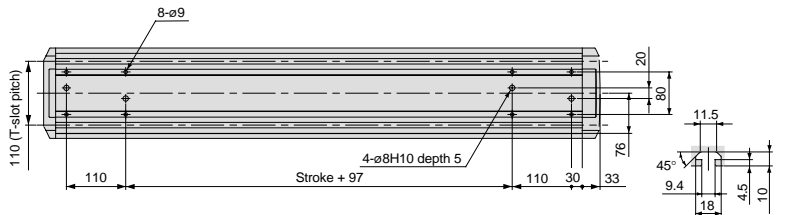
Scale: 10%



Z section detail



A section detail (Switch groove)



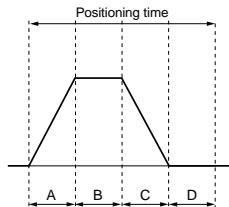
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	750	1500
Speed (mm/s)	10	1.2	2.1	11.1	76.1	151.1
	100	1.1	1.2	2.1	8.6	16.1
	250	1.1	1.2	1.6	4.2	7.2
	500	1.1	1.2	1.5	2.8	4.3

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (1.0sec.)
 Maximum acceleration: 2000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H10

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅12mm/8mm lead

How to Order

LJ1H102 **1** **PH** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

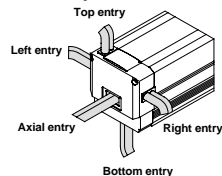
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight	kg		5.5	6.3	7.1	7.8	8.6
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10					
	Rated thrust	N	225					
	Maximum speed	mm/s	400					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅12mm, 8mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Controller	Model	LC1-1B1VH□□□□ (Refer to page 185 for details.)						
Regenerative absorption unit	Model	LC7R-K1□A□□□ (Refer to page 200 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1021PH-150K-F2-X2

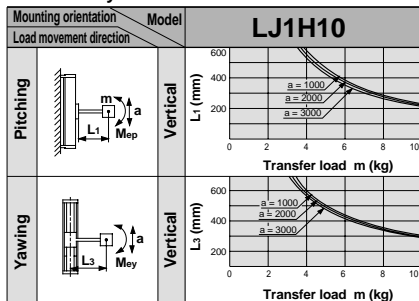
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

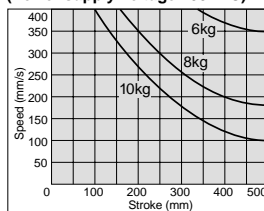
Allowable dynamic moment



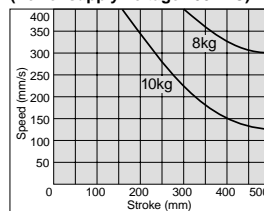
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H1021PH-□□□K
(Power supply voltage 100VAC)



LJ1H1022PH-□□□K
(Power supply voltage 200VAC)



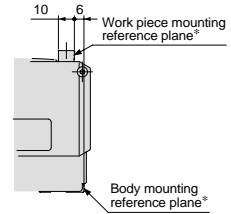
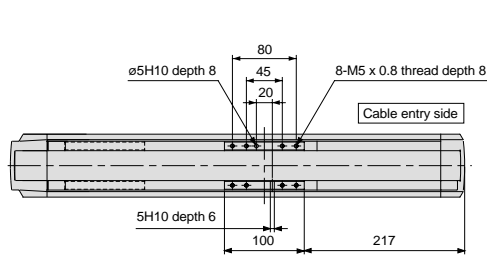
When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.

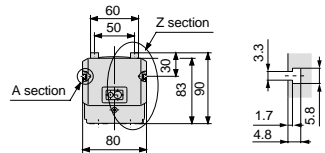
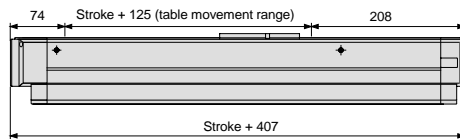
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H102□PH

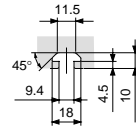
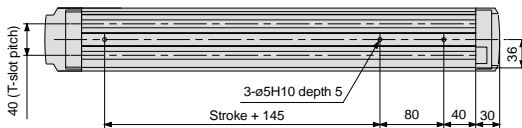
Scale: 15%



Z section detail



A section detail (Switch groove)



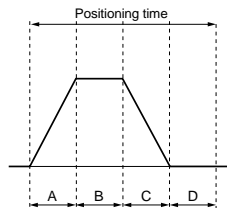
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	200	0.4	0.5	0.9	1.7	2.9
	400	0.4	0.5	0.7	1.1	1.7

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H10

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅12mm/12mm lead

How to Order

LJ1H102 **1** **PB** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

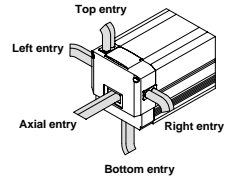
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500
Performance	Body weight	kg	5.5	6.3	7.1	7.8	8.6
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	5				
	Rated thrust	N	150				
	Maximum speed	mm/s	600				
Main parts	Positioning repeatability	mm	±0.02				
	Motor		AC servomotor (100W)				
	Encoder		Incremental system				
	Lead screw		Ground ball screw ∅12mm, 12mm lead				
	Guide		High rigidity direct acting guide				
	Motor/Screw connection		With coupling				
Electromagnetic brake	Specifications		De-energized operation type, Rated voltage 24VDC ±10%, 0.4A				
	Holding torque		0.4N·m				
	Connection method		Ball screw mounting				
Controller	Model		LC1-1B1VB□□□□ (Refer to page 185 for details.)				
Regenerative absorption unit	Model		LC7R-K1□A□□□ (Refer to page 200 for details.)				

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1021PB-150K-F2-X2

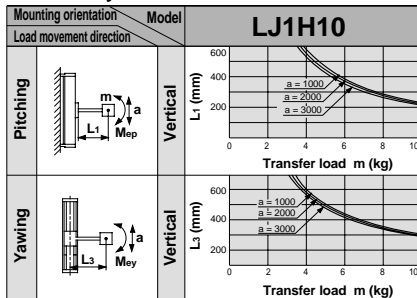
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of the regenerative absorption unit is recommended under all conditions.

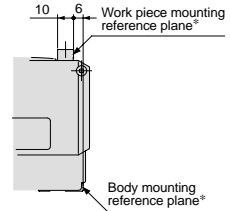
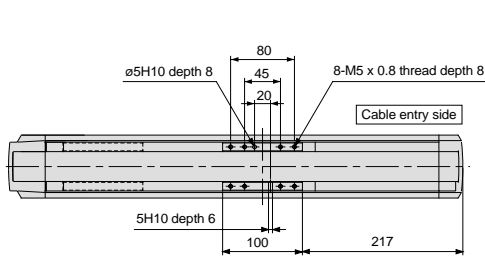
Actuator rating

Work load	5kg
Maximum speed	600mm/s
Maximum stroke	500mm

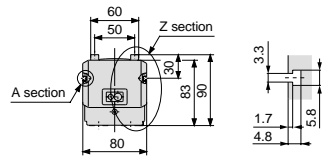
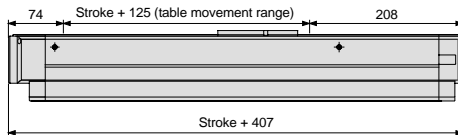
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H102□PB

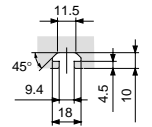
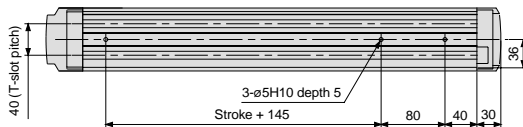
Scale: 15%



Z section detail



A section detail (Switch groove)



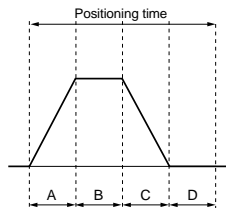
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1H102 **1** **NH** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

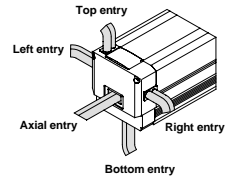
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight	kg		5.5	6.3	7.1	7.8	8.6
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10					
	Rated thrust	N	225					
	Maximum speed	mm/s	400					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅12mm, 8mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Controller	Model	LC1-1B1VH□□□□ (Refer to page 185 for details.)						
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 200 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1021NH-150K-F2-X2

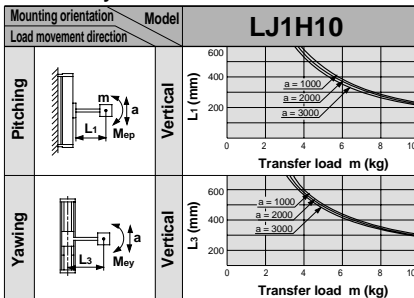
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

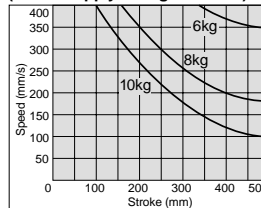
Allowable dynamic moment



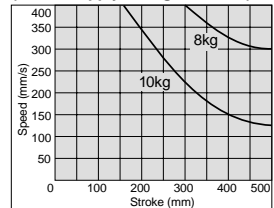
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H1021NH-□□□K
(Power supply voltage 100VAC)



LJ1H1022NH-□□□K
(Power supply voltage 200VAC)



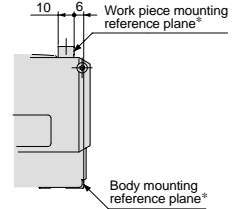
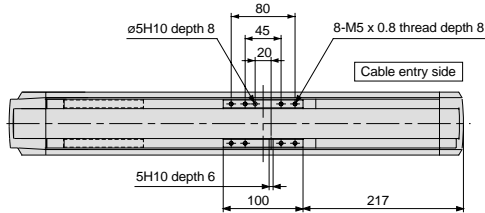
When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.

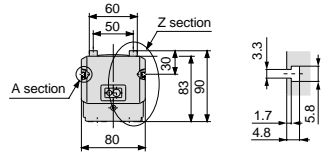
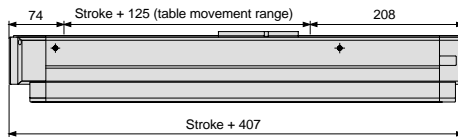
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H102□NH

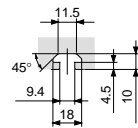
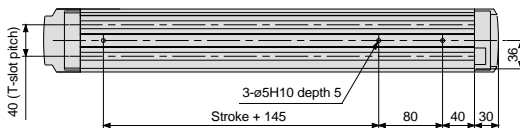
Scale: 15%



Z section detail



A section detail (Switch groove)



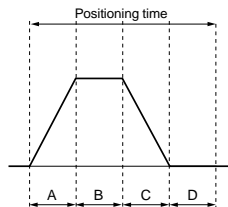
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	200	0.4	0.5	0.9	1.7	2.9
	400	0.4	0.5	0.7	1.1	1.7

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H10

Motor Output
100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅12mm/12mm lead

How to Order

LJ1H102 **1** **NB** — Stroke **K** — **F** **2**

Power voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

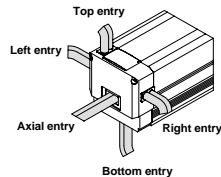
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight	kg		5.5	6.3	7.1	7.8	8.6
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	5					
	Rated thrust	N	150					
	Maximum speed	mm/s	600					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅12mm, 12mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
	Holding torque	0.4N·m						
	Connection method	Ball screw mounting						
Controller	Model	LC1-1B1VB□□□□ (Refer to page 185 for details.)						
Regenerative absorption unit	Model	LC7R-K1□A□□□ (Refer to page 200 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450
Example) LJ1H1021NB-150K-F2-X2

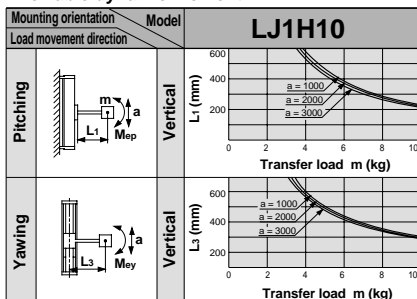
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

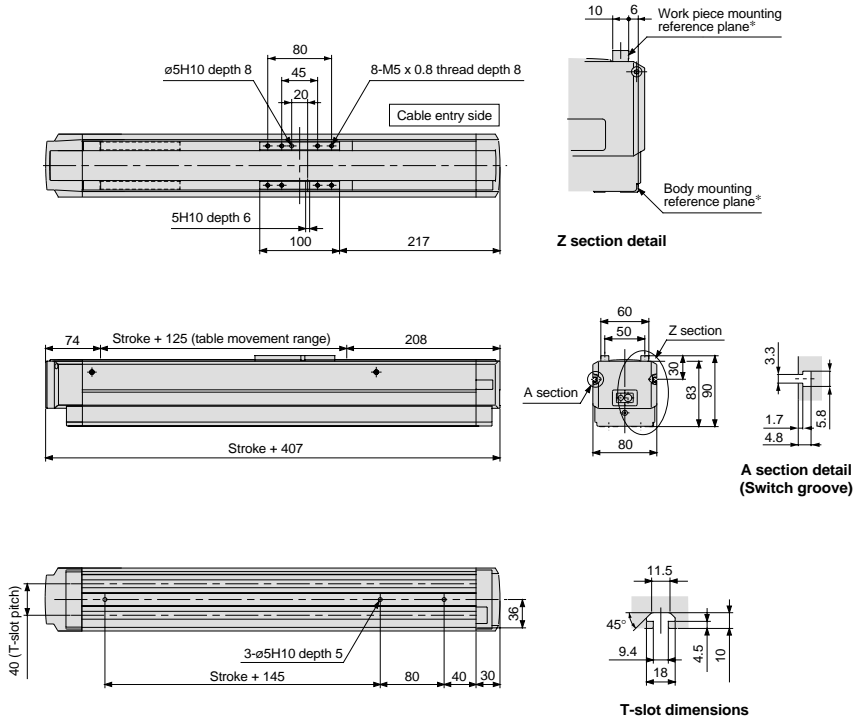
Actuator rating

Work load	5kg
Maximum speed	600mm/s
Maximum stroke	500mm

Refer to page 204 regarding brake wiring.

Dimensions/LJ1H102□NB

Scale: 15%

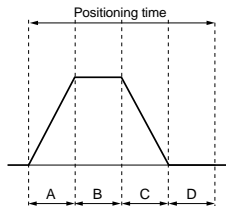


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅15mm/5mm lead

How to Order

LJ1H202 **1** **PF** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

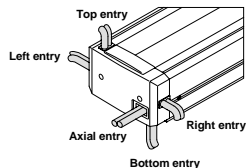
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600
Performance	Body weight	kg	8.0	9.2	10.4	11.5	12.9	14.0
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	15					
	Rated thrust	N	360					
	Maximum speed	mm/s	250					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅15mm, 5mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Controller	Model	LC1-1B2VF□□□□ (Refer to page 185 for details.)						
Regenerative absorption unit	Model	LC7R-K1□□□□ (Refer to page 200 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550
Example) **LJ1H2021PF-150K-F2-X2**

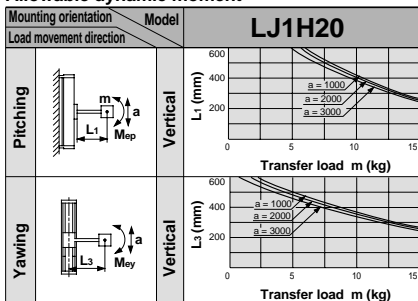
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

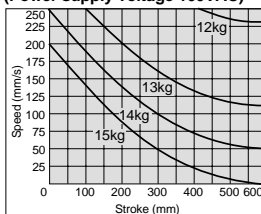
Allowable dynamic moment



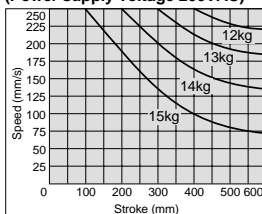
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H2021PF-□□□K
(Power supply voltage 100VAC)



LJ1H2022PF-□□□K
(Power supply voltage 200VAC)

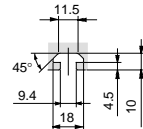
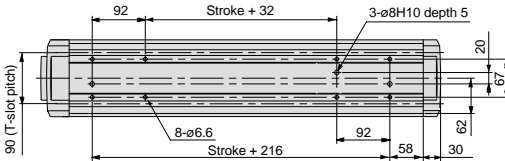
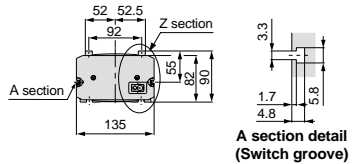
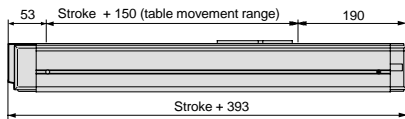
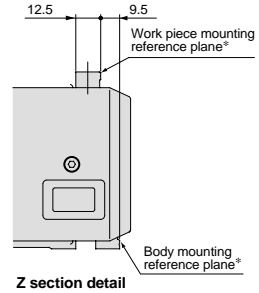
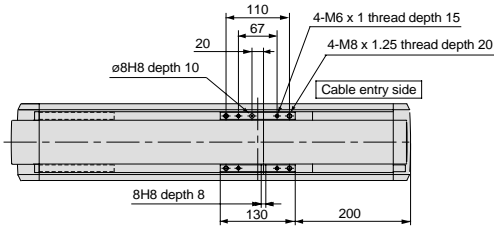


When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H20□PF

Scale: 10%



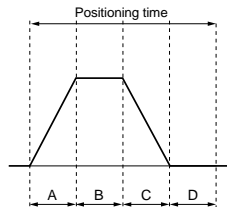
* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

T-slot dimensions

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	125	0.5	0.6	1.3	2.9	5.3
	250	0.5	0.6	0.9	1.7	2.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1
 LG1
 LC1
 LX
 LC6D/LC6C
 Switches

Standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
ø15mm/10mm lead

How to Order

LJ1H202 **1** **PA** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

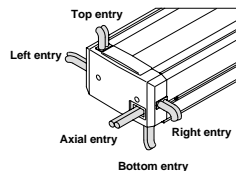
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600	
Performance	Body weight	kg	8.0	9.2	10.4	11.5	12.9	14.0	
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	8						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ø15mm, 10mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
		Holding torque	0.4N·m						
Connection method		Ball screw mounting							
Controller	Model	LC1-1B2VA□□□□ (Refer to page 185 for details.)							
Regenerative absorption unit	Model	LC7R-K1□A□□□ (Refer to page 200 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number. Applicable strokes: 150, 250, 350, 450, 550
Example) LJ1H2021PA-150K-F2-X2

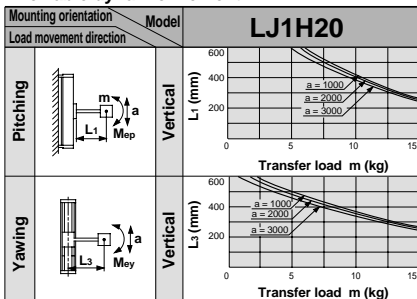
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

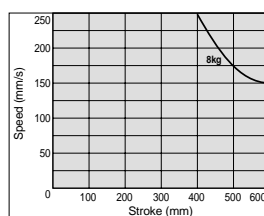
LJ1H2021PA-□□□K (Power supply voltage 100VAC)

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Work load	8kg
Maximum speed	500mm/s
Maximum stroke	600mm

LJ1H2022PA-□□□K (Power supply voltage 200VAC)



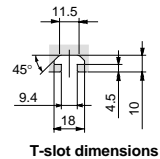
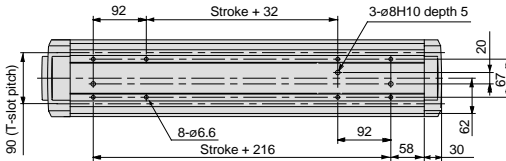
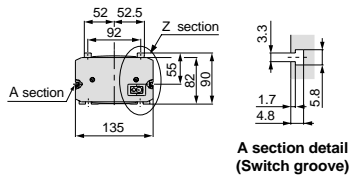
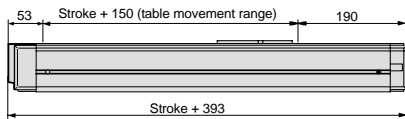
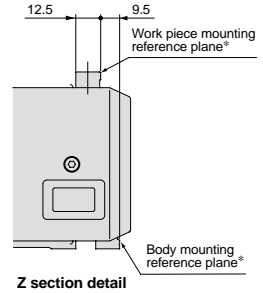
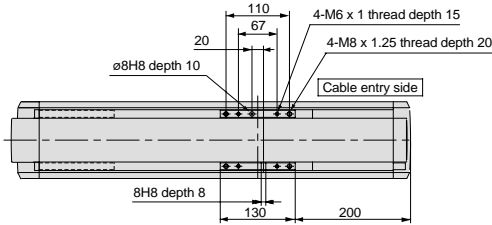
When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.

Refer to page 204 regarding brake wiring.

Dimensions/LJ1H20□PA

Scale: 10%

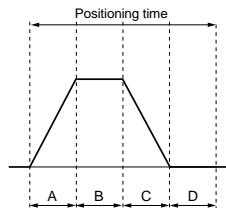


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅15mm/5mm lead

How to Order

LJ1H202 **1** **NF** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

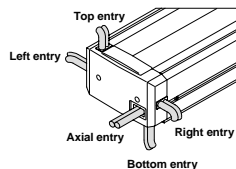
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600
Performance	Body weight	kg	8.0	9.2	10.4	11.5	12.9	14.0
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	15					
	Rated thrust	N	360					
	Maximum speed	mm/s	250					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅15mm, 5mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Controller	Model	LC1-1B2VF□□□□ (Refer to page 185 for details.)						
Regenerative absorption unit	Model	LC7R-K1□□□□ (Refer to page 200 for details.)						

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550
Example) LJ1H2021NF-150K-F2-X2

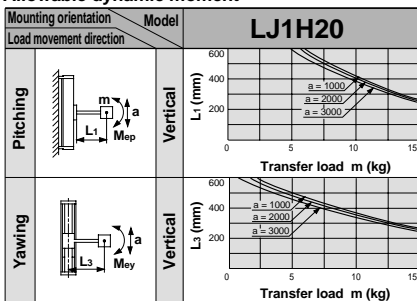
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

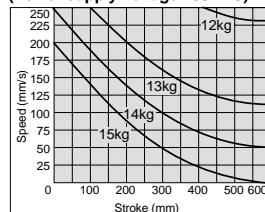
Allowable dynamic moment



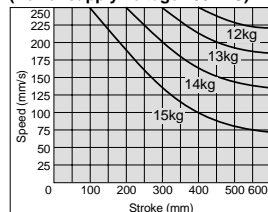
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H2021NF-□□□K
(Power supply voltage 100VAC)



LJ1H2022NF-□□□K
(Power supply voltage 200VAC)

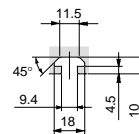
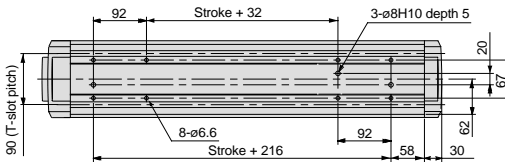
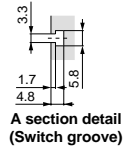
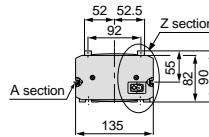
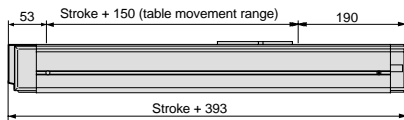
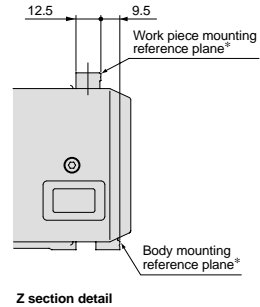
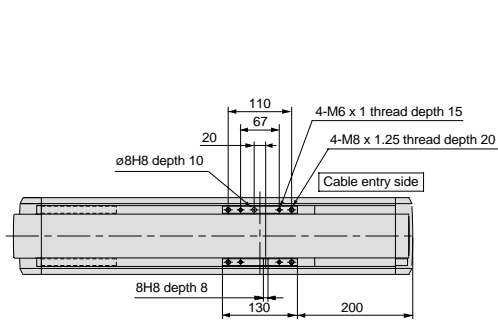


When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H20□NF

Scale: 10%



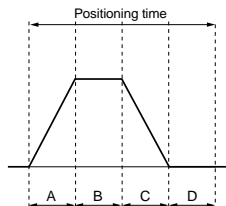
* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

T-slot dimensions

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	125	0.5	0.6	1.3	2.9	5.3
	250	0.5	0.6	0.9	1.7	2.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
ø 15mm/10mm lead

How to Order

LJ1H202 **1** **NA** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

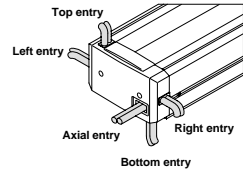
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	600	
Performance	Body weight	kg		8.0	9.2	10.4	11.5	12.9	14.0	
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	8							
	Rated thrust	N	180							
	Maximum speed	mm/s	500							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	AC servomotor (100W)								
	Encoder	Incremental system								
	Lead screw	Rolled ball screw ø15mm, 10mm lead								
	Guide	High rigidity direct acting guide								
	Motor/Screw connection	With coupling								
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A							
		Holding torque	0.4N·m							
Connection method		Ball screw mounting								
Controller	Model	LC1-1B2VA□-□□ (Refer to page 185 for details.)								
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 200 for details.)								

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550
Example) LJ1H2021NA-150K-F2-X2

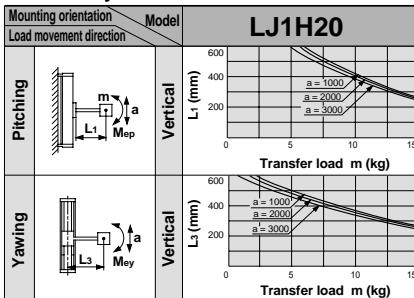
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

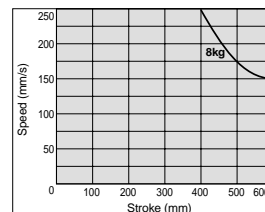
LJ1H2021NA-□□□K (Power supply voltage 100VAC)

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Work load	8kg
Maximum speed	500mm/s
Maximum stroke	600mm

LJ1H2022NA-□□□K (Power supply voltage 200VAC)



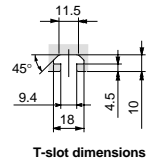
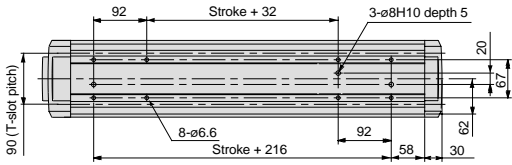
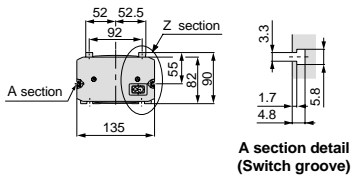
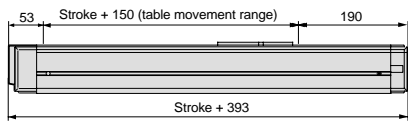
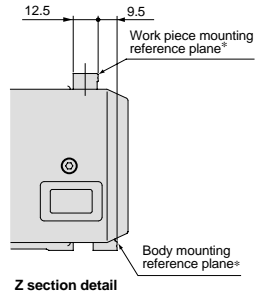
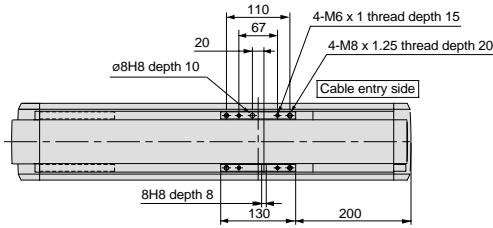
When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

Be sure to refer to page 200 regarding regenerative absorption units.

Refer to page 204 regarding brake wiring.

Dimensions/LJ1H20□NA

Scale: 10%

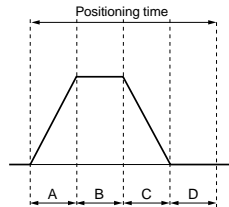


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

= Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H30

Motor Output
200W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
ø20mm/10mm lead

How to Order

LJ1H303 **1** **PA** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

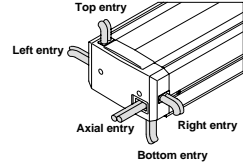
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	200	300	400	500	600
Performance	Body weight	kg	16.3	18.3	20.3	22.3	24.3
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	20				
	Rated thrust	N	360				
	Maximum speed	mm/s	500				
Main parts	Positioning repeatability	mm	±0.02				
	Motor		AC servomotor (200W)				
	Encoder		Incremental system				
	Lead screw		Ground ball screw ø20mm, 10mm lead				
	Guide		High rigidity direct acting guide				
	Motor/Screw connection		With coupling				
	Electromagnetic brake	Specifications		De-energized operation type, Rated voltage 24VDC ±10%, 0.5A			
Holding torque			1.0N·m				
Connection method			Ball screw mounting				
Controller	Model		LC1-1B3VA□□□□ (Refer to page 185 for details.)				
Regenerative absorption unit	Model		LC7R-K1□A□□□ (Refer to page 200 for details.)				

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550
Example) LJ1H3031PA-250K-F2-X2

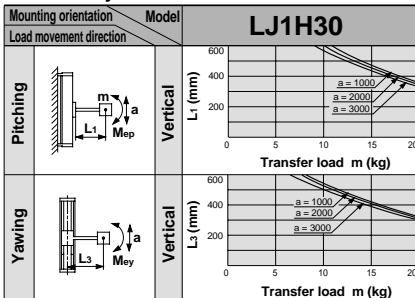
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

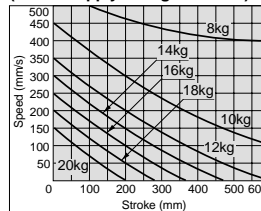
Allowable dynamic moment



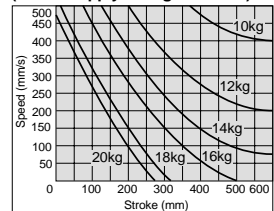
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H3031PA-□□□K
(Power supply voltage 100VAC)



LJ1H3032PA-□□□K
(Power supply voltage 200VAC)

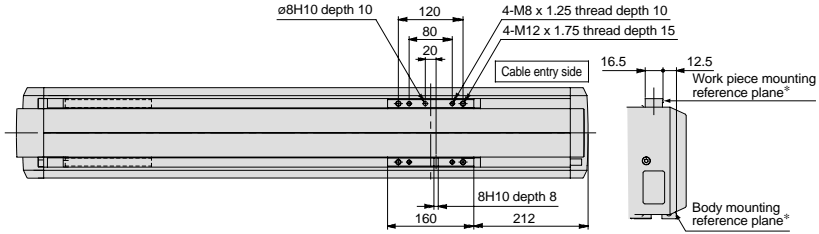


When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

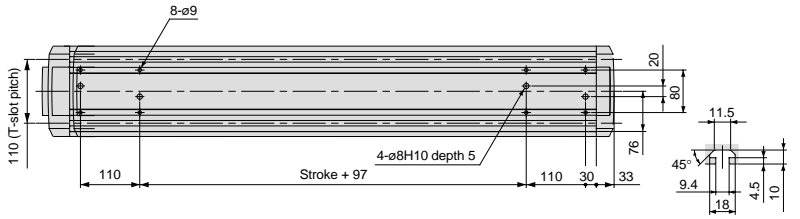
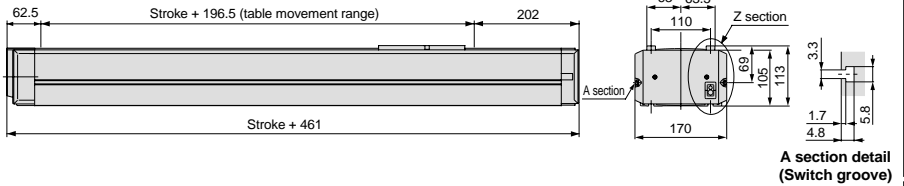
Be sure to refer to page 200 regarding regenerative absorption units.
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H30□PA

Scale: 10%



Z section detail

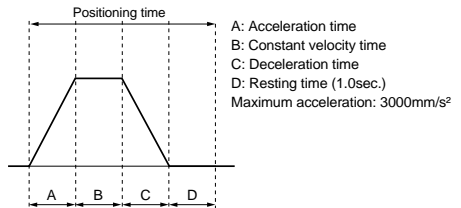


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	1.1	2.0	11.0	31.0	61.0
	100	1.1	1.2	2.1	4.1	7.1
	250	1.1	1.2	1.5	2.3	3.5
	500	1.1	1.2	1.4	1.8	2.4

* Values will vary slightly depending on the operating conditions.



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor Vertical Mount

Series LJ1H30

Motor Output
200W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅20mm/10mm lead

How to Order

LJ1H303 **1** **NA** — Stroke **K** — **F** **2**

Power supply voltage

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

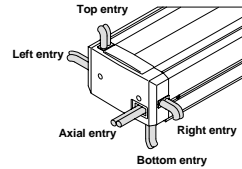
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	200	300	400	500	600
Performance	Body weight	kg	16.3	18.3	20.3	22.3	24.3
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	20				
	Rated thrust	N	360				
	Maximum speed	mm/s	500				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	AC servomotor (200W)					
	Encoder	Incremental system					
	Lead screw	Rolled ball screw ∅20mm, 10mm lead					
	Guide	High rigidity direct acting guide					
	Motor/Screw connection	With coupling					
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.5A				
Holding torque		1.0N-m					
Connection method		Ball screw mounting					
Controller	Model	LC1-1B3VA□□□□ (Refer to page 185 for details.)					
Regenerative absorption unit	Model	LC7R-K1□A□□□ (Refer to page 200 for details.)					

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550
Example) LJ1H3031NA-250K-F2-X2

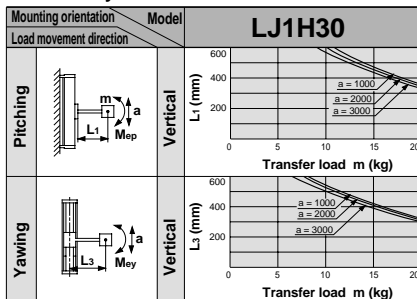
Allowable Moment (N-m)

Allowable static moment

Pitching	117
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

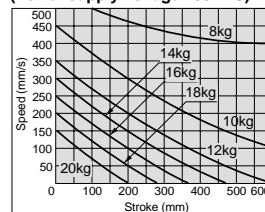
Allowable dynamic moment



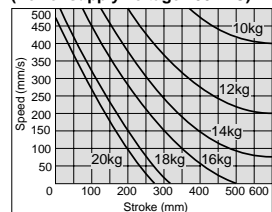
Refer to page 145 for deflection data.

Regenerative Absorption Unit Selection Guide

LJ1H3031NA-□□□K
(Power supply voltage 100VAC)



LJ1H3032NA-□□□K
(Power supply voltage 200VAC)

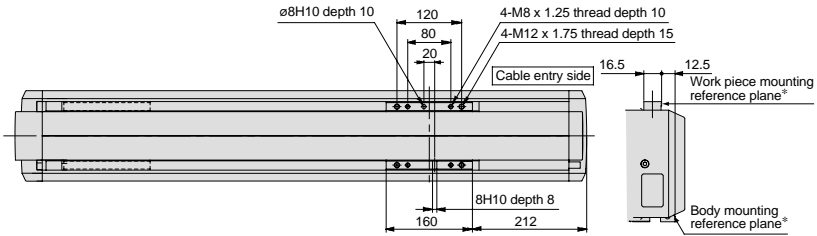


When an actuator is operated under conditions that exceed the lines in the graphs above, **be sure to use a regenerative absorption unit.**

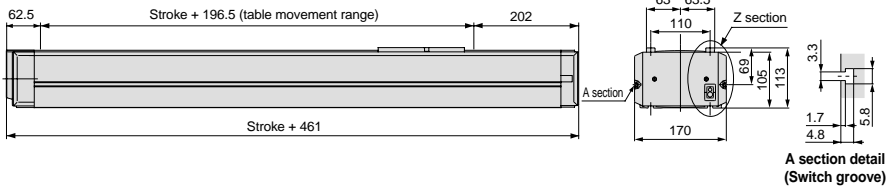
Be sure to refer to page 200 regarding regenerative absorption units.
Refer to page 204 regarding brake wiring.

Dimensions/LJ1H30□NA

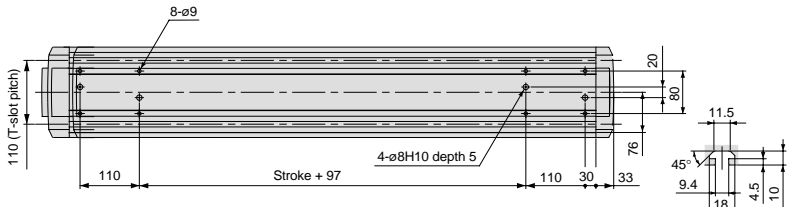
Scale: 10%



Z section detail



A section detail (Switch groove)



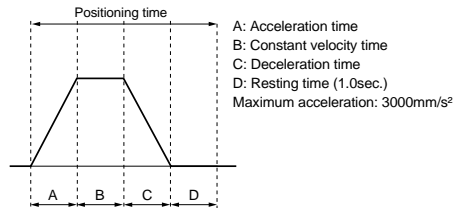
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	2.0	11.0	31.0	61.0
	100	1.1	1.2	2.1	4.1	7.1
	250	1.1	1.2	1.5	2.3	3.5
	500	1.1	1.2	1.4	1.8	2.4

* Values will vary slightly depending on the operating conditions.



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Non-standard Motor Horizontal Mount

Series LJ1H10

Motor Output
50W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅12mm/12mm lead

How to Order

LJ1H10 **G** 1 1 **PB** — Stroke — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

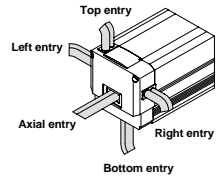
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight (without motor)	kg		4.8	5.6	6.4	7.1	7.9
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10					
	Maximum speed	mm/s	600					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (50W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅12mm, 12mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

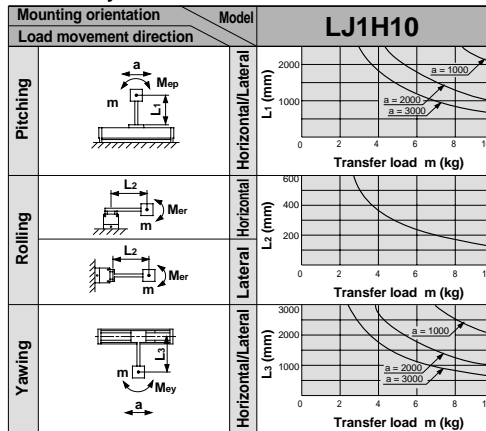
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

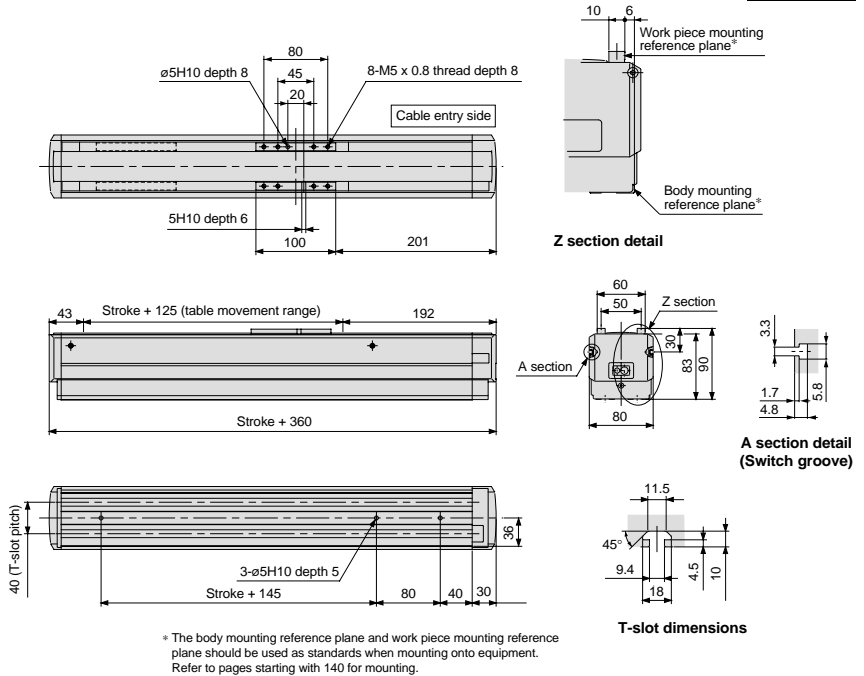
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H10□1□PB(X10)

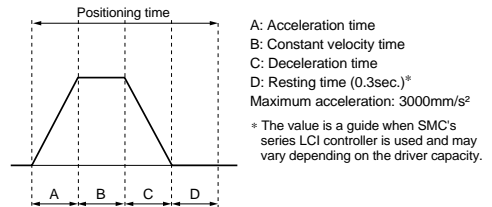
Scale: 15%



Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	50	100/115	MSM5AZP1A	MSD5A1P1E
		200/230		MSD5A3P1E
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP
		200/230		SGME-A5AF12

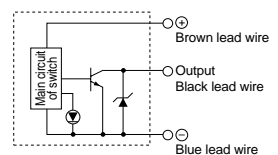
* For motor mounting dimensions, refer to the dimensions for series LJ1H10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Horizontal Mount

Series LJ1H10

Motor Output
50W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅12mm/12mm lead

How to Order

LJ1H10 **G** 1 1 **NB** — Stroke — **F** **W** — X10

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

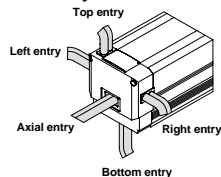
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500
Performance	Body weight (without motor)	kg	4.8	5.6	6.4	7.1	7.9
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	10				
	Maximum speed	mm/s	600				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	AC servomotor (50W)					
	Encoder	Incremental system					
	Lead screw	Rolled ball screw ∅12mm, 12mm lead					
	Guide	High rigidity direct acting guide					
Switch	Motor/Screw connection	With coupling					
	Model	D-Y7GL					
Switch	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

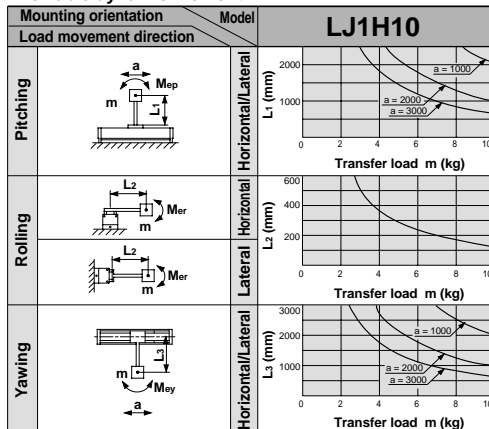
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

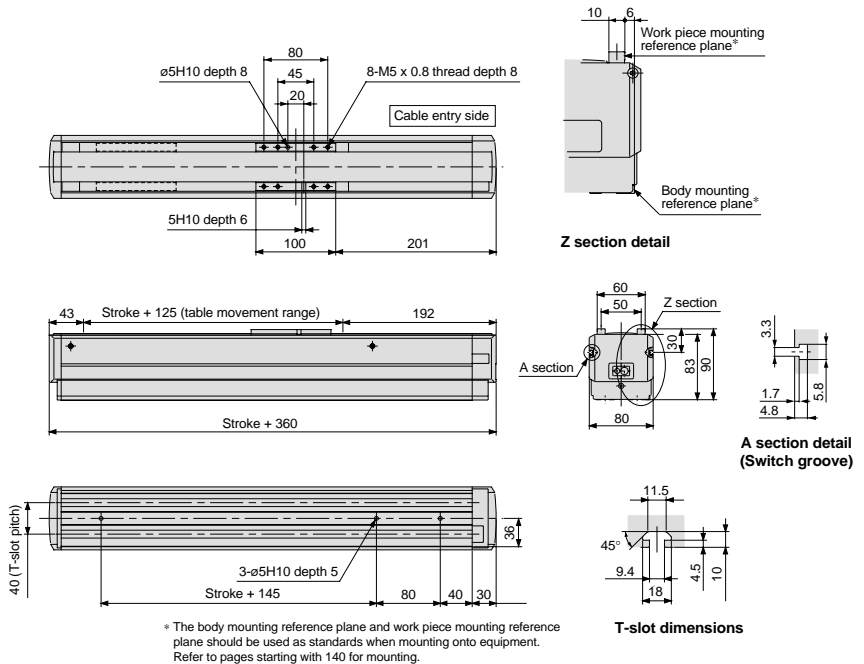
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H10□1□NB(X10)

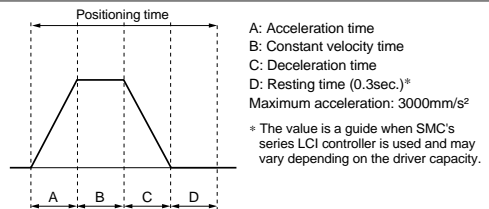
Scale: 15%



Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)				
	1	10	100	250	500
Speed (mm/s)					
10	0.4	1.3	10.3	25.3	50.3
100	0.4	0.5	1.4	2.9	5.4
300	0.4	0.5	0.8	1.3	2.1
600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	50	100/115	MSM5AZP1A	MSD5A1P1E
		200/230		MSD5A3P1E
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP
		200/230		SGME-A5AF12

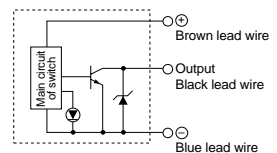
* For motor mounting dimensions, refer to the dimensions for series LJ1H10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor Horizontal Mount

Series LJ1H10

Motor Output
50W

High Rigidity
Direct Acting
Guide

Slide Screw
∅20mm/20mm lead

How to Order

LJ1H10 **G** 1 1 **SC** — Stroke — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

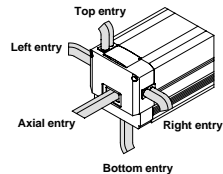
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

	Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg	4.9	5.8	6.8	7.6	8.4	9.3	10.1	10.9	11.8	12.6
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	10									
	Maximum speed	mm/s	500									
	Positioning repeatability	mm	±0.1									
Main parts	Motor		AC servomotor (50W)									
	Encoder		Incremental system									
	Lead screw		Slide screw ∅20mm, 20mm lead									
	Guide		High rigidity direct acting guide									
	Motor/Screw connection		With coupling									
Switch	Model		D-Y7GL									
	Specifications		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less									

Intermediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

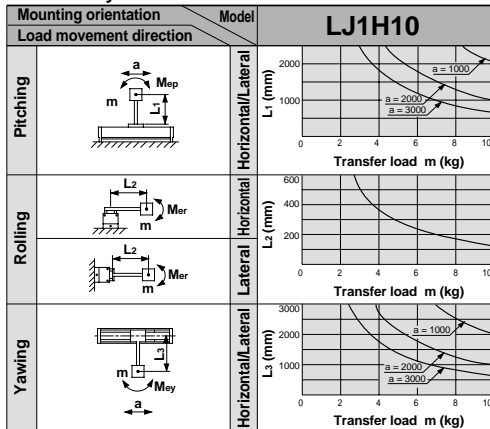
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Rolling	12.8
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

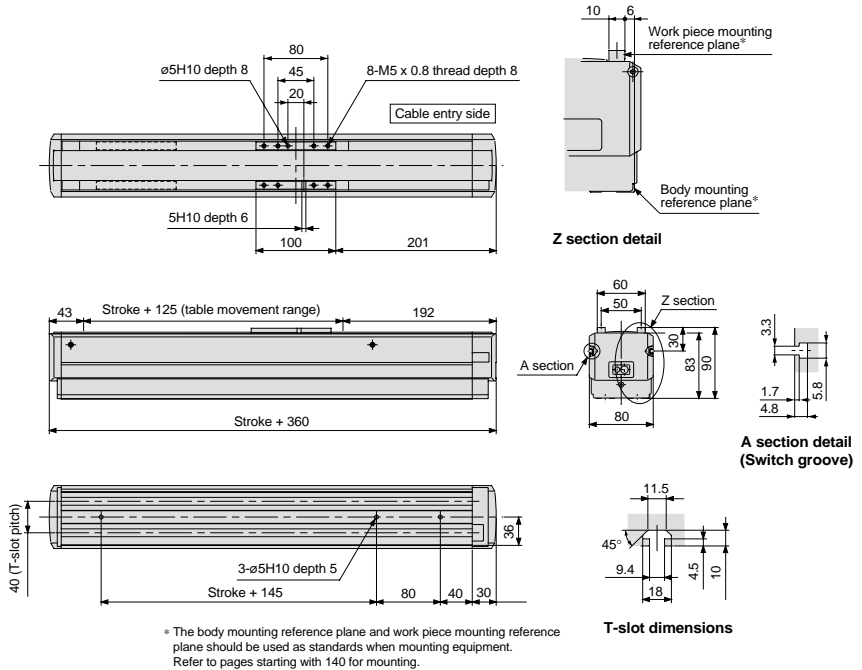
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H10□1□SC(X10)

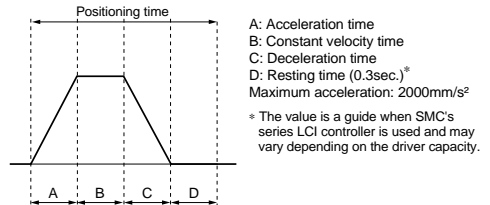
Scale: 15%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.4	10.4	50.4	100.4
	100	0.4	0.5	1.4	5.4	10.4
	250	0.4	0.5	0.9	2.5	4.5
	500	0.4	0.5	0.8	1.6	2.6

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	50	100/115	MSM5AZP1A	MSD5A1P1E
		200/230		MSD5A3P1E
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP
		200/230		SGME-A5AF12

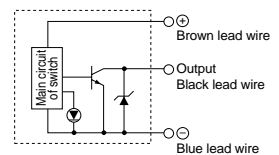
* For motor mounting dimensions, refer to the dimensions for series LJ1₅H10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Horizontal Mount

Series LJ1H20

Motor Output

100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw

∅15mm/10mm lead

How to Order

LJ1H20 G 2 1 PA — Stroke — F W — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

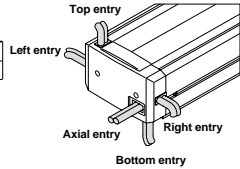
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

	Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg	7.2	8.4	9.6	10.7	12.1	13.2
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Maximum speed	mm/s	500					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅15mm, 10mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

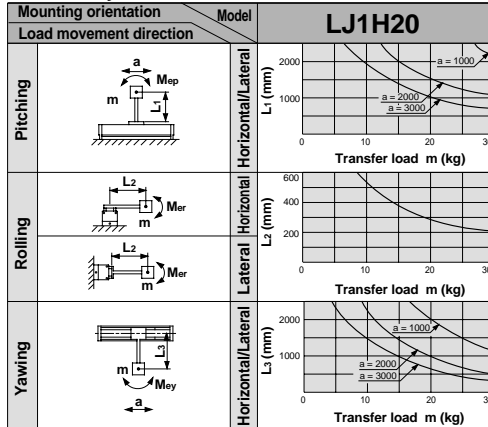
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

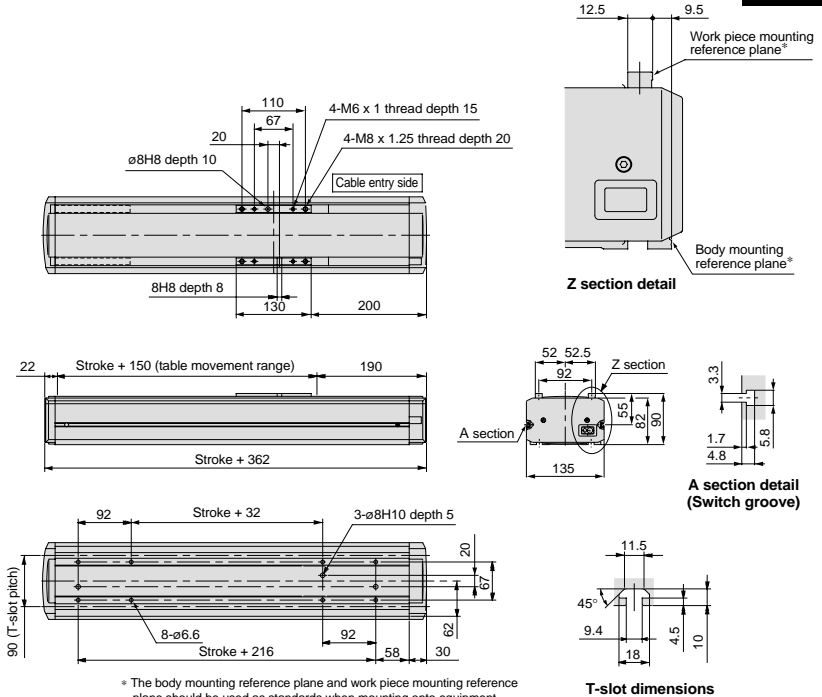
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H20□2□PA(X10)

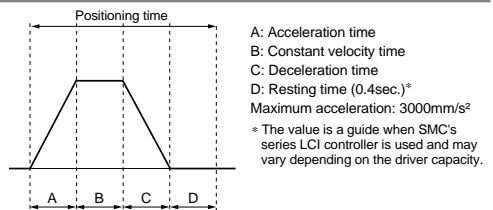
Scale: 10%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

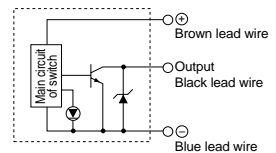
* For motor mounting dimensions, refer to the dimensions for series LJ1₂₀ on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Horizontal Mount

Series LJ1H20

Motor Output

100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw

∅15mm/20mm lead

How to Order

LJ1H20 G 2 1 PC Stroke F W X10

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

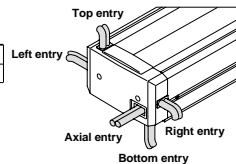
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg	12.1	13.2	14.4	15.6	16.8	18.0
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Maximum speed ^{Note)}	mm/s	1000	1000	930	740	600	500
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅15mm, 20mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) The speed is limited by the transfer load.

Consult each motor manufacturer regarding the maximum speed for each transfer load.

Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

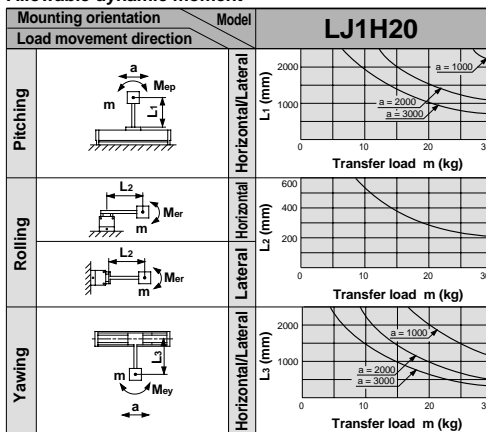
m : Transfer load (kg)

a : Work piece acceleration (mm/s²)

Me: Dynamic moment

L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

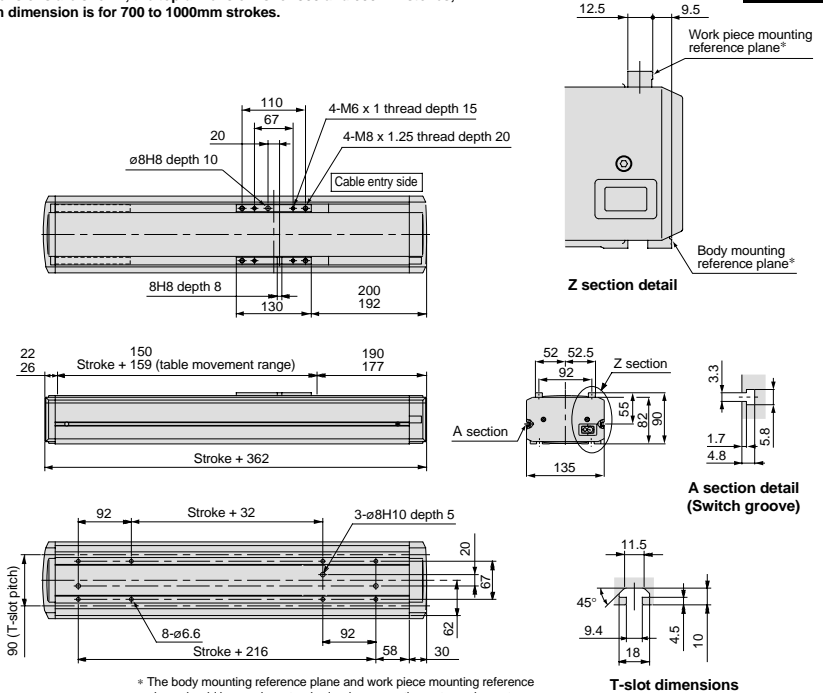


Refer to page 145 for deflection data.

Dimensions/LJ1H20□□PC(X10)

When two dimensions are shown, the top dimension is for 500 and 600mm strokes, and the bottom dimension is for 700 to 1000mm strokes.

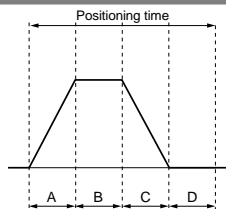
Scale: 10%



Positioning Time Guide

		Positioning time (sec.)					
Positioning distance (mm)		1	10	100	500	1000	
Speed (mm/s)	10	0.6	1.5	10.5	50.5	100.5	
	100	0.5	0.6	1.5	5.5	10.5	
	500	0.5	0.6	0.9	1.7	2.7	
	1000	0.5	0.6	0.9	1.4	1.9	

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 2000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

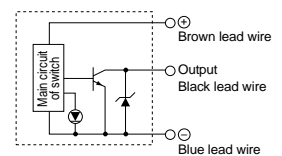
* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H20 **G** 2 **1** **NA** — **Stroke** — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

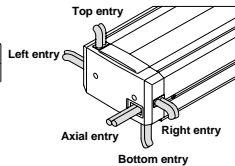
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

NII	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg	7.2	8.4	9.6	10.7	12.1	13.2
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Maximum speed	mm/s	500					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅15mm, 10mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector Load current: 40mA or less, Internal voltage drop: 1.5V or less						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

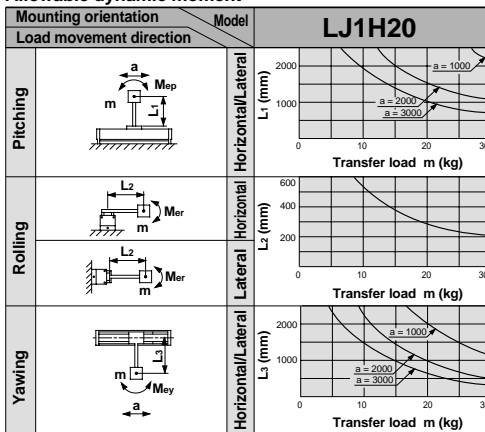
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

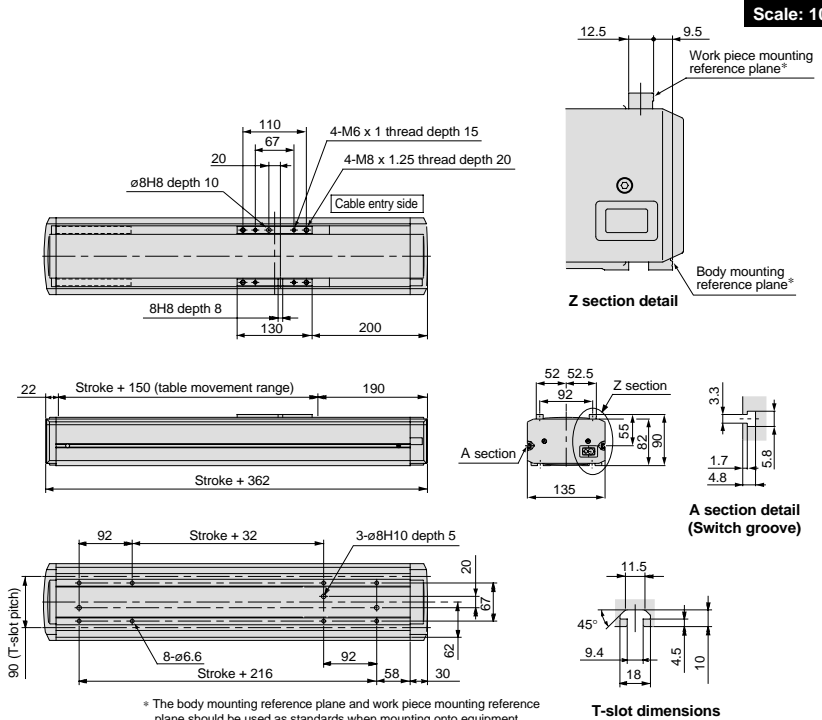
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

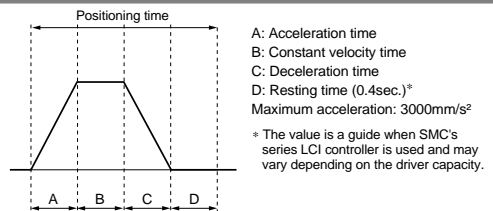
Dimensions/LJ1H20□□NA(X10)



Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	300	600	
10	0.5	1.4	10.4	30.4	60.4	
100	0.5	0.6	1.5	3.5	6.5	
250	0.5	0.6	0.9	1.7	2.9	
500	0.5	0.6	0.8	1.2	1.8	

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

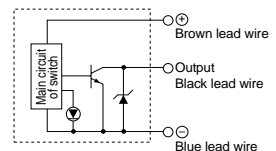
* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H20 **G** **2** **1** **NC** — Stroke — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

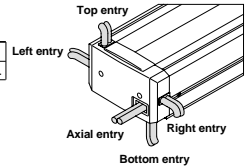
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

NII	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg	12.1	13.2	14.4	15.6	16.8	18.0
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	30					
	Maximum speed ^{Note)}	mm/s	1000	1000	930	740	600	500
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw Ø15mm, 20mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) The speed is limited by the transfer load.

Consult each motor manufacturer regarding the maximum speed for each transfer load.

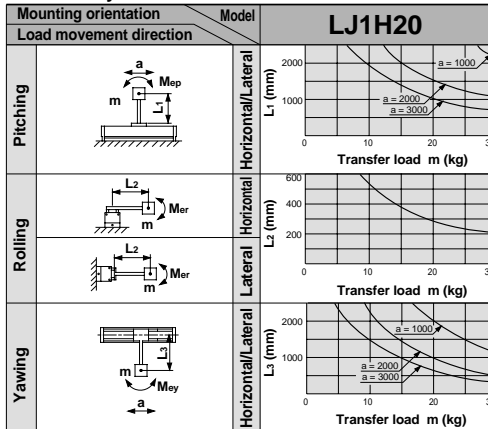
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

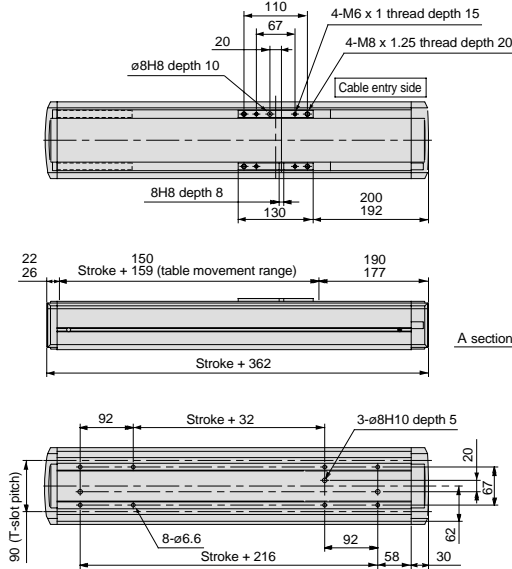
Allowable dynamic moment



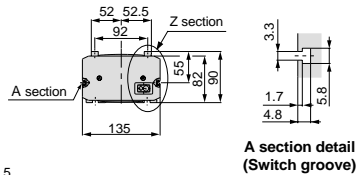
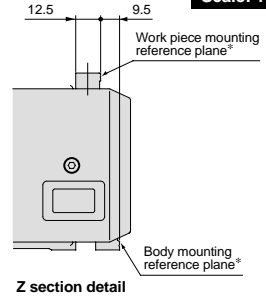
Non-standard Motor/Horizontal Mount Specification **Series LJ1H20**

Dimensions/LJ1H20□2□NC(X10)

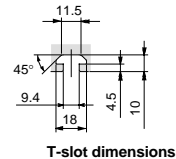
 When two dimensions are shown, the top dimension is for 500 and 600mm strokes, and the bottom dimension is for 700 to 1000mm strokes.



Scale: 10%



A section detail (Switch groove)



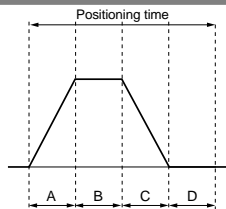
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)					
		1	10	100	500	1000	
Speed (mm/s)	10	0.6	1.5	10.5	50.5	100.5	
	100	0.5	0.6	1.5	5.5	10.5	
	500	0.5	0.6	0.9	1.7	2.7	
	1000	0.5	0.6	0.9	1.4	1.9	

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 2000mm/s²
 * The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

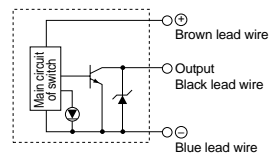
* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1H20 **G** 2 **1** **SC** — Stroke — **F** **W** — X10

Motor specification

G	Matsumita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

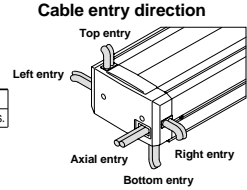
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.



Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight (without motor)	kg	7.5	8.5	9.6	10.8	12.3	13.8	16.3	16.8	18.6	20.4	24.2
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	15										
	Maximum speed	mm/s	500										
	Positioning repeatability	mm	±0.1										
Main parts	Motor	AC servomotor (100W)											
	Encoder	Incremental system											
	Lead screw	Slide screw ø20mm, 20mm lead											
	Guide	High rigidity direct acting guide											
	Motor/Screw connection	With coupling											
Switch	Model	D-Y7GL											
	Specifications	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

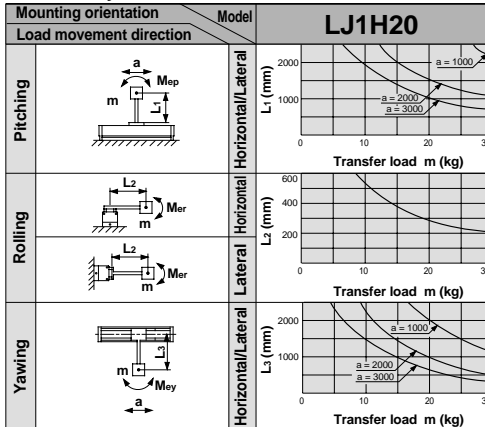
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	83
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

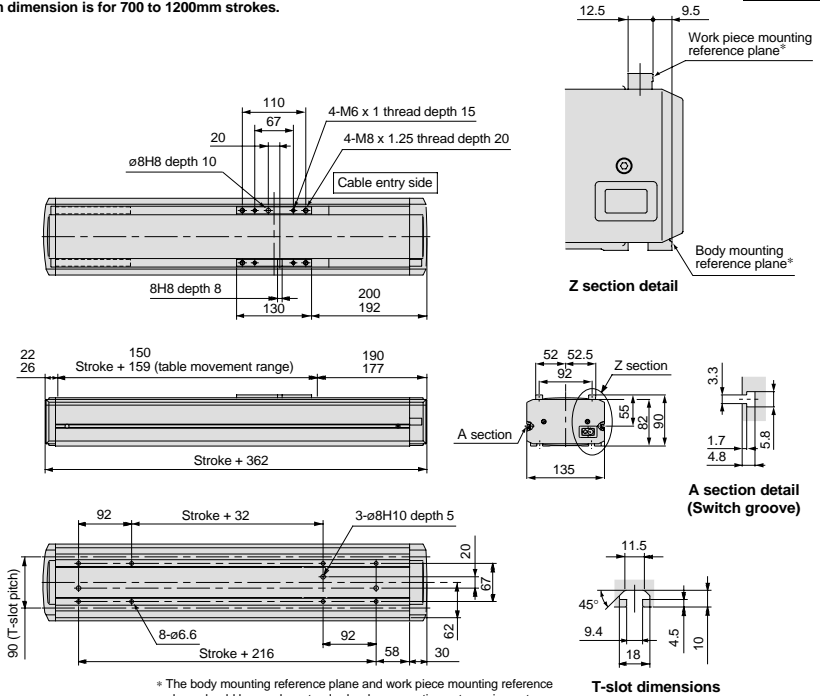


Refer to page 145 for deflection data.

Dimensions/LJ1H20□2□PC(X10)

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes.

Scale: 10%

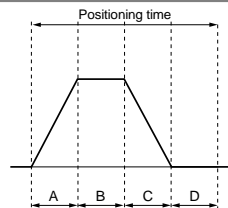


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)					
		1	10	100	500	1000	
Speed (mm/s)	10	0.6	1.5	10.5	60.5	120.5	
	100	0.5	0.6	1.5	6.5	12.5	
	250	0.5	0.6	1.0	3.0	5.4	
	500	0.5	0.6	0.9	1.9	3.1	

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

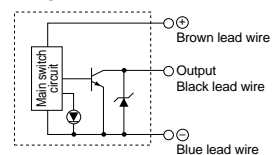
* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H30 **G** **3** **1** **PD** — Stroke — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

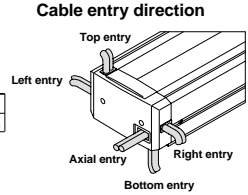
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

NII	None
W	N.C. (B contact) 2 pcs.



Specifications

Standard stroke		mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight (without motor)	kg	14.9	16.9	18.9	20.9	22.9	27.4	31.9	35.9	41.9
	Operating temperature range	°C	5 to 40 (with no condensation)								
	Work load	kg	60								
	Maximum speed	mm/s	1000								
Main parts	Positioning repeatability	mm	±0.02								
	Motor		AC servomotor (200W)								
	Encoder		Incremental system								
	Lead screw		Ground ball screw ∅25mm, 25mm lead								
	Guide		High rigidity direct acting guide								
Switch	Motor/Screw connection		With coupling								
	Model		D-Y7GL								
	Specifications		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less								

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

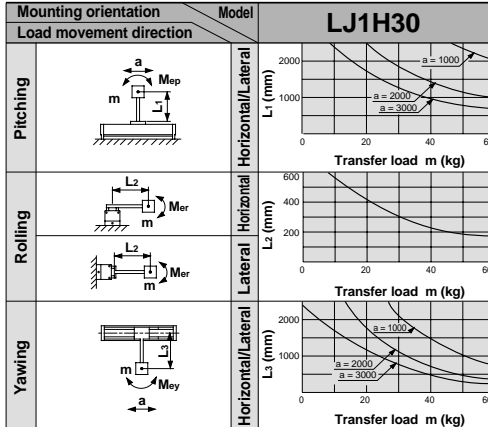
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

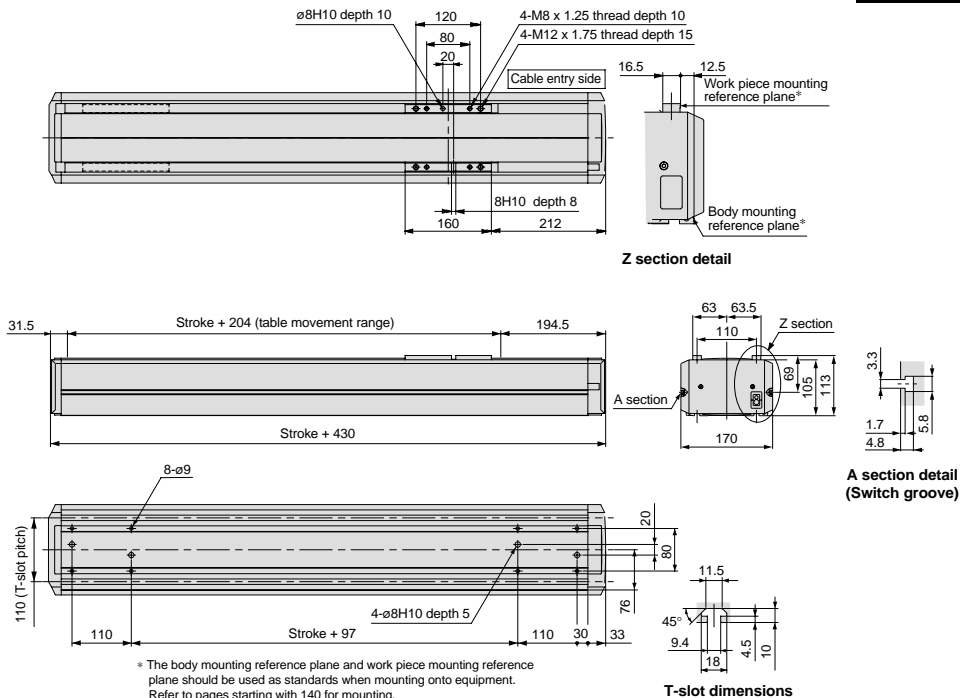
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H30□3□PD(X10)

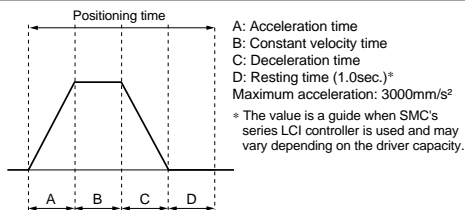
Scale: 10%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	750	1500
Speed (mm/s)	10	1.1	2.0	11.0	76.0	151.0
	100	1.1	1.2	2.1	8.6	16.1
	500	1.1	1.2	1.4	2.7	4.2
	1000	1.1	1.2	1.4	2.1	2.9

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

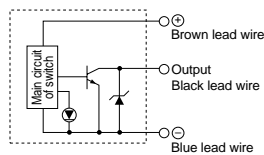
* For motor mounting dimensions, refer to the dimensions for series LJ1H30 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor
Horizontal Mount

Series LJ1H30

Motor Output
200W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw
∅25mm/25mm lead

How to Order

LJ1H30 **G** **3** **1** **ND** — Stroke — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

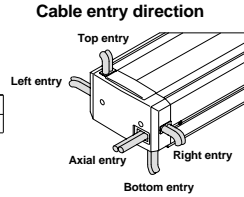
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.



Specifications

		Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500	
Performance	Body weight (without motor)	kg	14.9	16.9	18.9	20.9	22.9	27.4	31.9	35.9	41.9		
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	60										
	Maximum speed	mm/s	1000									700	500
	Positioning repeatability	mm	±0.05										
Main parts	Motor	AC servomotor (200W)											
	Encoder	Incremental system											
	Lead screw	Rolled ball screw ∅25mm, 25mm lead											
	Guide	High rigidity direct acting guide											
	Motor/Screw connection	With coupling											
Switch	Model	D-Y7GL											
	Specifications	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

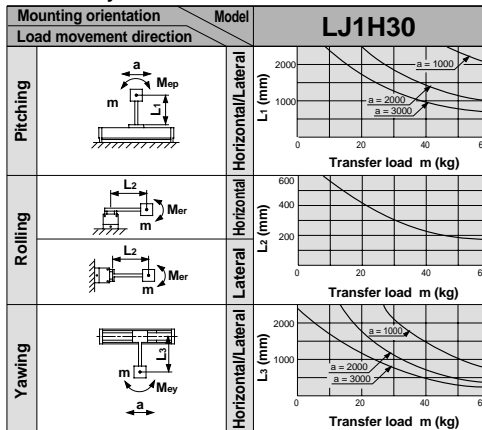
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

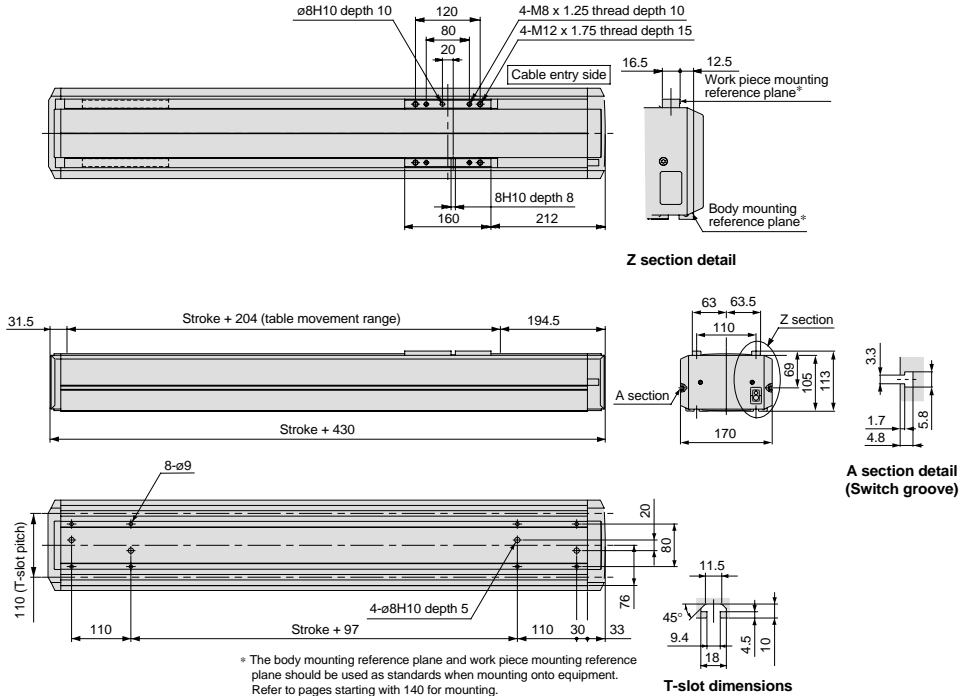


Refer to page 145 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LJ1H30**

Dimensions/LJ1H30□3□ND(X10)

Scale: 10%

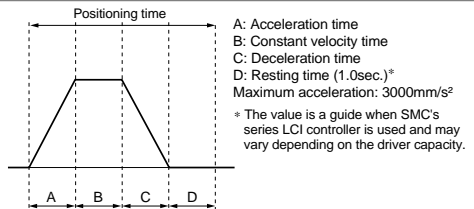


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	750	1500
Speed (mm/s)	10	1.1	2.0	11.0	76.0	151.0
	100	1.1	1.2	2.1	8.6	16.1
	500	1.1	1.2	1.4	2.7	4.2
	1000	1.1	1.2	1.4	2.1	2.9

* Values will vary slightly depending on the operating conditions.



Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

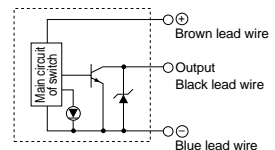
* For motor mounting dimensions, refer to the dimensions for series LJ1H30 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Horizontal Mount

Series LJ1H30

Motor Output

200_w

High Rigidity

Direct Acting Guide

Slide Screw

∅30mm/40mm lead

How to Order

LJ1H30 **G** **3** **1** **SE** — **Stroke** — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

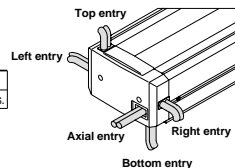
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight (without motor)	kg		13.8	15.9	17.9	20.0	22.1	26.2	30.4	34.5	40.8
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	30									
	Maximum speed	mm/s	500									
	Positioning repeatability	mm	±0.1									
Main parts	Motor	AC servomotor (200W)										
	Encoder	Incremental system										
	Lead screw	Slide screw ∅30mm, 40mm lead										
	Guide	High rigidity direct acting guide										
	Motor/Screw connection	With coupling										
Switch	Model	D-Y7GL										
	Specifications	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

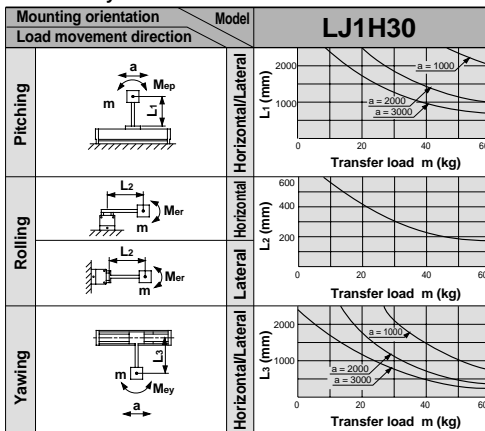
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Rolling	137
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

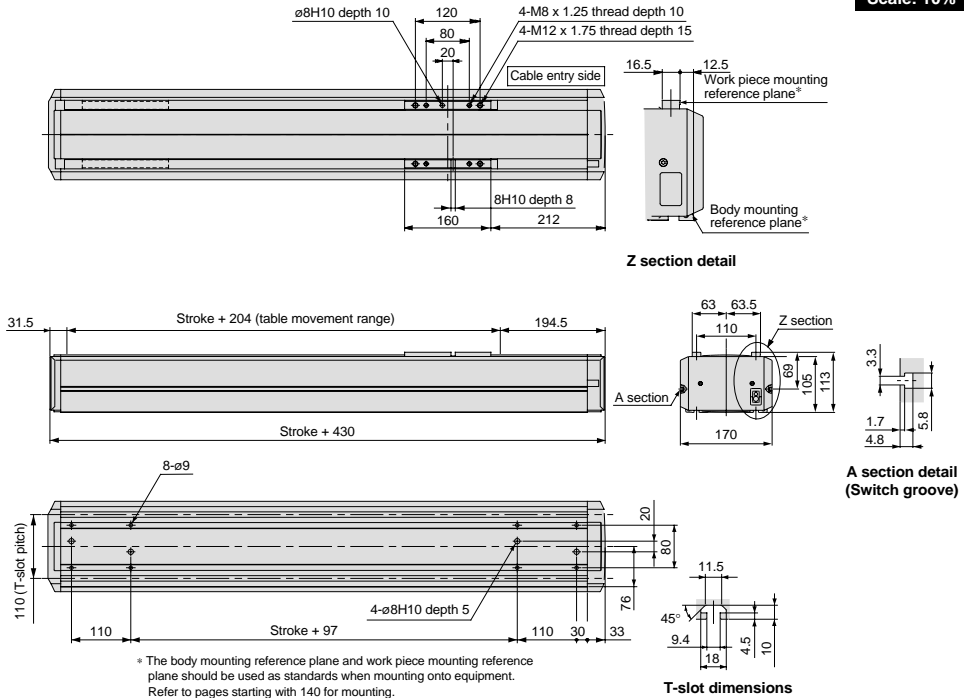
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1H30□3□SE(X10)

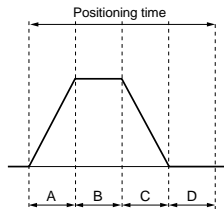
Scale: 10%



Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	750	1500	
Speed (mm/s)	10	1.2	2.1	11.1	76.1	151.1
	100	1.1	1.2	2.1	8.6	16.1
	250	1.1	1.2	1.6	4.2	7.2
	500	1.1	1.2	1.5	2.8	4.3

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (1.0sec.)*
 * Maximum acceleration: 2000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

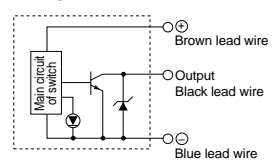
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

- * For motor mounting dimensions, refer to the dimensions for series LJ1[□]H30 on page 143 as a reference for mounting and design.
- * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H10 **G** **2** **1** **PH** — Stroke **K** — **F** **W** — X10

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

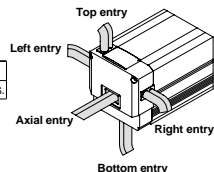
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight (without motor)	kg		5.1	5.9	6.7	7.4	8.2
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10					
	Rated thrust	N	225					
	Maximum speed	mm/s	400					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅12mm, 8mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						
Regenerative absorption unit			Refer to the selection guide below.					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

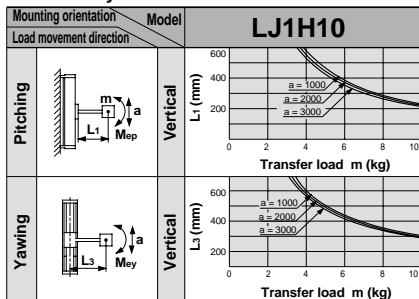
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

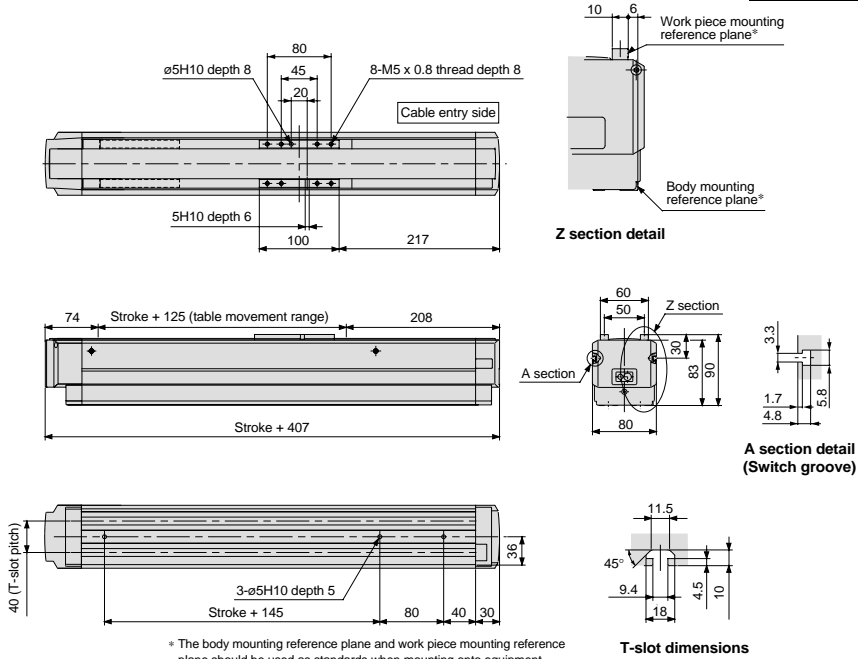
Regenerative energy = Motor coil energy consumption

- + Driver capacitor energy consumption (A)
- + Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Dimensions/LJ1H10□2□PH(X10)

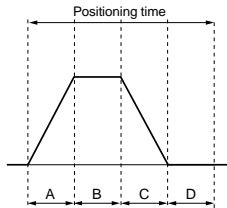
Scale: 15%



Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	200	0.4	0.5	0.9	1.7	2.9
	400	0.4	0.5	0.7	1.1	1.7

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)*
 Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

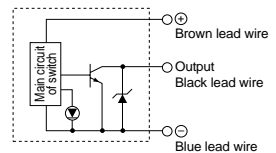
* For motor mounting dimensions, refer to the dimensions for series LJ1₅H10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1
 LG1
 LC1
 LX
 LC6D/LC6C
 Switches

Non-standard Motor Vertical Mount

Series LJ1H10

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅ 12mm/12mm lead

How to Order

LJ1H10 **G** 2 **1** **PB** — Stroke **K** — **F** **W** — X10

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

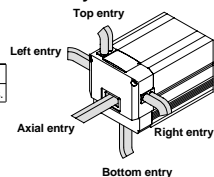
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nll	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500
Performance	Body weight (without motor)	kg		5.1	5.9	6.7	7.4	8.2
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	5					
	Rated thrust	N	150					
	Maximum speed	mm/s	600					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅12mm, 12mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						
Regenerative absorption unit			Refer to the selection guide below.					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

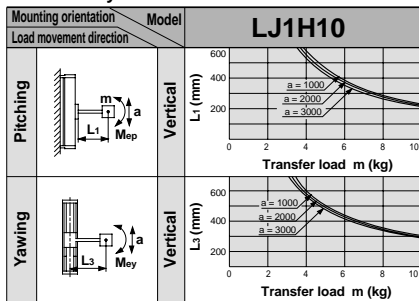
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mounting specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

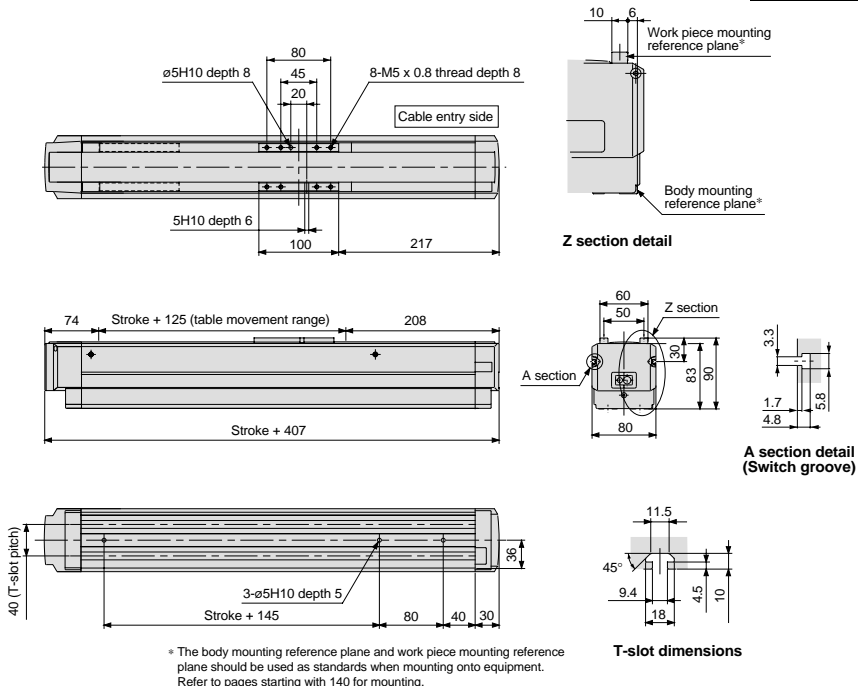
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Dimensions/LJ1H10□2□PB(X10)

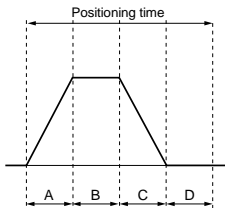
Scale: 15%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)*
 Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

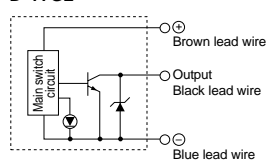
* For motor mounting dimensions, refer to the dimensions for series LJ1₅10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Vertical Mount

Series LJ1H10

Motor Output

100W

High Rigidity

Direct Acting Guide

Rolled Ball Screw

ø12mm/8mm lead

How to Order

LJ1H10 **G** **2** **1** **NH** - Stroke **K** - **F** **W** - X10

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

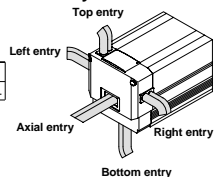
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

NH	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500
Performance	Body weight (without motor)	kg	5.1	5.9	6.7	7.4	8.2
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	10				
	Rated thrust	N	225				
	Maximum speed	mm/s	400				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	AC servomotor (100W)					
	Encoder	Incremental system					
	Lead screw	Rolled ball screw ø12mm, 8mm lead					
	Guide	High rigidity direct acting guide					
	Motor/Screw connection	With coupling					
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A				
Holding torque		0.4N·m					
Connection method		Ball screw mounting					
Switch	Model	D-Y7GL					
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less					
Regenerative absorption unit		Refer to the selection guide below.					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

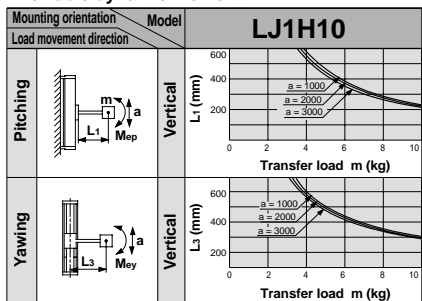
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mounting specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

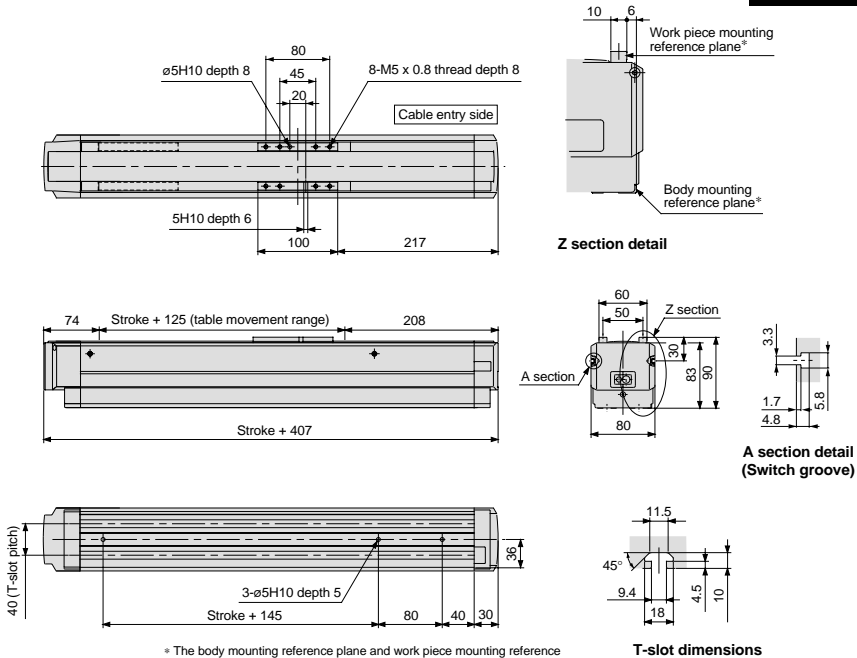
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

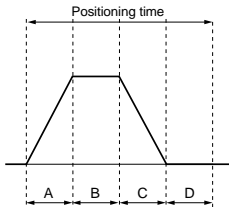
Dimensions/LJ1H10□2□NH(X10)

Scale: 15%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	200	0.4	0.5	0.9	1.7	2.9
	400	0.4	0.5	0.7	1.1	1.7



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)*
 Maximum acceleration: 3000mm/s²
 * The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

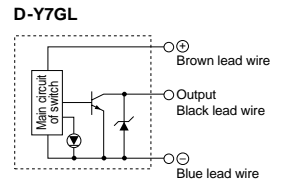
* Values will vary slightly depending on the operating conditions.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions for series LJ1H10 on page 143 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



LJ1
LG1
LC1
LX
LC6D/LC6C Switches

Non-standard Motor

Vertical Mount

Series LJ1H10

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅12mm/12mm lead

How to Order

LJ1H10 **G** **2** **1** **NB** - Stroke **K** - **F** **W** - **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

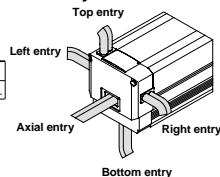
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nll	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	
Performance	Body weight (without motor)	kg		5.1	5.9	6.7	7.4	8.2	
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	5						
	Rated thrust	N	150						
	Maximum speed	mm/s	600						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅12mm, 12mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
Holding torque		0.4N·m							
Connection method		Ball screw mounting							
Switch	Model	D-Y7GL							
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less							
Regenerative absorption unit		Refer to the selection guide below.							

Intermediate strokes

Manufacture of strokes other than the standard strokes on the left will be treated as a special order. Consult SMC.

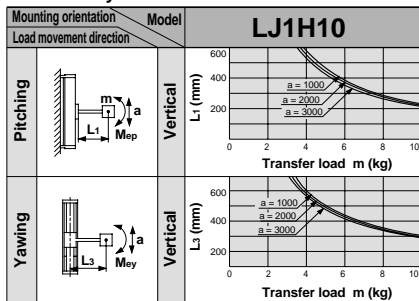
Allowable Moment (N·m)

Allowable static moment

Pitching	10.2
Yawing	10.2

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mounting specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

+ Driver capacitor energy consumption (A)

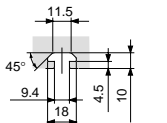
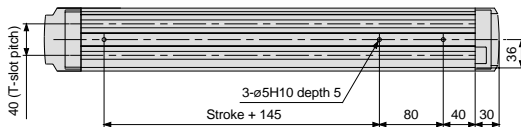
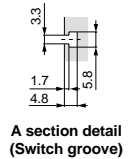
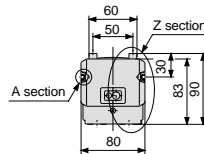
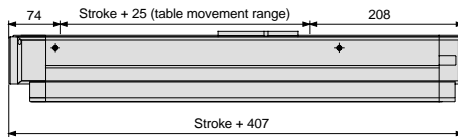
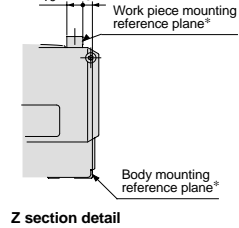
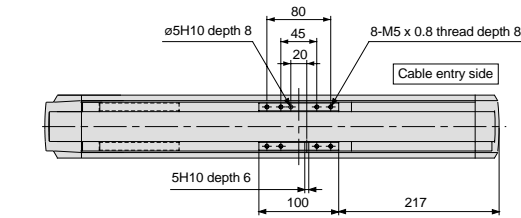
+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Non-standard Motor/Vertical Mount Specification **Series LJ1H10**

Dimensions/LJ1H10□2□NB(X10)

Scale: 15%

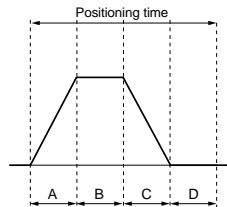


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	250	500
Speed (mm/s)	10	0.4	1.3	10.3	25.3	50.3
	100	0.4	0.5	1.4	2.9	5.4
	300	0.4	0.5	0.8	1.3	2.1
	600	0.4	0.5	0.7	2.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.3sec.)*
 Maximum acceleration: 3000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

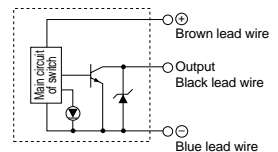
* For motor mounting dimensions, refer to the dimensions for series LJ1H10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅15mm/5mm lead

How to Order

LJ1H20 **G** 2 **1** **PF** — Stroke **K** — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

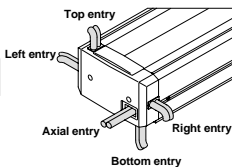
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

NH	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg	7.5	8.7	9.9	11.0	12.4	13.5
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	15					
	Rated thrust	N	360					
	Maximum speed	mm/s	250					
	Positioning repeatability	mm	±0.02					
Main parts	Motor	AC servomotor (100W)						
	Encoder	Incremental system						
	Lead screw	Ground ball screw ∅15mm, 5mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A					
Holding torque		0.4N·m						
Connection method		Ball screw mounting						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						
Regenerative absorption unit		Refer to the selection guide below.						

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

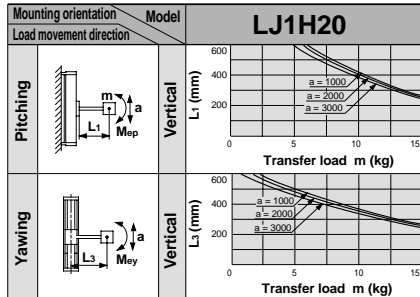
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

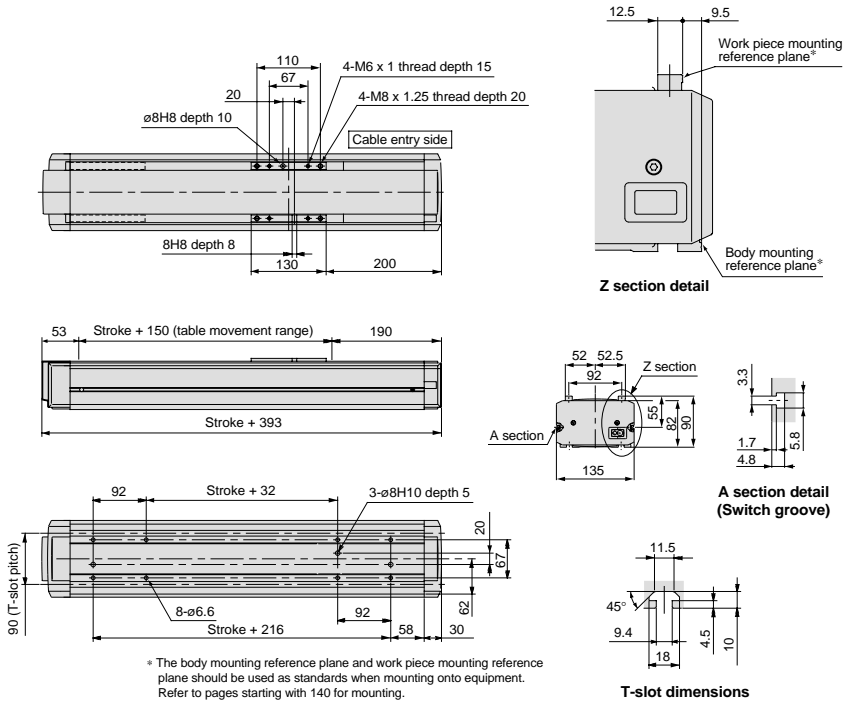
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Dimensions/LJ1H20□2□PF(X10)

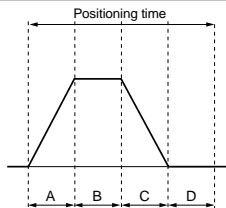
Scale: 10%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	125	0.5	0.6	1.3	2.9	5.3
	250	0.5	0.6	0.9	1.7	2.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 3000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

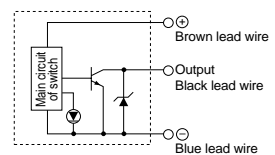
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor Vertical Mount

Series LJ1H20

Motor Output
100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw
∅15mm/10mm lead

How to Order

LJ1H20 **G** 2 **1** **PA** — Stroke **K** — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

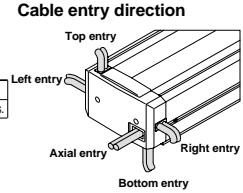
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nil	None
W	N.C. (B contact) 2 pcs.



Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		7.5	8.7	9.9	11.0	12.4	13.5
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	8						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅15mm, 10mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
Holding torque		0.4N·m							
Connection method		Ball screw mounting							
Switch	Model	D-Y7GL							
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less							
Regenerative absorption unit		Refer to the selection guide below.							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

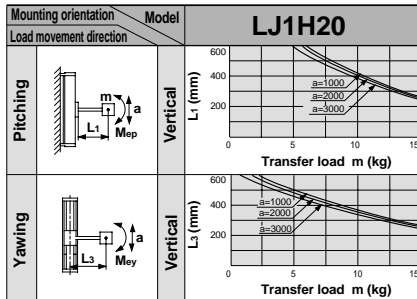
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard unit with vertical mount specification. How to determine regenerative energy is shown below.

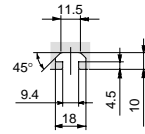
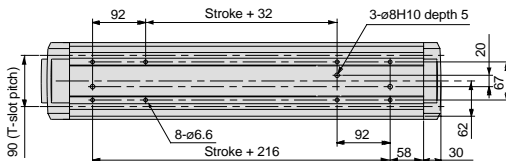
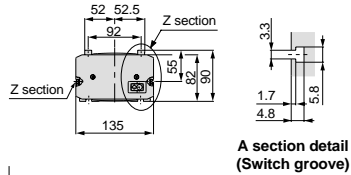
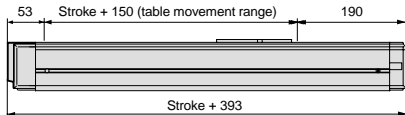
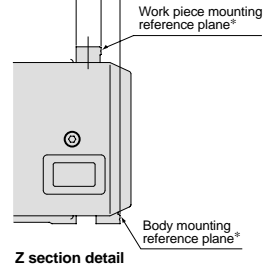
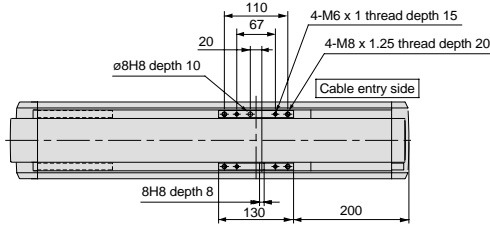
Regenerative energy = Motor coil energy consumption

- + Driver capacitor energy consumption (A)
- + Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Dimensions/LJ1H20□2□PA(X10)

Scale: 10%

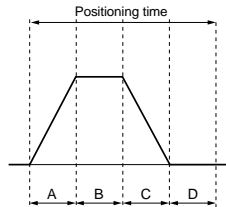


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

T-slot dimensions

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Settling time (0.4sec.)*
 Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

≧ Values will vary slightly depending on the operating conditions.

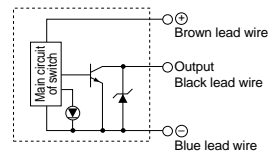
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

≧ For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.
 ≧ Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 ≧ For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Non-standard Motor

Vertical Mount

Series LJ1H20

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅15mm/5mm lead

How to Order

LJ1H20 **G** **2** **1** **NF** — Stroke **K** — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

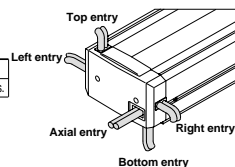
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

NH	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		7.5	8.7	9.9	11.0	12.4	13.5
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	15						
	Rated thrust	N	360						
	Maximum speed	mm/s	250						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅15mm, 5mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
Holding torque		0.4-Nm							
Connection method		Ball screw mounting							
Switch	Model	D-Y7GL							
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less							
Regenerative absorption unit		Refer to the selection guide below.							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

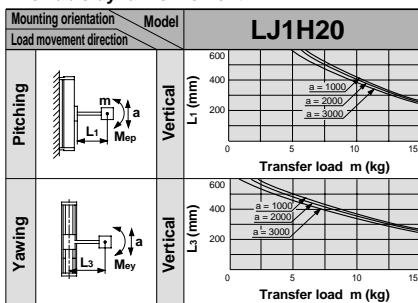
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

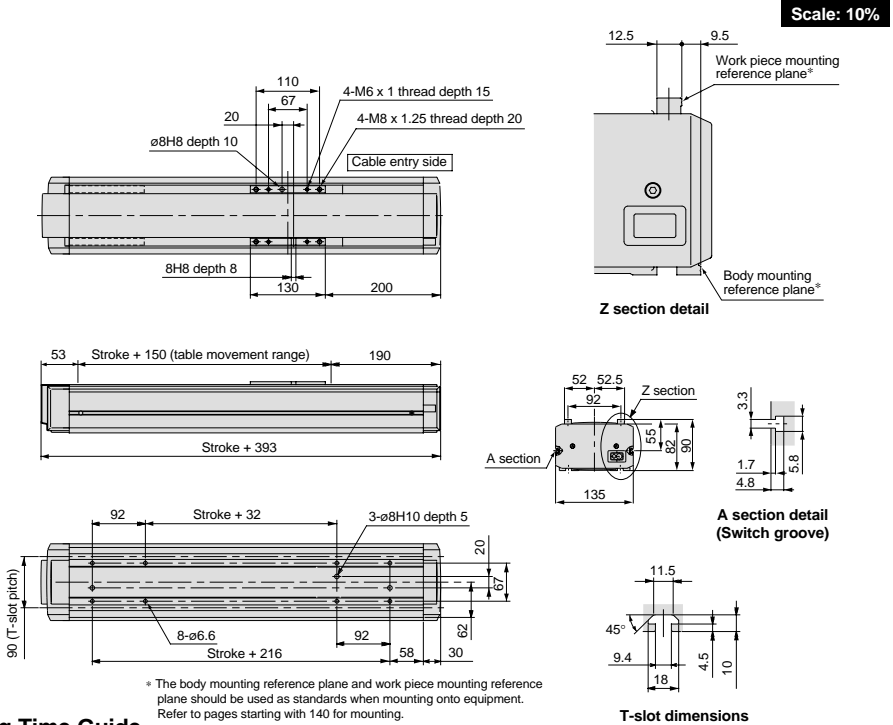
Regenerative energy = Motor coil energy consumption

+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

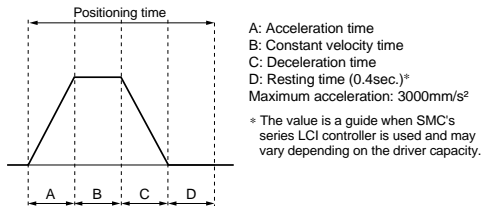
Dimensions/LJ1H20□2□NF(X10)



Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	125	0.5	0.6	1.3	2.9	5.3
	250	0.5	0.6	0.9	1.7	2.9

* Values will vary slightly depending on the operating conditions.



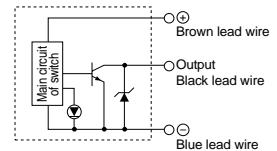
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

- * For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.
- * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H20 **G** **2** **1** **NA** — Stroke **K** — **F** **W** — **X10**

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

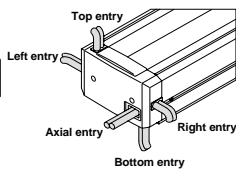
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

NH	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor) kg			7.5	8.7	9.9	11.0	12.4	13.5
	Operating temperature range °C	5 to 40 (with no condensation)							
	Work load kg			8					
	Rated thrust N			180					
	Maximum speed mm/s			500					
	Positioning repeatability mm			±0.05					
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅15mm, 10mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.4A						
Holding torque		0.4N·m							
Connection method		Ball screw mounting							
Switch	Model	D-Y7GL							
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less							
Regenerative absorption unit		Refer to the selection guide below.							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

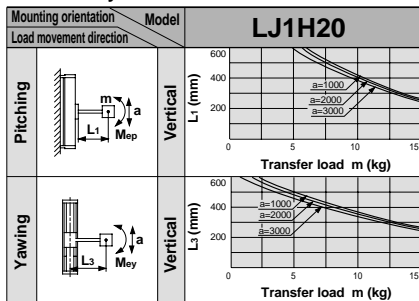
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

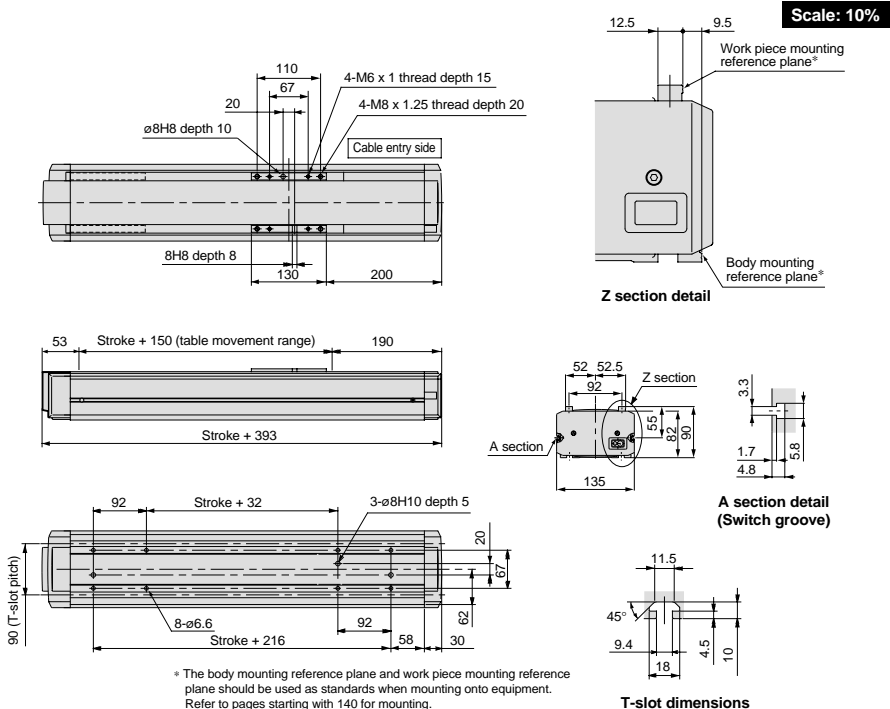
Regenerative energy = Motor coil energy consumption

+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

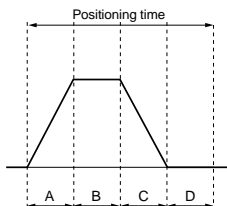
Dimensions/LJ1H20□2□NA(X10)



Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.4	10.4	30.4	60.4
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

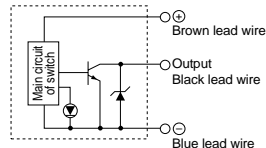
* For motor mounting dimensions, refer to the dimensions for series LJ1H20 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1H30 **G** **3** **1** **PA** — Stroke **K** — **F** **W** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

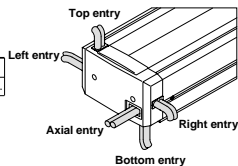
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nll	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

Standard stroke		mm	200	300	400	500	600
Performance	Body weight (without motor)	kg	15.2	17.2	19.2	21.2	23.2
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	20				
	Rated thrust	N	360				
	Maximum speed	mm/s	500				
	Positioning repeatability	mm	±0.02				
Main parts	Motor	AC servomotor (200W)					
	Encoder	Incremental system					
	Lead screw	Ground ball screw ø20mm, 10mm lead					
	Guide	High rigidity direct acting guide					
	Motor/Screw connection	With coupling					
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.5A				
Holding torque		1.0N·m					
Connection method		Ball screw mounting					
Switch	Model	D-Y7GL					
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less					
Regenerative absorption unit		Refer to the selection guide below.					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

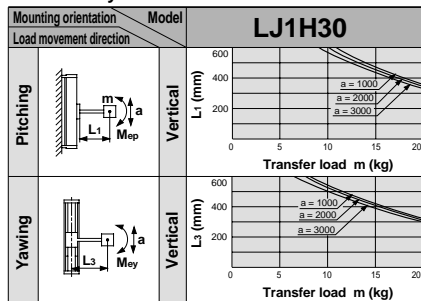
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

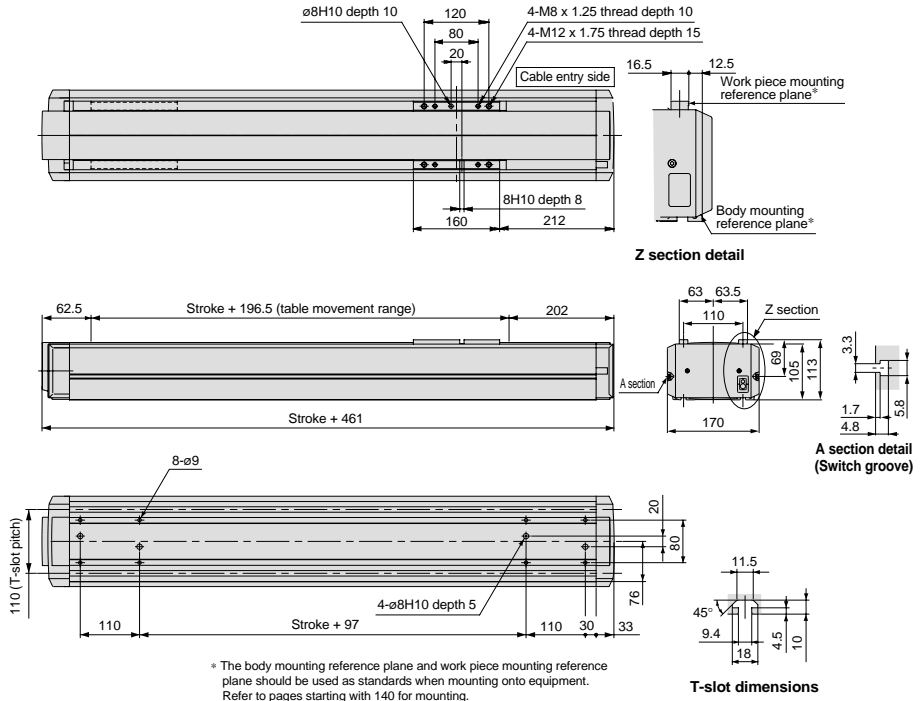
Regenerative energy = Motor coil energy consumption

- + Driver capacitor energy consumption (A)
- + Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

Dimensions/LJ1H30□3□PA(X10)

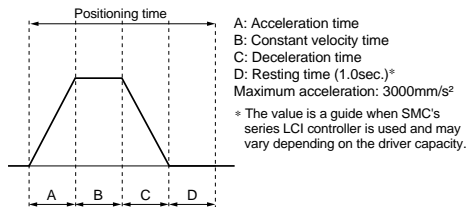
Scale: 10%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	1.1	2.0	11.0	31.0	61.0
	100	1.1	1.2	2.1	4.1	7.1
	250	1.1	1.2	1.5	2.3	3.5
	500	1.1	1.2	1.4	1.8	2.4

* Values will vary slightly depending on the operating conditions.



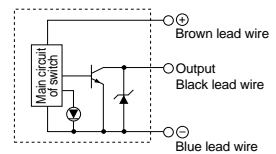
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

* For motor mounting dimensions, refer to the dimensions for series LJ1^{1/2}30 on page 143 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1H30 **G** **3** **1** **NA** — Stroke **K** — **F** **W** — **X10**

Motor specification

G	Mitsubishi Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

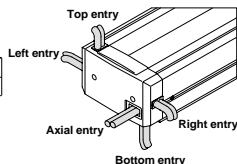
Cable entry direction

	Actuator cable	Brake cable
F	Axial	Left
R	Right	Axial
L	Left	Axial
T	Top	Axial
B	Bottom	Axial

Switch

Nll	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	200	300	400	500	600
Performance	Body weight (without motor)	kg		15.2	17.2	19.2	21.2	23.2
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	20					
	Rated thrust	N	360					
	Maximum speed	mm/s	500					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	AC servomotor (200W)						
	Encoder	Incremental system						
	Lead screw	Rolled ball screw ∅20mm, 10mm lead						
	Guide	High rigidity direct acting guide						
	Motor/Screw connection	With coupling						
	Electromagnetic brake	Specifications	De-energized operation type, Rated voltage 24VDC ±10%, 0.5A					
Holding torque		1.0N·m						
Connection method		Ball screw mounting						
Switch	Model	D-Y7GL						
	Specifications	Power supply voltage: 4.5 to 28VDC Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less Internal voltage drop: 1.5V or less						
Regenerative absorption unit			Refer to the selection guide below.					

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

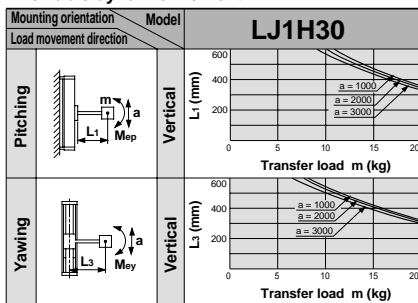
Allowable Moment (N·m)

Allowable static moment

Pitching	117
Yawing	123

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 145 for deflection data.

Regenerative Absorption Unit/Regenerative Resistor Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

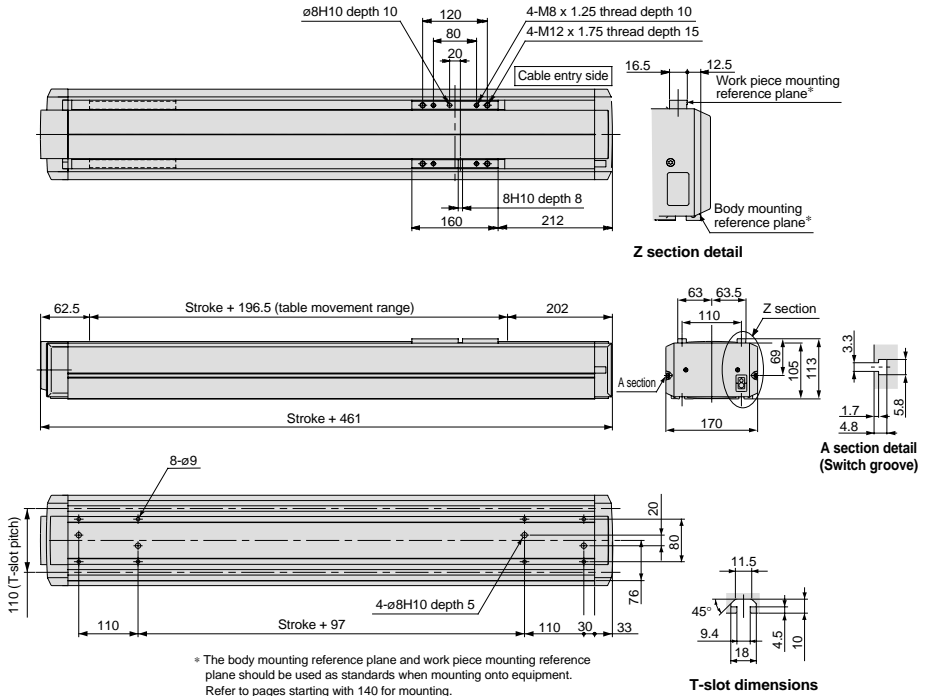
Regenerative energy = Motor coil energy consumption

- + Driver capacitor energy consumption (A)
- + Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections. Regenerative absorption units and regenerative resistors are available as options, therefore, separately order a model compatible with the motor and driver selection from the options ordering procedures on page 100.

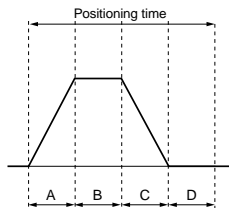
Dimensions/LJ1H30□3□NA(X10)

Scale: 10%



Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	300	600	
Speed (mm/s)	10	1.1	2.0	11.0	31.0	61.0
	100	1.1	1.2	2.1	4.1	7.1
	250	1.1	1.2	1.5	2.3	3.5
	500	1.1	1.2	1.4	1.8	2.4



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (1.0sec.)*
 Maximum acceleration: 3000mm/s²
 * The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

* Values will vary slightly depending on the operating conditions.

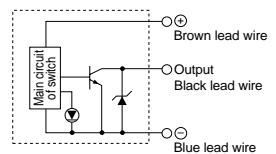
Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

* For motor mounting dimensions, refer to the dimensions for series LJ1H30 on page 143 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL





Single Axis Electric Actuator Series **LJ1S** Slider Guide

Series	Motor type	Guide type	Mounting orientation	Model	Lead screw lead mm	Page
					Slide screw	
LJ1S	Standard motor	Slider guide	Horizontal	LJ1S10	20	88
				LJ1S20	20	90
				LJ1S30	20	92
	Standard motor			LJ1S10	20	94
				LJ1S20	20	96
				LJ1S30	20	98

■ Option specifications	Page 100
■ Made to Order	101
• Dust seal specification	116
• TSUBAKI CABLEVEYOR specification	128
■ Construction	137
■ Mounting	140
■ Non-standard Motor Mounting	143
■ Deflection Data	145

Part Number Designations

LJ1 S 10 G 1 1 S C - 100 - F W - X10

Guide type

S | Slider guide

Series

10 | Series 10
20 | Series 20
30 | Series 30

Motor specification

Nil	Standard motor
G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Motor output

1	50W
2	100W
3	200W

Power supply voltage

1	100/110VAC 50/60Hz 100/115VAC 50/60Hz
2	200/220VAC 50/60Hz 200/230VAC 50/60Hz
0	Without motor

Stroke

100 | 20mm

Lead screw type

S | Slide screw

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Limit switch

Nil	None
W	B contact specification 2 pcs.

Cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor

X10

The tables above show the definition for each symbol only and cannot be used for actual model selection.

LJ1
LG1
LC1
LX
LC6D/LC6C
Switches

Standard Motor
Horizontal Mount

Series LJ1S10

Motor Output
50W

Slider
Guide

Slide Screw
Ø20mm/20mm lead

How to Order

LJ1H101 **1** **SC** — Stroke — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

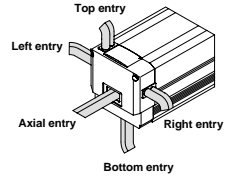
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.4	6.1	6.9	7.7	8.5	9.3	10.0	10.8	11.6	12.4
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	5									
	Rated thrust	N	24									
	Maximum speed	mm/s	300									
Main parts	Motor		AC servomotor (50W)									
	Encoder		Incremental system									
	Lead screw		Slide screw Ø20mm, 20mm lead									
	Guide		Slider guide									
	Motor/Screw connection		With coupling									
Controller	Model		LC1-1B1S□□□□ (Refer to page 185 for details.)									

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550, 650, 750, 850, 950
Example) LJ1S1011SC-150-F2-X2

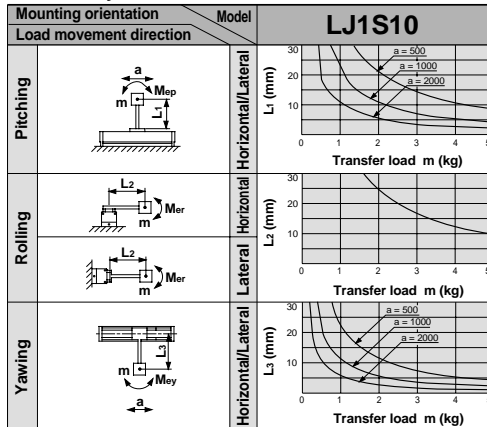
Allowable Moment (N·m)

Allowable static moment

Pitching	1.3
Rolling	1.5
Yawing	0.7

- m : Transfer load (kg)
- a : Work piece acceleration (mm/s²)
- Me: Dynamic moment
- L : Overhang to work piece center of gravity (mm)

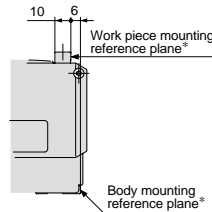
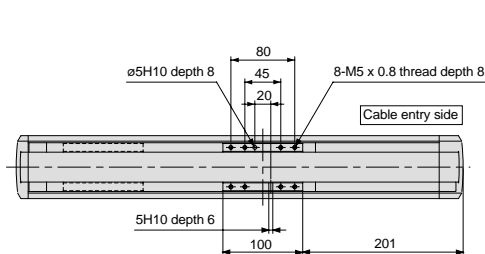
Allowable dynamic moment



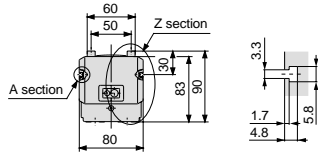
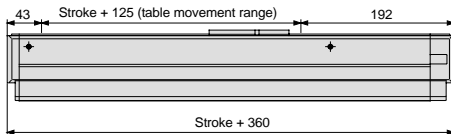
Refer to page 145 for deflection data.

Dimensions/LJ1S10□SC

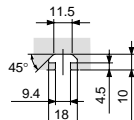
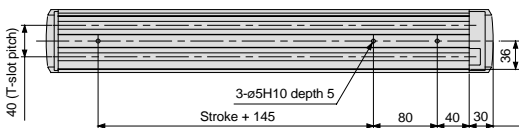
Scale: 15%



Z section detail



A section detail (Switch groove)



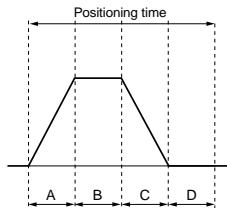
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.4	10.4	50.4	100.4
	100	0.4	0.5	1.4	5.4	10.4
	150	0.4	0.5	1.1	3.8	7.1
	300	0.4	0.5	0.8	2.2	3.8

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.1sec.)
 Maximum acceleration: 2000mm/s²

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Standard Motor

Horizontal Mount

Series LJ1S20

Motor Output

100W

Slider Guide

Slide Screw

∅20mm/20mm lead

How to Order

LJ1S202 **1** **SC** — Stroke — **F** **2**

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

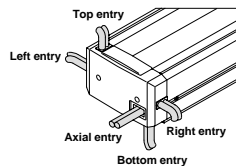
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

	Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight	kg	6.8	7.9	9.0	10.1	11.1	12.2	13.3	14.3	15.4	16.4	18.6
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	10										
	Rated thrust	N	50										
	Maximum speed	mm/s	300										
Main parts	Motor		AC servomotor (100W)										
	Encoder		Incremental system										
	Lead screw		Slide screw ∅20mm, 20mm lead										
	Guide		Slider guide										
	Motor/Screw connection		With coupling										
Controller	Model		LC1-1B2S□-□□ (Refer to page 185 for details.)										

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
 Applicable strokes:150, 250, 350, 450, 550, 650, 750, 850, 950, 1050
 Example) LJ1S2021SC-150-F2-X2

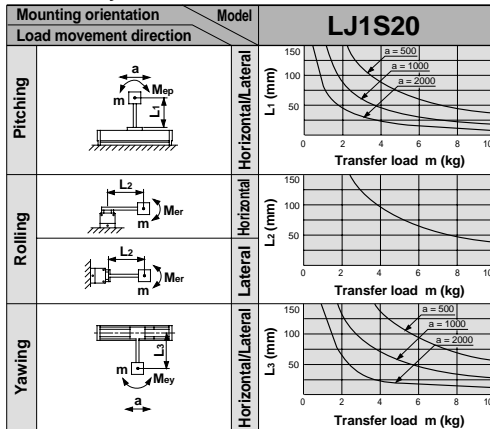
Allowable Moment (N·m)

Allowable static moment

Pitching	5.5
Rolling	6.0
Yawing	8.5

m : Transfer load (kg)
 a : Work piece acceleration (mm/s²)
 Me : Dynamic moment
 L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

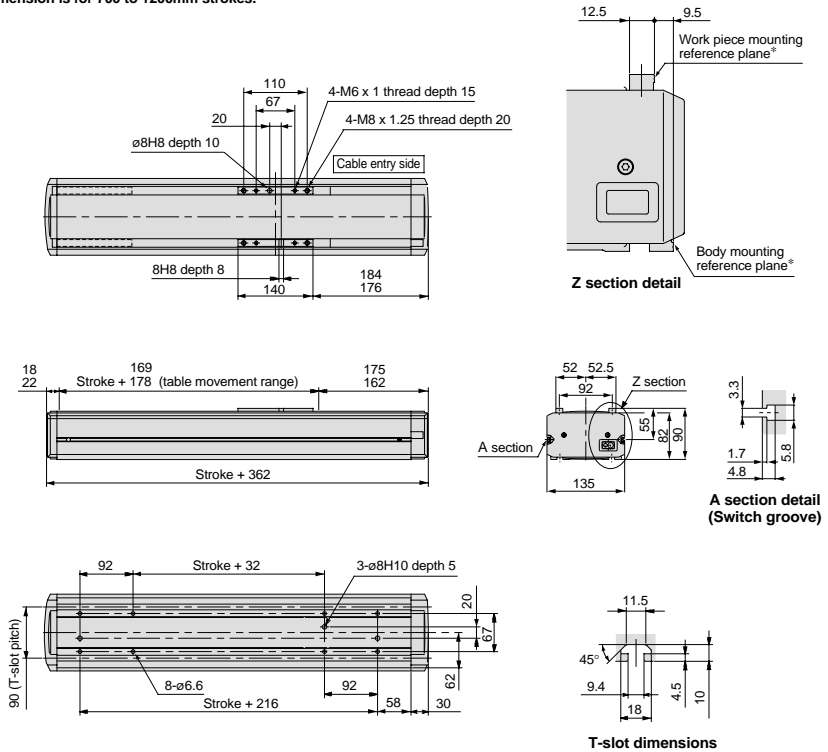


Refer to page 145 for deflection data.

Dimensions/LJ1S20□SC

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes.

Scale: 10%

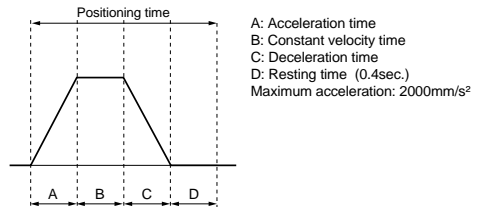


* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	600	1200
Speed (mm/s)	10	0.6	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	150	0.5	0.6	1.2	4.5	8.5
	300	0.5	0.6	0.9	2.6	4.6

* Values will vary slightly depending on the operating conditions.



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1S303 1 SC Stroke F 2

Power supply voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

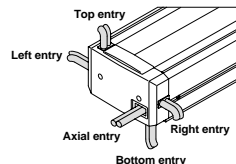
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction



Specifications

	Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight	kg	14.4	16.2	18.0	19.8	21.5	25.7	29.7	33.3	38.7
	Operating temperature range	°C	5 to 40 (with no condensation)								
	Work load	kg	20								
	Rated thrust	N	50								
	Maximum speed	mm/s	300								
Main parts	Motor		AC servomotor (200W)								
	Encoder		Incremental system								
	Lead screw		Slide screw ø25mm, 20mm lead								
	Guide		Slider guide								
	Motor/Screw connection		With coupling								
Controller	Model		LC1-1B3S□-□□ (Refer to page 185 for details.)								

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 250, 350, 450, 550, 650, 700, 750, 850, 900, 950, 1050, 1100, 1150, 1250, 1300, 1350, 1400, 1450
Example) LJ1S3031SC-250-F2-X2

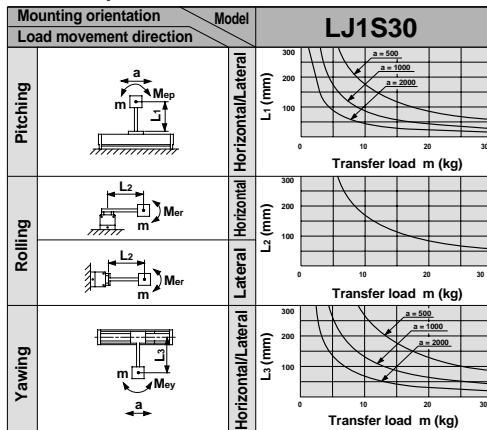
Allowable Moment (N·m)

Allowable static moment

Pitching	26.6
Rolling	40.2
Yawing	25.8

- m : Transfer load (kg)
- a : Work piece acceleration (mm/s²)
- Me: Dynamic moment
- L : Overhang to work piece center of gravity (mm)

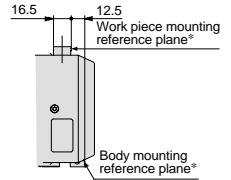
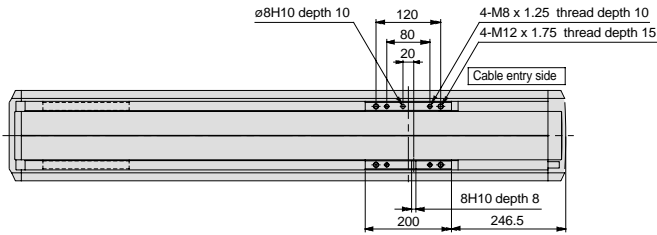
Allowable dynamic moment



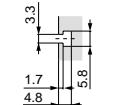
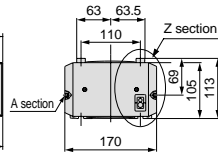
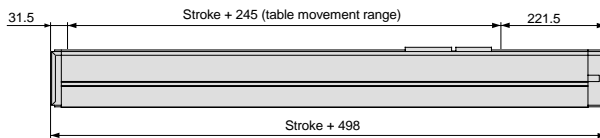
Refer to page 145 for deflection data.

Dimensions/LJ1S303□SC

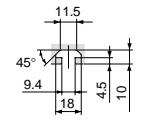
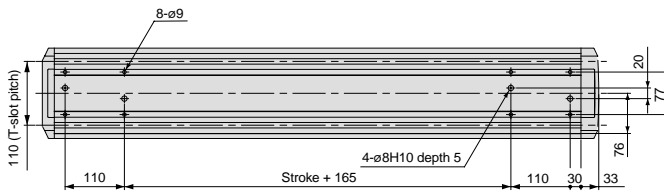
Scale: 10%



Z section detail



A section detail (Switch groove)



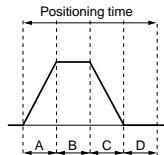
T-slot dimensions

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	750	1500	
Speed (mm/s)	10	0.5	2.1	11.1	76.1	151.1
	100	1.1	1.2	2.1	8.6	16.1
	500	1.1	1.2	1.6	4.2	7.2
	1000	1.1	1.2	1.5	2.8	4.3

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LJ1S10 **G** 1 1 **SC** — Stroke — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

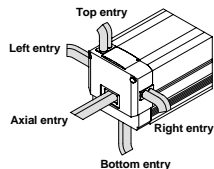
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction



Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg		5.0	5.7	6.5	7.3	8.1	8.9	9.6	10.4	11.2	12.0
	Operating temperature range	°C		5 to 40 (with no condensation)									
	Work load	kg		5									
	Maximum speed	mm/s		300									
Main parts	Positioning repeatability	mm		±0.1									
	Motor			AC servomotor (50W)									
	Encoder			Incremental system									
	Lead screw			Slide screw ø20mm, 20mm lead									
	Guide			Slider guide									
Switch	Motor/Screw connection			With coupling									
	Model			D-Y7GL									
	Specifications			Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less									

Intermediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

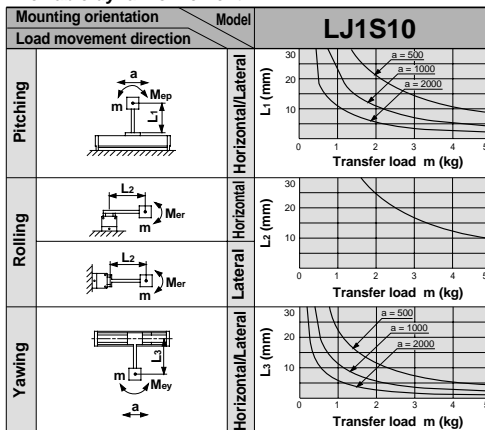
Allowable Moment (N·m)

Allowable static moment

Pitching	1.3
Rolling	1.5
Yawing	0.7

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

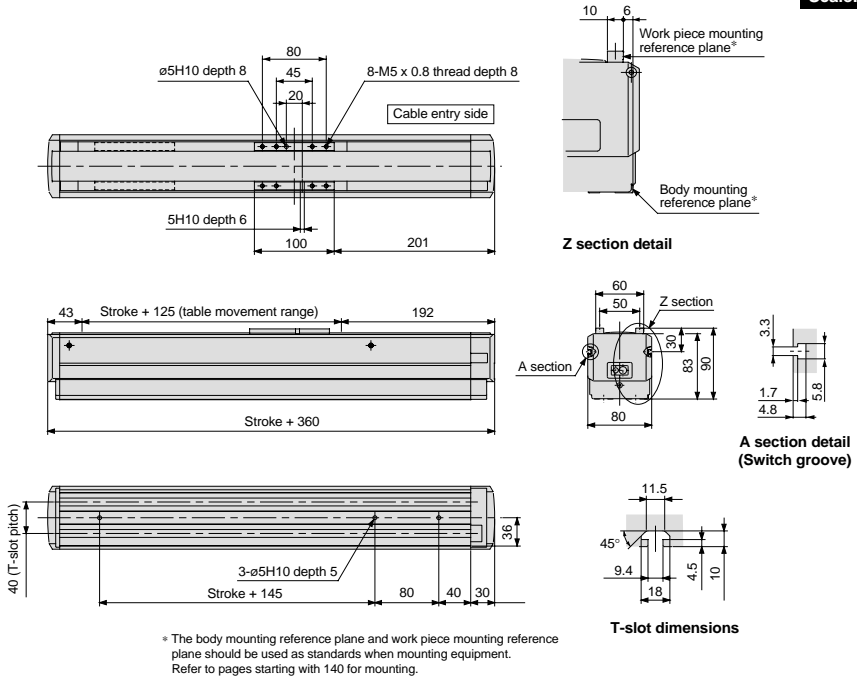
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1S10□1□SC(X10)

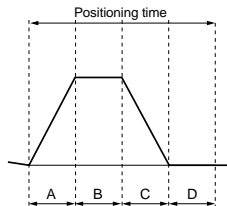
Scale: 15%



Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.4	10.4	50.4	100.4
	100	0.4	0.5	1.4	5.4	10.4
	150	0.4	0.5	1.1	3.8	7.1
	300	0.4	0.5	0.8	2.2	3.8

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.1sec.)*
 Maximum acceleration: 2000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	50	100/115	MSM5AZP1A	MSD5A1P1E
		200/230		MSD5A3P1E
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP
		200/230	SGME-A5AF12	SGDE-A5AP

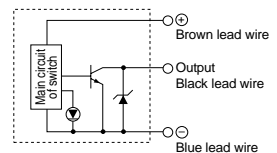
* For motor mounting dimensions, refer to the dimensions for series LJ1S10 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

LJ1S20 **G** 2 **1** **SC** — Stroke — **F** **W** — X10

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

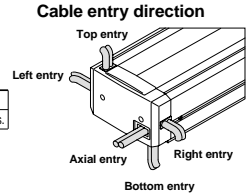
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.



Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight (without motor)	kg	6.3	7.4	8.5	9.6	10.6	11.7	12.8	13.8	14.9	15.9	18.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	10										
	Maximum speed	mm/s	300										
	Positioning repeatability	mm	±0.1										
Main parts	Motor	AC servomotor (100W)											
	Encoder	Incremental system											
	Lead screw	Slide screw Ø20mm, 20mm lead											
	Guide	Slider guide											
	Motor/Screw connection	With coupling											
Switch	Model	D-Y7GL											
	Specifications	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

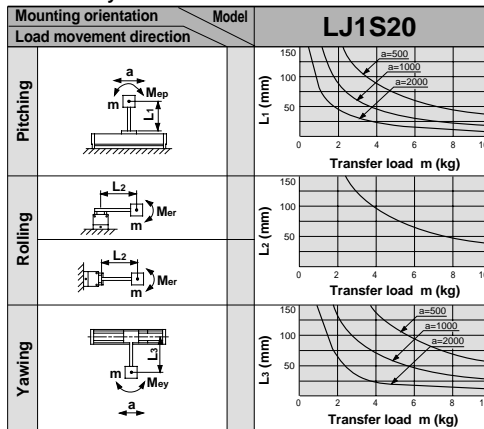
Allowable Moment (N·m)

Allowable static moment

Pitching	5.5
Rolling	6.0
Yawing	8.5

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)


Allowable dynamic moment



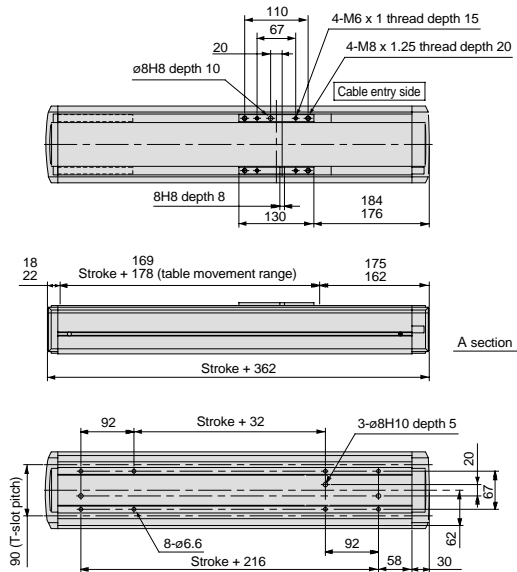
Refer to page 145 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LJ1S20**

Dimensions/LJ1S20□2□SC(X10)

 When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes.

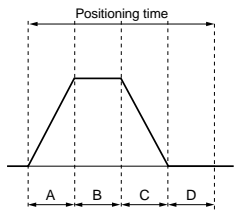
Scale: 10%



* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 140 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.5	10.5	50.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	150	0.5	0.6	1.2	4.5	8.5
	300	0.5	0.6	0.9	2.6	4.6



* Maximum acceleration: 2000mm/s²
 * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

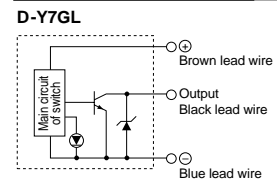
* Values will vary slightly depending on the operating conditions.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions for series LJ1S20 on page 143 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



LJ1
LG1
LC1
LX
LC6D/LC6C
Switches

How to Order

LJ1S30 **G** **3** **1** **SC** — Stroke — **F** **W** — X10

Motor specification

G	Matsumita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

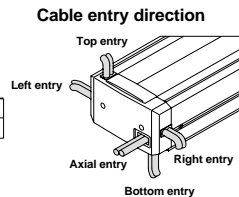
1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Switch

Nil	None
W	N.C. (B contact) 2 pcs.



Specifications

		Standard stroke	mm	200	300	400	500	600	800	1000	1200	1500
Performance	Body weight (without motor)	kg		13.3	15.1	16.9	18.7	20.4	24.6	28.6	32.2	37.6
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	20									
	Maximum speed	mm/s	300									
Main parts	Positioning repeatability	mm	±0.1									
	Motor	AC servomotor (200W)										
	Encoder	Incremental system										
	Lead screw	Slide screw ∅25mm, 20mm lead										
	Guide	Slider guide										
Switch	Motor/Screw connection	With coupling										
	Model	D-Y7GL										
Specifications		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										

Immediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

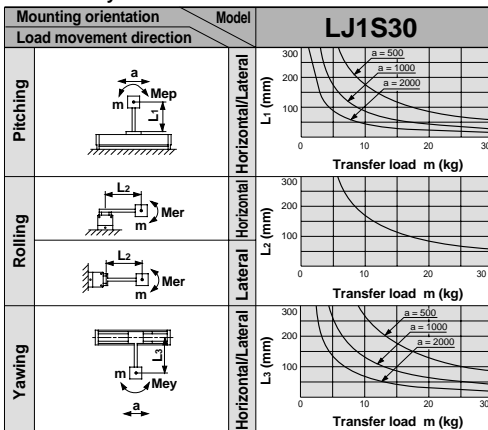
Allowable Moment (N·m)

Allowable static moment

Pitching	26.6
Rolling	40.2
Yawing	25.8

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

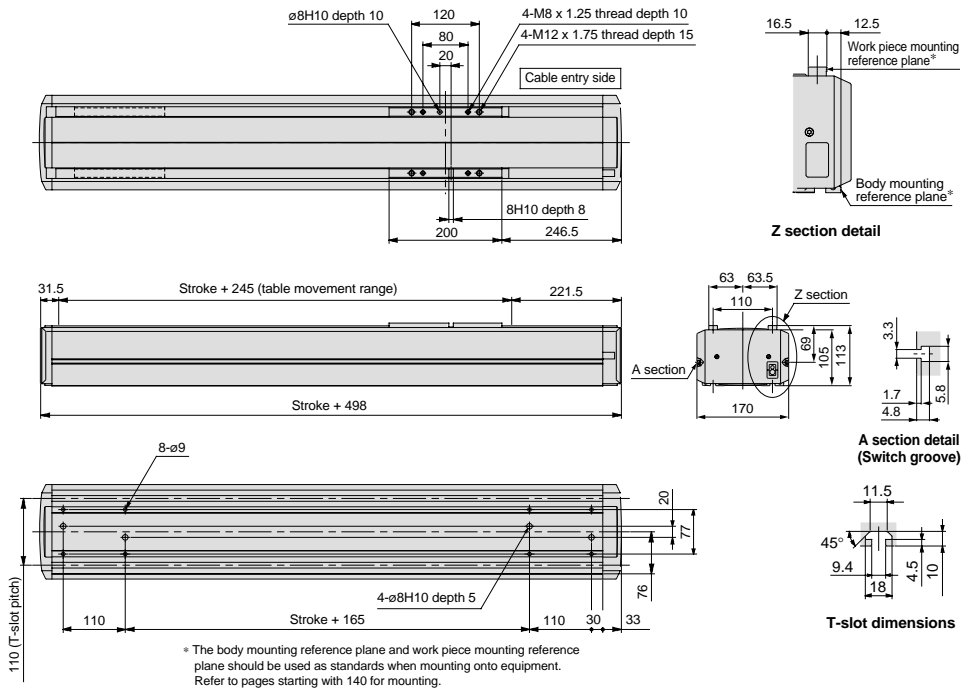
Allowable dynamic moment



Refer to page 145 for deflection data.

Dimensions/LJ1S30□3□SC(X10)

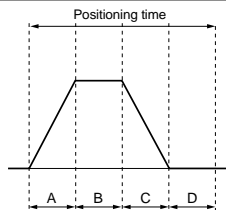
Scale: 10%



Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	750	1500	
Speed (mm/s)	10	0.5	2.1	11.1	76.1	151.1
	100	1.1	1.2	2.1	8.6	16.1
	250	1.1	1.2	1.6	4.2	7.2
	500	1.1	1.2	1.5	2.8	4.3

* Values will vary slightly depending on the operating conditions.



Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP
		200/230	SGME-02AF12	SGDE-02AP

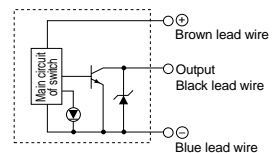
* For motor mounting dimensions, refer to the dimensions for series LJ1S30 on page 143 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

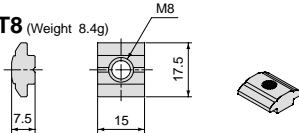
D-Y7GL



T-nuts for mounting electric actuators

Use T-nuts for T-slot mounting of an actuator. When mounting by means of T-nuts alone, the quantity of nuts indicated below should be used as a minimum.

Model **LJ1-T8** (Weight 8.4g)



T-nut quantity

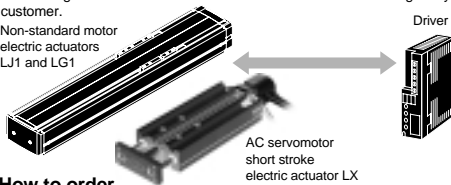
Model	Quantity
LJ1$\frac{1}{2}$10	200mm stroke or less: 6 pcs.
	300mm stroke or more: 8 pcs.
LJ1$\frac{1}{2}$20	8 pcs.
LJ1$\frac{1}{2}$30	8 pcs.

* Only series LJ1 $\frac{1}{2}$ 10 has the T-nuts built into the body.

Non-standard Motor Cables

These are cables for connecting non-standard motors and drivers. Cable lengths other than those shown below should be arranged by the customer.

Non-standard motor electric actuators LJ1 and LG1



How to order

LJ1 - 1 - G 05 B

Compatible model

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Brake

Nil	Without brake
B	With brake

Cable length

05	5m
-----------	----

Applicable cables

LJ1 (non-standard motor), LXP/LXS (AC servomotor)

Model	Manufacturer part no.
LJ1-1-G05¹	MFCA0050AEB (for motor)
	MFCA0050EAB (for encoder)
LJ1-1-G05B	MFCA0050FAB (for motor)
	MFCA0050AEB (for encoder)
	MFMCB0050CET (for brake)
LJ1-1-R05	(for motor) ²
	MR-JCCBL5M (for encoder)
LJ1-1-Y05³	DP9320081-2 (for motor)
	DP9320089-2 (for encoder)
LJ1-1-Y05B	DP9320083-2 (for motor/brake)
	DP9320089-2 (for encoder)

LXF (AC servomotor by Mitsubishi Electric Corporation)

Model	Manufacturer part no.
LJ1-1-RJ-05	MR-JRCBL5M-H (motor/encoder/brake)

*1 When the Matsushita Electric Industrial Co., Ltd. motor driver is selected, in addition to the cable, a power connector (MOLEX 5569 - 10R) and an interface connector (Sumitomo/3-M Limited 10126-3000VE) are also required.

*2 A cable is not provided for the Mitsubishi Electric Corporation motor and brake, and therefore, the customer should arrange a 4 core, 0.75mm² electric cable.

*3 When the Yaskawa Electric Corporation motor driver is selected, a digital operator and PC are required for selecting the various parameters.

Please refer to the technical literature of each manufacturer for further details.

Non-standard Motor Driver Regenerative Absorption Unit/Regenerative Resistor

This is a regenerative absorption unit and regenerative resistor for a non-standard motor. Make a selection providing an allowance beyond the calculated capacity.

How to order

LJ1 - 7 - G

Compatible model

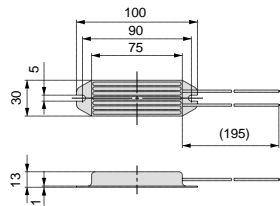
G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Applicable types

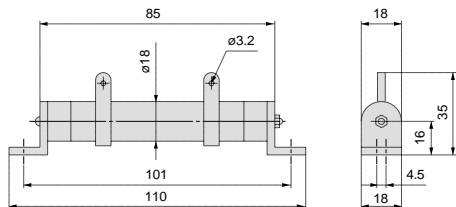
LJ1 (non-standard motor), LXP/LXS (AC servomotor)

Model	Manufacturer part no.
LJ1-7-G	DVO P0820
LJ1-7-R	MR-RB013
LJ1-7-Y	JUSP-RG08

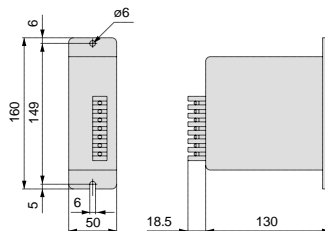
LJ1-7-G/Matsushita Electric Industrial Co., Ltd.



LJ1-7-R/Mitsubishi Electric Corporation

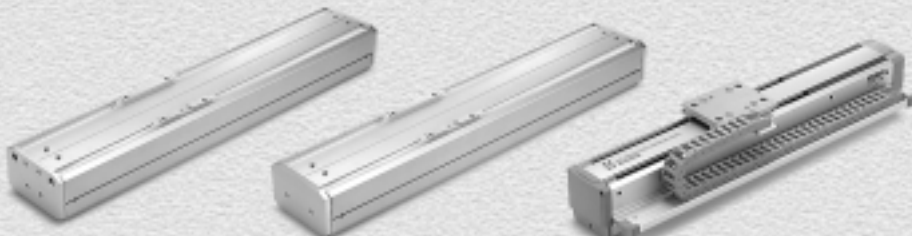


LJ1-7-Y/Yaskawa Electric Corporation



Electric Actuator *Series LJ1H/LJ1S*

Made to Order Specifications



Clean room specification

Dust seal specification

TSUBAKI CABLEVEYOR specification

■ Clean room specification (-X60)	
LJ1H 10/20/30 (Horizontal mount/Vertical mount)	— Page 104
■ Dust seal specification (-X70)	
LJ1H 10/20/30 (Horizontal mount/Vertical mount)	— 110
LJ1S 10/20/30 (Horizontal mount)	— 116
■ TSUBAKI CABLEVEYOR specification (-X40)	
LJ1H 10/20/30 (Horizontal mount)	— 122
LJ1S 10/20/30 (Horizontal mount)	— 128

LJ1

LG1

LC1

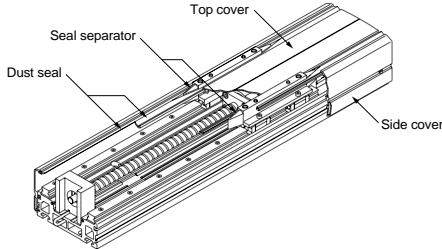
LX

LC6D/LC6C

Switches

Clean Room Specification (-X60)

Change of materials, anti-corrosive treatment, use of a special grease, and vacuum cleaning of the inside of the actuator allow operation in a clean room.



Particulate Generation Performance

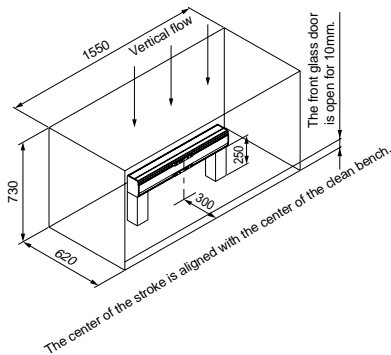
Test method

An actuator was placed inside a clean bench and particle concentration was measured at each neighboring point.

Test environment: <Clean bench> Nippon Airtek: VS-1603L
 <Size> W x L x H = 620mm x 1550mm x 730mm
 <Clean level> Fed-st class 10
 <Down flow velocity> Approx. 0.3m/s

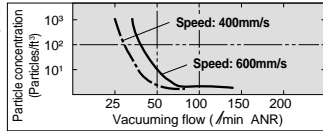
Test equipment: <Test equipment> Laser particle counter
 Hitachi Electric Engineering: TS-3500
 <Target particle size> 0.17 μ m or larger
 <Sampling flow rate> 28 l/min (ANR)
 <Sampling time> 1min
 <Holding time> 2min
 <Number of tests> 6

Actuator placement and test points

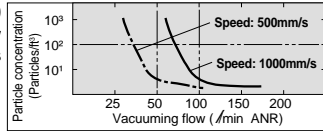


Vacuating Graphs

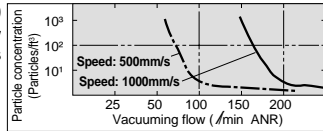
LJ1H10 Vacuating flow characteristics



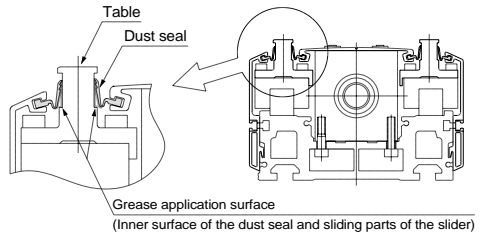
LJ1H20 Vacuating flow characteristics



LJ1H30 Vacuating flow characteristics



Grease Application Areas



⚠ Caution

① Maintenance of the greased parts of the dust seal is necessary.

With this specification, a vacuum grease is applied to the sliding parts of the dust seal in order to prevent particulate generation. Maintenance should be performed at 4000km, 4 million reciprocations or within 6 months, whichever occurs first.

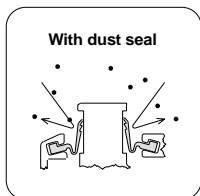
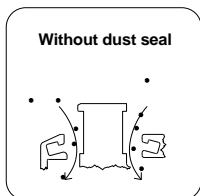
Specified grease: Barrierta IEL/V [fluorine grease (70g) for vacuum equipment manufactured by NOK Kluber]

② A down flow environment with a flow velocity of 0.3m/s or more is required.

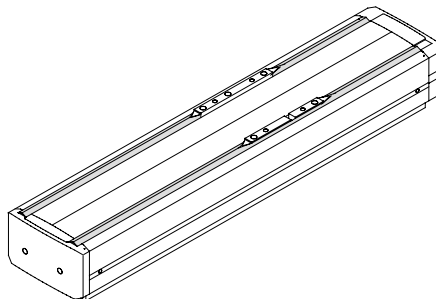
The particulate generation performance of this specification has been tested in the environment shown on the left.

Dust Seal Specification (-X70)

The dust seal (dust cover) prevents the entry of dust, paper dust and scraps, etc.



Dust Cover



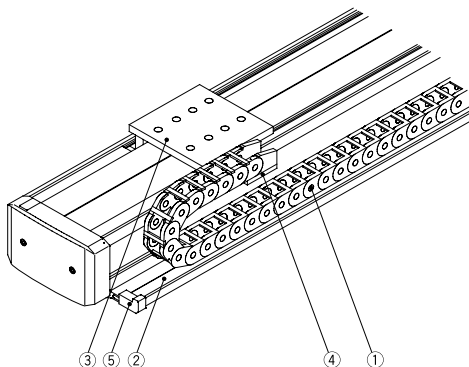
Note 1) Dust seal material: Polyurethane
Consult SMC for details.

Note 2) Measures for use in a mist environment are not provided.
Also, depending on the environment, it may not be possible to use the dust seal. Consult SMC.

TSUBAKI CABLEVEYOR Specification (-X40)

Able to compactly arrange supporting guides for cables and hoses.

Construction



Parts list

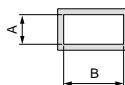
No.	Description	Material	Note
1	TSUBAKI CABLEVEYOR	—	—
2	Cable side cover	Aluminum alloy	—
3	Mounting plate	Aluminum alloy	—
4	Cable flange	Aluminum alloy	—
5	End cap	EP	—

Precautions on handling of the TSUBAKI CABLEVEYOR

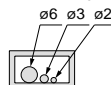
- When handling, connecting or disconnecting the TSUBAKI CABLEVEYOR:
 - Wear suitable clothing and appropriate protective gear (safety glasses, gloves, safety shoes, etc.).
 - Use suitable tools.
 - Provide support so that the TSUBAKI CABLEVEYOR and parts do not move freely.
- Implement protective measures (safety cover, etc.).
- Be sure to turn off the power and ensure that it cannot be turned on accidentally before installation, removal or maintenance of the equipment.
- In order to prevent secondary accidents, put the surrounding area in good order and operate under safe conditions.
- The total cross-sectional area of the cable inserted into the TSUBAKI CABLEVEYOR should be no more than 60% of the TSUBAKI CABLEVEYOR cross-sectional area.
- The minimum clearance between the cable and TSUBAKI CABLEVEYOR internal width should be "the larger of 10% of the cable O.D. or 2mm".

TSUBAKI CABLEVEYOR cross-sectional dimensions (mm)

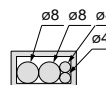
Series	A	B
LJ1 ¹⁰ ₁₀	10	20
LJ1 ²⁰ ₂₀	10	20
LJ1 ³⁰ ₃₀	14	40



Example) For LJ1¹⁰₁₀



Correct: 60% or less



Incorrect: More than 60%

How to Order

Motor output: 50W

Horizontal Mount Specification **LJ1H10** 1 1 P B — Stroke — F 2 X60

Vertical Mount Specification **LJ1H10** 2 1 P H — Stroke — K — F 2 X60

Motor specification

NII	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 100W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Lead screw type

Refer to Table ① to the right.

P	Ground ball screw
N	Rolled ball screw

Refer to Table ① below.

With brake

Cable entry direction: Axial

Lead screw lead

Refer to Table ① below.

H	8mm
B	12mm

Clean room specification

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

NII	None
W	N.C. (B contact) 2 pcs.

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)				
	100	200	300	400	500
LJ1H10 1 PB -Stroke-F 2 -X60	●	●	●	●	●
LJ1H10 1 NB -Stroke-F 2 -X60	●	●	●	●	●
LJ1H10 2 PH -Stroke-K-F 2 -X60	●	●	●	●	●
LJ1H10 2 NH -Stroke-K-F 2 -X60	●	●	●	●	●
LJ1H10 2 PB -Stroke-K-F 2 -X60	●	●	●	●	●
LJ1H10 2 NB -Stroke-K-F 2 -X60	●	●	●	●	●

Combinations other than the above cannot be manufactured.

Specifications

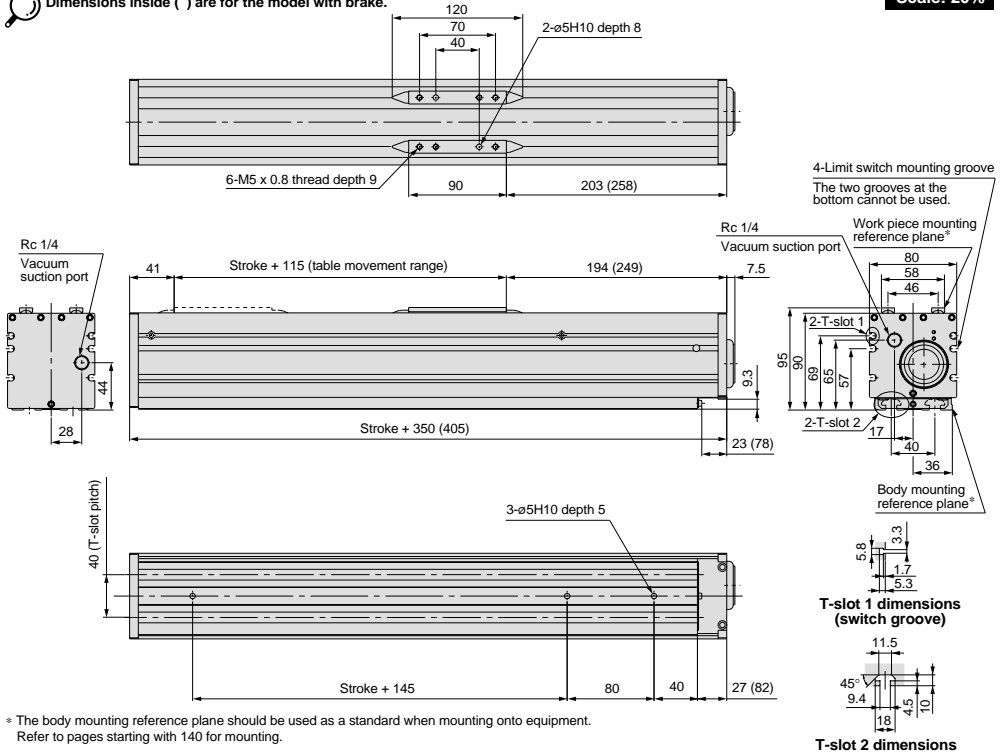
		Standard stroke mm		100	200	300	400	500
Weight kg	Without brake	With motor (standard)		5.4	6.2	7.0	7.7	8.5
		Without motor (non-standard)		5.0	5.8	6.6	7.3	8.1
	With brake	With motor (standard)		5.9	6.7	7.5	8.2	9.0
		Without motor (non-standard)		5.5	6.3	7.1	7.8	8.6
Operating temperature range °C		5 to 40 (with no condensation)						
Work load kg	Horizontal specification	12mm lead	50W	10				
	Vertical specification	12mm lead	100W	5				
		8mm lead	100W	10				
Maximum speed mm/s	Horizontal specification	12mm lead	50W	600				
	Vertical specification	12mm lead	100W	600				
		8mm lead	100W	400				
Positioning repeatability mm	Rolled ball screw		±0.05					
	Ground ball screw		±0.02					
Motor output	Horizontal specification		AC servomotor (50W)					
	Vertical specification		AC servomotor (100W) with brake					
Lead screw	Black chroming + Special fluoro resin coating and grease application	Horizontal specification	Rolled ball screw	ø12mm, 12mm lead				
		Ground ball screw	ø12mm, 12mm lead					
	Vertical specification	Rolled ball screw	ø12mm, 12mm/8mm lead					
		Ground ball screw	ø12mm, 12mm/8mm lead					
Guide		High rigidity direct acting guide, Stainless steel rail, AFE grease (made by THK) applied						
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less						
Table specification		With dust seal						
Grease for dust seal application		Fluorine grease for vacuum equipment made by NOK Kluber						
Grease maintenance schedule		Traveling distance of 4000km, 4 million reciprocations, or operation period of 6 months, whichever comes first						
Vacuum suction port		Rc 1/4, one each on both axial surfaces Seal the unused port with a plug.						
Suction flow rate		50 l/min (ANR)						

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1H10□ $\frac{1}{2}$ (X60)

Scale: 20%

Dimensions inside () are for the model with brake.



* The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

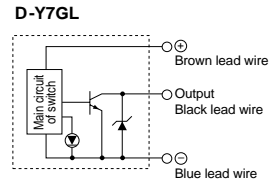
Compatible Motors

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	50	100/110 200/220	—	LC1-1B1H1-□□ LC1-1B1H2-□□
		With brake (Vertical specification)	100	100 200	—	LC1-1B1V□1-□□ LC1-1B1V□2-□□
		Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	50	100/115 200/230
Non-standard Mitsubishi Electric Corporation motor	R	With brake (Vertical specification)	100	100/115 200/230	MSM011P1B MSM012P1B	MSD011P1E MSD013P1E
		Without brake (Horizontal specification)	50	100/115 200/230	HC-PQ053	MR-C10A1 MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	With brake (Vertical specification)	100	100/115 200/230	SGME-01BF12B SGME-01AF12B	SGDE-01BP SGDE-01AP
		Without brake (Horizontal specification)	50	100/115 200/230	SGME-A5BF12 SGME-A5AF12	SGDE-A5BP SGDE-A5AP
		Without brake (Horizontal specification)	50	100/115 200/230	SGME-A5BF12 SGME-A5AF12	SGDE-A5BP SGDE-A5AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



LJ1
LG1
LC1
LX
LC6D/LC6C
Switches

How to Order

Horizontal Mount Specification

LJ1H20 2 1 P A — Stroke — F 2 — X60

Vertical Mount Specification

LJ1H20 2 1 P F — Stroke — K — F 2 — X60

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor specification
Motor output: 100W
Power supply voltage

Refer to Table ① below.

Lead screw lead
Refer to Table ① below.

F	5mm
A	10mm
C	20mm

With brake
Cable entry direction : Axial

Lead screw type
Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw

Clean room specification
Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)									
	100	200	300	400	500	600	700	800	900	1000
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PA-Stroke-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NA-Stroke-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PC-Stroke-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NC-Stroke-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PF-Stroke-K-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NF-Stroke-K-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PA-Stroke-K-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NA-Stroke-K-F <input type="checkbox"/> X60	●	●	●	●	●	●	●	●	●	●

Combinations other than the above cannot be manufactured.

Specifications

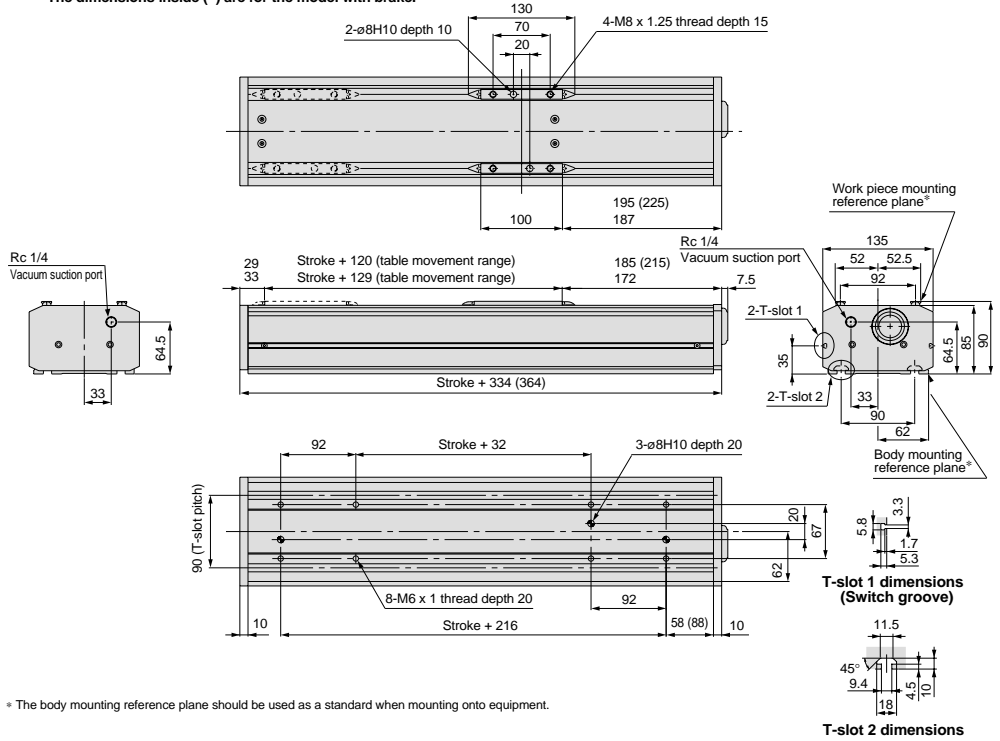
Standard stroke mm			100	200	300	400	500	600	700	800	900	1000
Weight kg	Without brake	With motor	7.9	9.1	10.3	11.4	12.8	13.9	15.1	16.3	17.5	18.7
		Without motor	7.4	8.6	9.8	10.9	12.3	13.4	14.6	15.8	17.0	18.2
	With brake	With motor	8.6	9.8	11.0	12.1	13.5	14.6	—	—	—	—
		Without motor	8.1	9.3	10.5	11.6	13.0	14.1	—	—	—	—
Operating temperature range °C		5 to 40 (with no condensation)										
Work load kg	Horizontal specification	10mm lead	30				—					
		20mm lead	—				15					
	Vertical specification	5mm lead	15				—					
		10mm lead	8				—					
Maximum speed mm/s	Horizontal specification	10mm lead	500				—					
		20mm lead	—				1000		930	740	600	500
	Vertical specification	5mm lead	250				—					
		10mm lead	500				—					
Positioning repeatability mm	Rolled ball screw		±0.05									
	Ground ball screw		±0.02									
Motor output	Horizontal specification		AC servomotor (100W)									
	Vertical specification		AC servomotor (100W) with brake									
Lead screw	Horizontal specification	Black chroming	ø15mm, 10mm lead		—							
		Special fluoro resin coating and grease application	—		ø15mm, 20mm lead							
	Vertical specification	Rolled ball screw	ø15mm, 5mm lead		—							
		Ground ball screw	ø15mm, 10mm lead		—							
Guide		High rigidity direct acting guide, Stainless steel rail, AFE grease (made by THK) applied										
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										
Table specification		With dust seal										
Grease for dust seal application		Fluorine grease for vacuum equipment made by NOK Kluber										
Grease maintenance schedule		Traveling distance of 4000km, 4 million reciprocations, or operation period of 6 months, whichever comes first										
Vacuum suction port			Rc 1/4, one each on both axial surfaces Seal the unused port with a plug.									
	Stroke: 500mm or less	Suction at either end or both ends.										
		Stroke: 500mm or more	Suction at both ends.									
Suction flow rate	Speed: 500mm/s or less		50 /min (ANR)									
	Speed: 500mm/s or more		100 /min (ANR)									

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1H20□2 (X60)

Scale: 15%

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes. The dimensions inside () are for the model with brake.



* The body mounting reference plane should be used as a standard when mounting onto equipment.

Compatible Motors

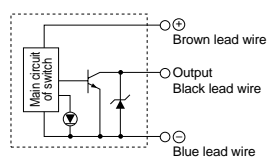
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	100	100/110 200/220	—	LC1-1B2H1-□□ LC1-1B2H2-□□
		With brake (Vertical specification)	100	100 200	—	LC1-1B2V□1-□□ LC1-1B2V□2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	100	100/115 200/230	MSM011P1A	MSD011P1E MSD013P1E
		With brake (Vertical specification)	100	100/115 200/230	MSM011P1B MSM012P1B	MSD011P1E MSD013P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	100	100/115 200/230	HC-PQ013	MR-C10A1 MR-C10A
		With brake (Vertical specification)	100	100/115 200/230	HC-PQ13B	MR-C10A1 MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	100	100/115 200/230	SGME-01BF12 SGME-01AF12	SGDE-01BP SGDE-01AP
		With brake (Vertical specification)	100	100/115 200/230	SGME-01BF12B SGME-01AF12B	SGDE-01BP SGDE-01AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

Lead screw lead: 25mm

Horizontal Mount Specification LJ1H30 3 1 P D — Stroke — F 2 — **X60**

Vertical Mount Specification LJ1H30 3 1 P A — Stroke — K — F 2 — **X60**

Motor specification

NII	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 200W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Refer to Table ① below.

Stroke

Refer to Table ① below.

Lead screw lead: 10mm

Refer to Table ① below.

Lead screw type

P	Ground ball screw
N	Rolled ball screw

With brake

Cable entry direction: Axial

Clean room specification

Standard motor cable length	
2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

NII	None
W	N.C. (B contact) 2 pcs.

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)								
	200	300	400	500	600	800	1000	1200	1500
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> PD-Stroke-F <input type="checkbox"/> -X60	●	●	●	●	●	●	●	●	●
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> ND-Stroke-F <input type="checkbox"/> -X60	●	●	●	●	●	●	●	●	●
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> PA-Stroke-K-F <input type="checkbox"/> -X60	●	●	●	●	●	●	●	●	●
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> NA-Stroke-K-F <input type="checkbox"/> -X60	●	●	●	●	●	●	●	●	●

Combinations other than the above cannot be manufactured.

Specifications

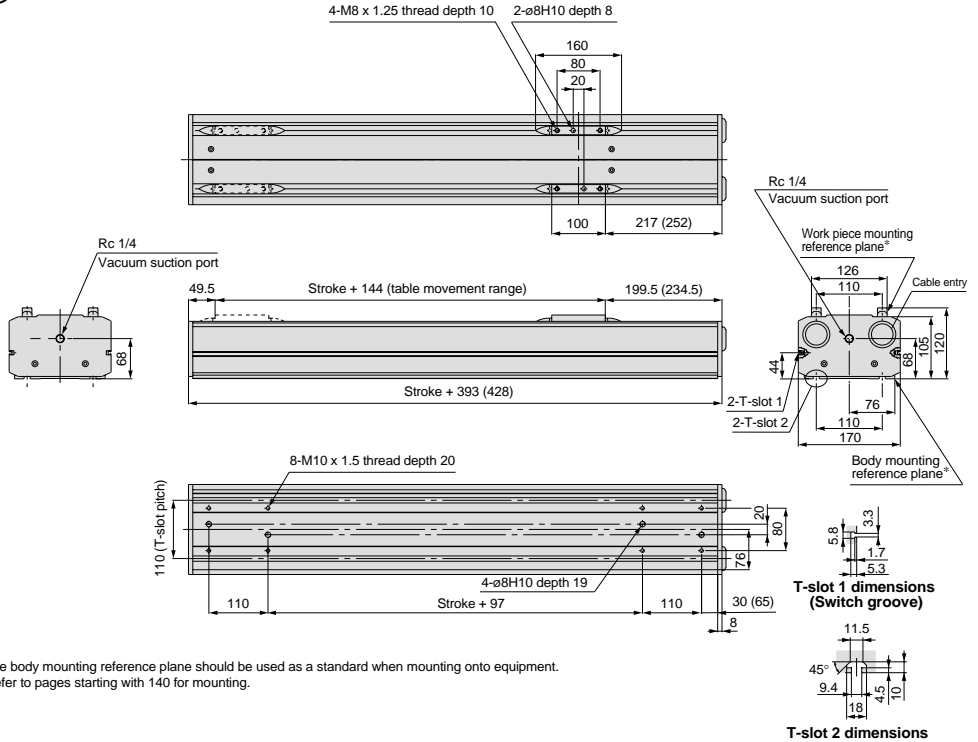
Standard stroke mm		200	300	400	500	600	800	1000	1200	1500		
Weight kg	Without brake	With motor	16.2	18.2	20.2	22.2	24.2	28.7	33.2	37.2	43.2	
		Without motor	15.1	17.1	19.1	21.1	23.1	27.6	32.1	36.1	42.1	
	With brake	With motor	17.2	19.2	21.2	23.2	25.2	—	—	—	—	
		Without motor	16.1	18.1	20.1	22.1	24.1	—	—	—	—	
Operating temperature range °C		5 to 40 (with no condensation)										
Maximum work load kg	Horizontal specification	25mm lead	200W	60								
	Vertical specification			10mm lead	20		—					
Maximum speed mm/s	Horizontal specification	25mm lead	200W	1000			700		500			
	Vertical specification			10mm lead	500		—					
Positioning repeatability mm	Rolled ball screw		±0.05									
	Ground ball screw		±0.02									
Motor output	Horizontal specification		AC servomotor (200W)									
	Vertical specification		AC servomotor (200W) with brake									
Lead screw	Black chroming + Special fluoro resin coating and grease application	Horizontal specification	Rolled ball screw	ø25mm, 25mm lead								
		Vertical specification		Ground ball screw	ø20mm, 10mm lead		—					
Guide		High rigidity direct acting guide, Stainless steel rail, AFE grease (made by THK) applied										
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										
Table specification		With dust seal										
Grease for dust seal application		Fluorine grease for vacuum equipment made by NOK Kluber										
Grease maintenance schedule		Traveling distance of 4000km, 4 million reciprocations, or operation period of 6 months, whichever comes first										
Vacuum suction port		Rc 1/4, one each on both axial surfaces Seal the unused port with a plug, suction at both ends										
Suction flow rate	Speed: 500 mm/s or less	100 /min (ANR)										
	Speed: 500 mm/s or more	200 /min (ANR)										

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1H30□□ (X60)

Dimensions inside () are for the model with brake.

Scale: 15%

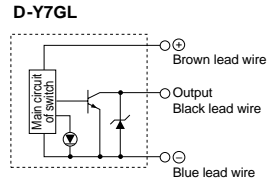


Compatible Motors

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	200	100/110	—	LC1-1B3H1-□□
		With brake (Vertical specification)	200	100	—	LC1-1B3VA1-□□
	G	Without brake (Horizontal specification)	200	100/115	MSM021P1A	MSD021P1E
		With brake (Vertical specification)	200	200/230	MSM022P1A	MSD023P1E
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	200	100/115	MSM021P1B	MSD021P1E
		With brake (Vertical specification)	200	200/230	MSM022P1B	MSD023P1E
	R	Without brake (Horizontal specification)	200	100/115	HC-PQ23	MR-C20A1
		With brake (Vertical specification)	200	200/230		MR-C20A
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	200	100/115	HC-PQ23B	MR-C20A1
		With brake (Vertical specification)	200	200/230		MR-C20A
	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12	SGDE-02BP
		With brake (Vertical specification)	200	200/230	SGME-02AF12	SGDE-02AP
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12B	SGDE-02BP
		With brake (Vertical specification)	200	200/230	SGME-02AF12B	SGDE-02AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



How to Order

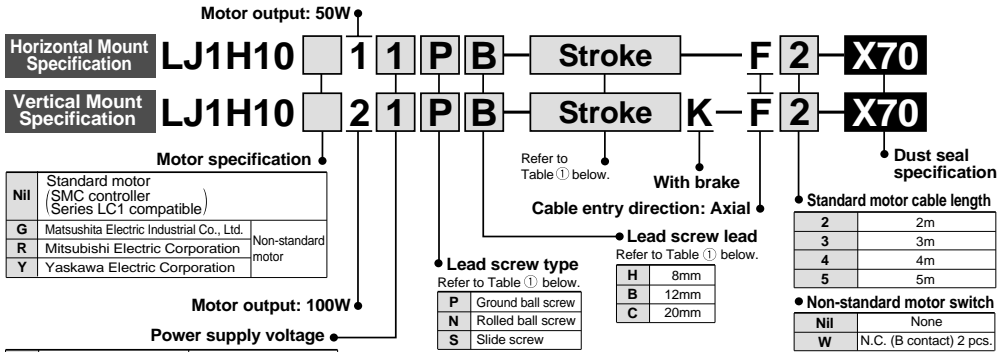


Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)									
	100	200	300	400	500	600	700	800	900	1000
LJ1H10□1□PB-Stroke-F□-X70	●	●	●	●	●					
LJ1H10□1□NB-Stroke-F□-X70	●	●	●	●	●					
LJ1H10□1□SC-Stroke-F□-X70	●	●	●	●	●	●	●	●	●	●
LJ1H10□2□PH-Stroke-K-F□-X70	●	●	●	●	●					
LJ1H10□2□NH-Stroke-K-F□-X70	●	●	●	●	●					
LJ1H10□2□PB-Stroke-K-F□-X70	●	●	●	●	●					
LJ1H10□2□NB-Stroke-K-F□-X70	●	●	●	●	●					

Combinations other than the above cannot be manufactured.

Specifications

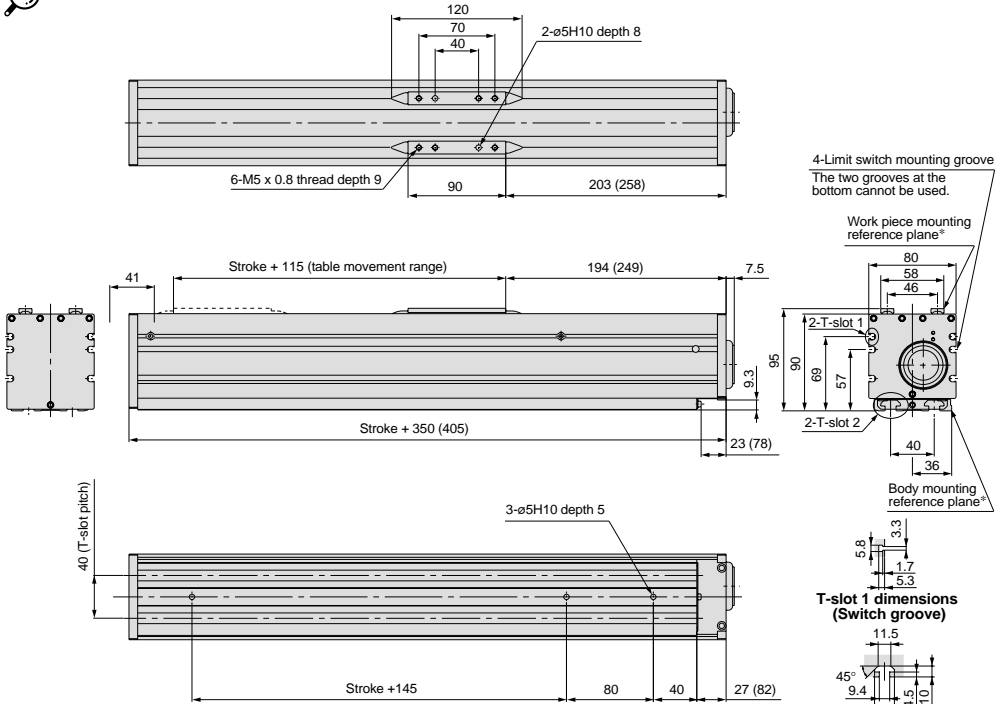
		Standard stroke mm		100	200	300	400	500	600	700	800	900	1000
Weight kg	Ball screw	Without brake	With motor	5.4	6.2	7.0	7.7	8.5	—	—	—	—	—
		Without motor	5.0	5.8	6.6	7.3	8.1	—	—	—	—	—	
	Slide screw	Without brake	With motor	5.9	6.7	7.5	8.2	9.0	—	—	—	—	—
		Without motor	5.5	6.3	7.1	7.8	8.6	—	—	—	—	—	—
Operating temperature range °C				5 to 40 (with no condensation)									
Work load kg	Horizontal specification	12mm lead	50W	10									
		20mm lead	50W	10									
	Vertical specification	12mm lead	100W	5					—				
		8mm lead	100W	10					—				
Maximum speed mm/s	Horizontal specification	12mm lead	50W	600									
		20mm lead	50W	500									
	Vertical specification	12mm lead	100W	600					—				
		8mm lead	100W	400					—				
Positioning repeatability mm	Rolled ball screw		±0.05										
	Ground ball screw		±0.02										
	Slide screw		±0.1										
Motor output	Horizontal specification		AC servomotor (50W)										
	Vertical specification		AC servomotor (100W) with brake										
Lead screw	Horizontal specification	Rolled ball screw	ø12mm, 12mm lead										
		Ground ball screw	ø12mm, 12mm lead										
		Slide screw	ø20mm, 20mm lead										
	Vertical specification	Rolled ball screw	ø12mm, 12mm/8mm lead					—					
		Ground ball screw	ø12mm, 12mm/8mm lead					—					
Guide													
High rigidity direct acting guide													
Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less													
Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less													
Table specification													
Grease for dust seal application													
With dust seal													
Special lubricant													

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1H10□ $\frac{1}{2}$ (X70)

Dimensions inside () are for the model with brake.

Scale: 20%



^a The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

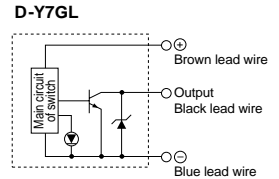
Compatible Motors

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	50	100/110 200/220	—	LC1-1B1□1-□□ LC1-1B1□2-□□
		With brake (Vertical specification)	100	100 200	—	LC1-1B1V□1-□□ LC1-1B1V□2-□□
	G	Without brake (Horizontal specification)	50	100/115 200/230	MSM5AZP1A	MSD5A1P1E MSD5A3P1E
		With brake (Vertical specification)	100	100/115 200/230	MSM011P1B MSM012P1B	MSD011P1E MSD013P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	50	100/115 200/230	HC-PQ053	MR-C10A1 MR-C10A
		With brake (Vertical specification)	100	100/115 200/230	HC-PQ13B	MR-C10A1 MR-C10A
	Y	Without brake (Horizontal specification)	50	100/115 200/230	SGME-A5BF12	SGDE-A5BP SGDE-A5AP
		With brake (Vertical specification)	100	100/115 200/230	SGME-01BF12B	SGDE-01BP SGDE-01AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

^a For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



How to Order

Horizontal Mount Specification **LJ1H20** **2** **1** **P** **A** — Stroke — **F** **2** — **X70**

Vertical Mount Specification **LJ1H20** **2** **1** **P** **A** — Stroke — **K** — **F** **2** — **X70**

Motor specification ●

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 100W ●

Power supply voltage ●

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Refer to Table ① below. With brake
Cable entry direction: Axial

● Lead screw type Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

● Lead screw lead Refer to Table ① below.

F	5mm
A	10mm
C	20mm

● Dust seal specification

● Standard motor cable length

2	2m
3	3m
4	4m
5	5m

● Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)											
	100	200	300	400	500	600	700	800	900	1000	1200	
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PA-Stroke-F <input type="checkbox"/> X70	●	●	●	●	●	●						
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NA-Stroke-F <input type="checkbox"/> X70	●	●	●	●	●	●						
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PC-Stroke-F <input type="checkbox"/> X70						●	●	●	●	●	●	
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NC-Stroke-F <input type="checkbox"/> X70						●	●	●	●	●	●	
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> SC-Stroke-F <input type="checkbox"/> X70	●	●	●	●	●	●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PF-Stroke-K-F <input type="checkbox"/> X70	●	●	●	●	●	●						
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NF-Stroke-K-F <input type="checkbox"/> X70	●	●	●	●	●	●						
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PA-Stroke-K-F <input type="checkbox"/> X70	●	●	●	●	●	●						
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NA-Stroke-K-F <input type="checkbox"/> X70	●	●	●	●	●	●						

Combinations other than the above cannot be manufactured.

Specifications

		Standard stroke mm	100	200	300	400	500	600	700	800	900	1000	1200									
Weight kg	Ball screw	Without brake	With motor	7.9	9.1	10.3	11.4	12.8	13.9	15.1	16.3	17.5	18.7	—								
			Without motor	7.4	8.6	9.8	10.9	12.3	13.4	14.6	15.8	17.0	18.2	—								
		With brake	With motor	8.6	9.8	11.0	12.1	13.5	14.6	—	—	—	—	—								
	Slide screw	Without brake	With motor	8.1	9.3	10.5	11.6	13.0	14.1	—	—	—	—	—								
			Without motor	9.0	10.0	11.1	12.2	13.3	14.3	15.3	17.2	19.1	20.6	24.7								
		Without motor	7.5	8.5	9.6	10.8	12.3	13.8	16.3	18.3	16.8	18.6	20.4	24.2								
Operating temperature range °C			5 to 40 (with no condensation)																			
Work load kg	Horizontal specification	Ball screw	10mm lead	30			15						—									
		20mm lead	—																			
	Vertical specification	Slide screw	20mm lead	15																		
		Ball screw	5mm lead	15			8						—									
Maximum speed mm/s	Horizontal specification	Ball screw	10mm lead	500			1000						930		740		600		500		—	
		20mm lead	—																			
	Vertical specification	Slide screw	10mm lead	250																		
		Ball screw	5mm lead	500			—						—		—		—					
Positioning repeatability mm	Rolled ball screw		±0.05																			
	Ground ball screw		±0.02																			
	Slide screw		±0.1																			
Motor output	Horizontal specification		AC servomotor (100W)																			
	Vertical specification		AC servomotor (100W) with brake																			
Lead screw	Horizontal specification	Rolled/Grand ball screw	—			—						—		—								
		Slide screw	—			—						—		—								
	Vertical specification	Ball screw	—			—						—		—								
		Rolled/Grand ball screw	—			—						—		—								
Guide		High rigidity direct acting guide																				
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less																				
Table specifications		With dust seal																				
Grease for dust seal application		Special lubricant																				

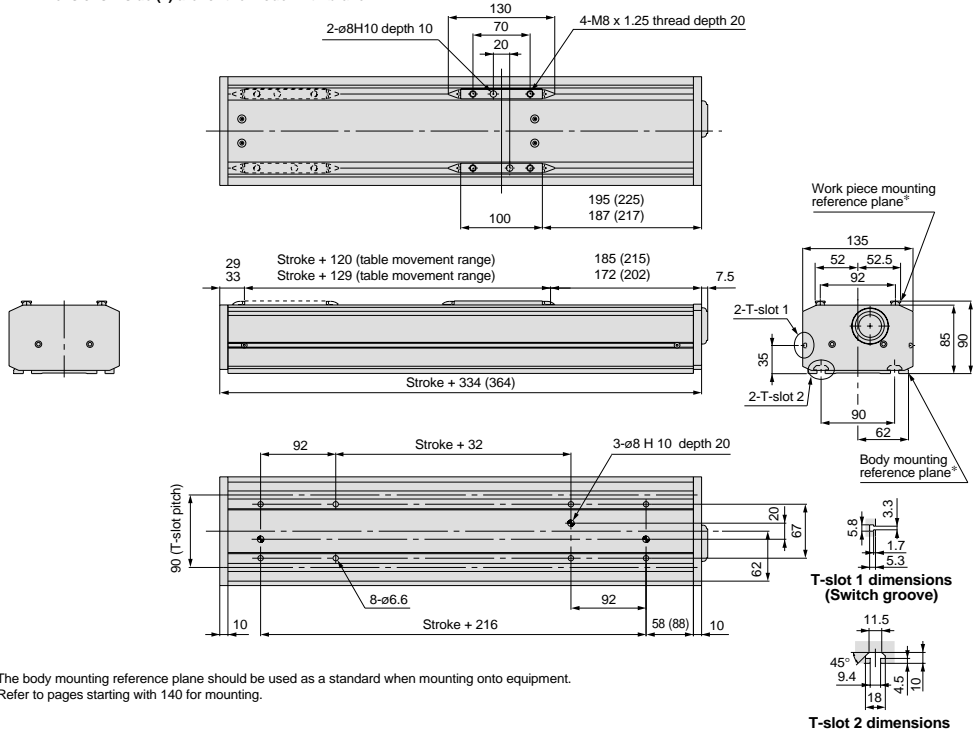
For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.



Dimensions/LJ1H20□2 (X70)

Scale: 15%

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes. Dimensions inside () are for the model with brake.



* The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

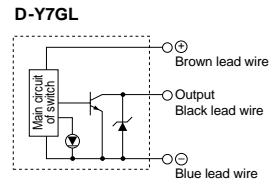
Compatible Motors

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	100	100/110 200/220	—	LC1-1B2□1-□□
		With brake (Vertical specification)	100	100 200	—	LC1-1B2V□1-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	100	100/115 200/230	MSM011P1A MSM012P1A	MSD011P1E MSD013P1E
		With brake (Vertical specification)	100	100/115 200/230	MSM011P1B MSM012P1B	MSD011P1E MSD013P1E
		Without brake (Horizontal specification)	100	100/115 200/230	HC-PQ13	MR-C10A1 MR-C10A
		With brake (Vertical specification)	100	100/115 200/230	HC-PQ13B	MR-C10A1 MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	100	100/115 200/230	SGME-01BF12 SGME-01AF12	SGDE-01BP SGDE-01AP
		With brake (Vertical specification)	100	100/115 200/230	SGME-01BF12B SGME-01AF12B	SGDE-01BP SGDE-01AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



LJ1
LG1
LC1
LX
LC6D/LC6C
Switches

How to Order

Horizontal Mount Specification **LJ1H30** **3** **1** **P** **D** **200** **F** **2** **X70**

Vertical Mount Specification **LJ1H30** **3** **1** **P** **A** **200** **K** **F** **2** **X70**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 200W

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Power supply voltage

Stroke
Refer to Table ① below.

With brake

Lead screw lead
Refer to Table ① below.

A	10mm
B	25mm
E	40mm

Dust seal specification

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable entry direction: Axial

Lead screw type
Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)									
	200	300	400	500	600	800	1000	1200	1500	
LJ1H30□3□PD-Stroke-F□-X70	●	●	●	●	●	●	●	●	●	●
LJ1H30□3□ND-Stroke-F□-X70	●	●	●	●	●	●	●	●	●	●
LJ1H30□3□SE-Stroke-F□-X70	●	●	●	●	●	●	●	●	●	●
LJ1H30□3□PA-Stroke-K-F□-X70	●	●	●	●	●	●	●	●	●	●
LJ1H30□3□NA-Stroke-K-F□-X70	●	●	●	●	●	●	●	●	●	●

Combinations other than the above cannot be manufactured.

Specifications

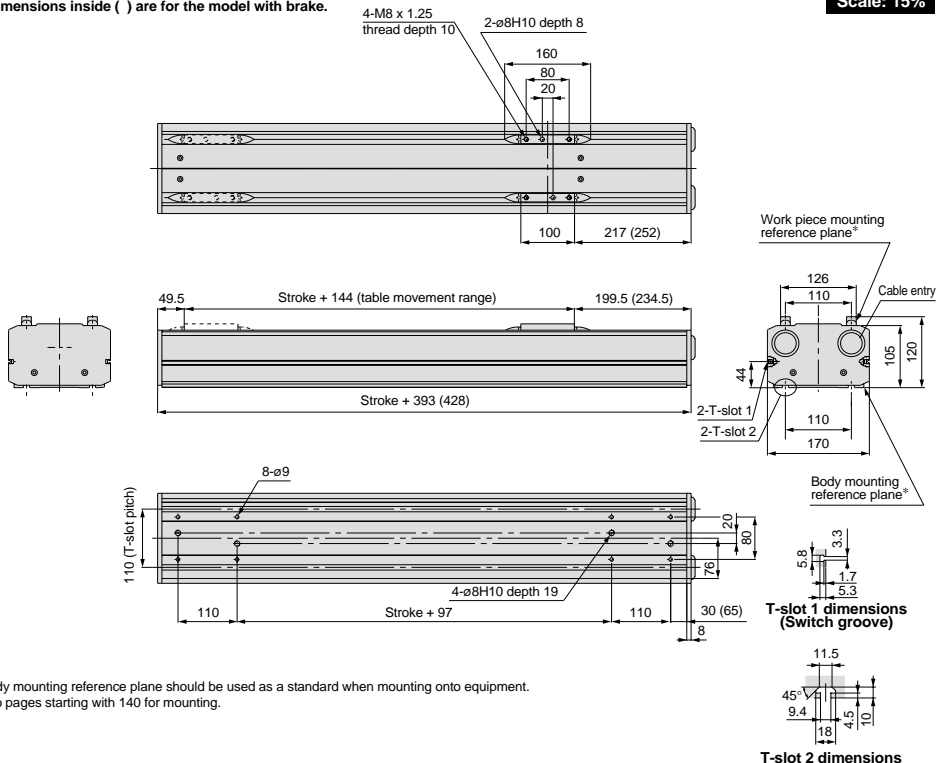
Standard stroke mm		200	300	400	500	600	800	1000	1200	1500		
Weight kg	Ball screw	Without brake	With motor	16.2	18.2	20.2	22.2	24.2	28.7	33.2	37.2	43.2
		With motor	15.1	17.1	19.1	21.1	23.1	27.6	32.1	36.1	42.1	
	Slide screw	Without brake	With motor	17.2	19.2	21.2	23.2	25.2	—	—	—	—
		Without motor	16.1	18.1	20.1	22.1	24.1	—	—	—	—	
Operating temperature range °C		5 to 40 (with no condensation)										
Work load kg	Horizontal specification	Ball screw	25mm lead	60							200W	
		Slide screw	40mm lead	30							200W	
	Vertical specification	Ball screw	10mm lead	20							—	
Maximum speed mm/s	Horizontal specification	Ball screw	25mm lead	1000				700		500		
		Slide screw	40mm lead	500				—		—		
	Vertical specification	Ball screw	10mm lead	500							—	
Positioning repeatability mm	Rolled ball screw		±0.05									
	Ground ball screw		±0.02									
	Slide screw		±0.1									
Motor output	Horizontal specification		AC servomotor (200W)									
	Vertical specification		AC servomotor (200W) with brake									
Lead screw	Horizontal specification	Rolled/Ground ball screw	ø25mm, 25mm lead									
		Slide screw	ø30mm, 40mm lead									
	Vertical specification	Rolled/Ground ball screw	ø20mm, 10mm lead									
Guide	High rigidity direct acting guide											
Switch	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											
Table specifications	With dust seal											
Grease for dust seal application	Special lubricant											

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1H30□□ (X70)

Dimensions inside () are for the model with brake.

Scale: 15%



* The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

Compatible Motors

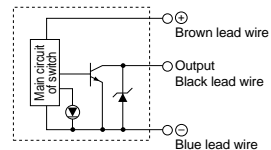
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	200	100/110	—	LC1-1B3□1-□□
			200	200	—	LC1-1B3□2-□□
		With brake (Vertical specification)	200	100	—	LC1-1B3VA1-□□
			200	200	—	LC1-1B3VA2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	200	100/115	MSM021P1A	MSD021P1E
			200/230	MSM022P1A	MSD023P1E	
		With brake (Vertical specification)	200	100/115	MSM021P1B	MSD021P1E
			200/230	MSM022P1B	MSD023P1E	
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	200	100/115	HC-PQ23	MR-C20A1
			200/230	MR-C20A		
		With brake (Vertical specification)	200	100/115	HC-PQ23B	MR-C20A1
			200/230	MR-C20A		
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12	SGDE-02BP
			200/230	SGME-02AF12	SGDE-02AP	
		With brake (Vertical specification)	200	100/115	SGME-02BF12B	SGDE-02BP
			200/230	SGME-02AF12B	SGDE-02AP	

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Slider Guide Type
Motor Output: 50W

Series LJ1S10

Dust Seal Specification

How to Order

Horizontal Mount Specification

LJ1S10 **1** **1** **S** **C** — **100** — **F** **2** — **X70**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 50W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Lead screw type: Slide screw

Lead screw lead: 20mm

Cable entry direction:
Axial

Dust seal specification

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

Specifications

Standard stroke mm		100	200	300	400	500	600	700	800	900	1000
Weight kg	With motor (Standard)	5.4	6.1	6.9	7.7	8.5	9.3	10.0	10.8	11.6	12.4
	Without motor (Non-standard)	5.0	5.7	6.5	7.3	8.1	8.9	9.6	10.4	11.2	12.0
Operating temperature range °C		5 to 40 (with no condensation)									
Work load kg		5									
Maximum speed mm/s		300									
Positioning repeatability mm		±0.1									
Motor output		AC servomotor (50W)									
Lead screw		Slide screw ø20mm, 20mm lead									
Guide		Slider guide									
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less									
Table specifications		With dust seal									
Grease for dust seal application		Special lubricant									

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Slider Guide Type
Motor Output: 100W

Series **LJ1S20**

Dust Seal Specification

How to Order

Horizontal Mount Specification **LJ1S20** **21SC** - **100** - **F2** - **X70**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 100W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Lead screw type: Slide screw

Lead screw lead: 20mm

Cable entry direction: Axial

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

Dust seal specification

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

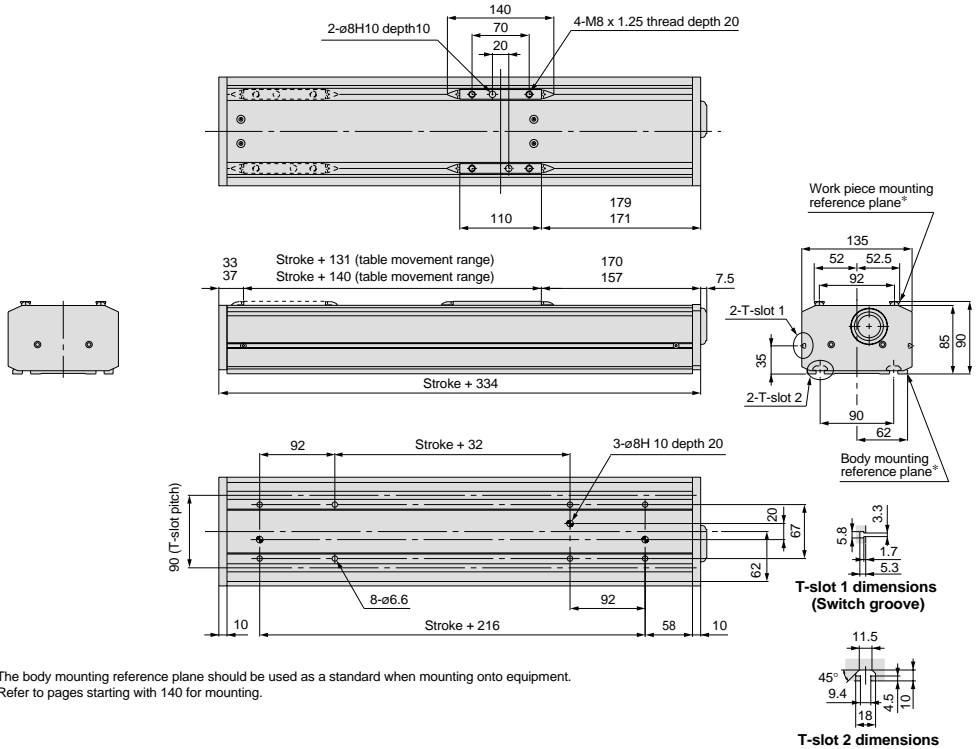
Standard stroke mm		100	200	300	400	500	600	700	800	900	1000	1200
Weight kg	With motor (Standard)	6.8	7.9	9.0	10.1	11.1	12.2	13.3	14.3	15.4	16.4	18.6
	Without motor (Non-standard)	6.3	7.4	8.5	9.6	10.7	11.7	12.8	13.8	14.9	15.9	18.1
Operating temperature range °C	5 to 40 (with no condensation)											
Work load kg	10											
Maximum speed mm/s	300											
Positioning repeatability mm	±0.1											
Motor output	AC servomotor (100W)											
Lead screw	Slide screw ø20mm, 20mm lead											
Guide	Slider guide											
Switch	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											
Table specifications	With dust seal											
Grease for dust seal application	Special lubricant											

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1S20□2□SC (X70)

Scale: 15%

When two dimensions are shown, the top dimension is for 100 to 600mm strokes, and the bottom dimension is for 700 to 1200mm strokes.



* The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

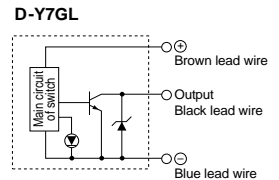
Compatible Motors

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	100	100/110	—	LC1-1B2S1-□□
				200/220	—	LC1-1B2S2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	100	100/115	MSM011P1A	MSD011P1E
				200/230	MSM012P1A	MSD013P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	100	100/115	HC-PQ13	MR-C10A1
				200/230		MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	100	100/115	SGME-01BF12	SGDE-01BP
				200/230	SGME-01AF12	SGDE-01AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit



Slider Guide Type
Motor Output: 200W

Series **LJ1S30**

Dust Seal Specification

How to Order

Horizontal Mount Specification

LJ1S30 **3** **1** **S** **C** - **200** - **F** **2** - **X70**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 200W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Lead screw type: Slide screw

Lead screw lead: 20mm

Cable entry direction:
Axial

Dust seal specification

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Stroke

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

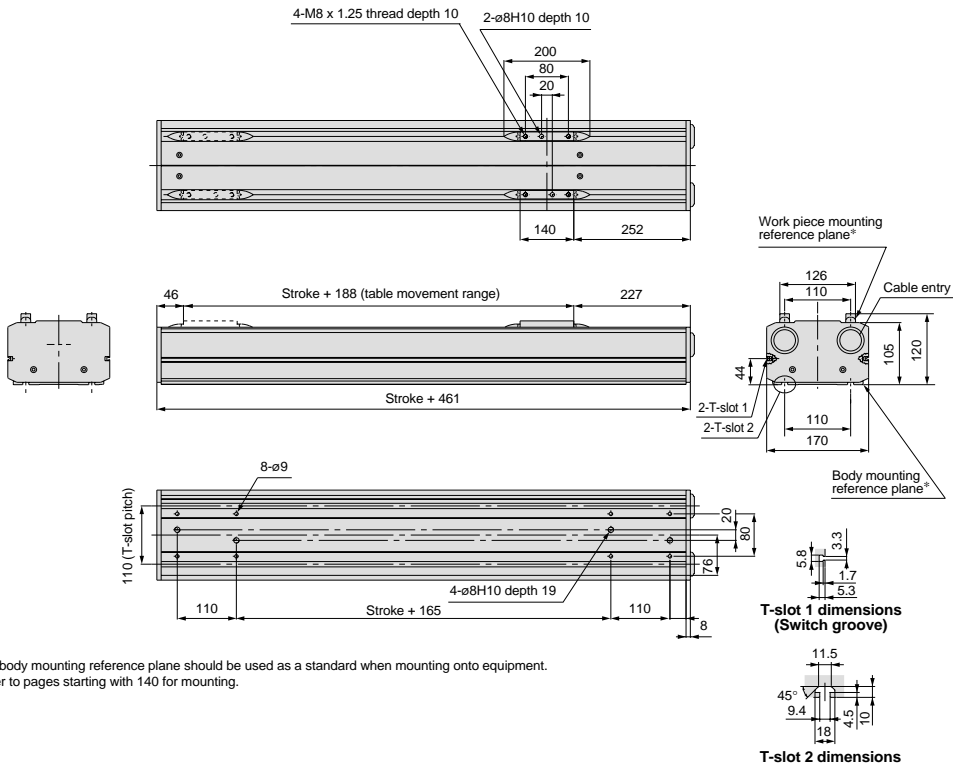
Specifications

Standard stroke mm		200	300	400	500	600	800	1000	1200	1500
Weight kg	With motor (Standard)	14.4	16.2	18.0	19.8	21.5	25.7	29.7	33.3	38.7
	Without motor (Non-standard)	13.3	15.1	16.9	18.7	20.4	24.6	28.6	32.2	37.6
Operating temperature range °C		5 to 40 (with no condensation)								
Work load kg		20								
Maximum speed mm/s		300								
Positioning repeatability mm		±0.1								
Motor output		AC servomotor (200W)								
Lead screw		Slide screw ø25mm, 20mm lead								
Guide		Slider guide								
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less								
Table specifications		With dust seal								
Grease for dust seal application		Special lubricant								

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

Dimensions/LJ1S30□3□SC (X70)

Scale: 15%



* The body mounting reference plane should be used as a standard when mounting onto equipment. Refer to pages starting with 140 for mounting.

Compatible Motors

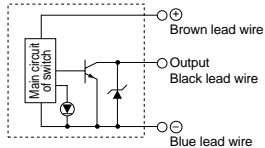
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	200	100/110	—	LC1-1B3S1-□
				200	—	LC1-1B3S2-□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	200	100/115	MSM021P1A	MSD021P1E
				200/230	MSM022P1A	MSD023P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	200	100/115	HC-PQ023	MR-C20A1
				200/230		MR-C20A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12	SGDE-02BP
				200/230	SGME-02AF12	SGDE-02AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



How to Order

Horizontal Mount Specification

LJ1H10 **1** **P** **B** - **100** - **F** **2** - **X40** **L**

Motor specification

NII	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 50W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Stroke
Refer to Table ① below.

Lead screw lead
Refer to Table ① below.

B	12mm
C	20mm

Lead screw type
Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

TSUBAKI CABLEVEYOR specification

TSUBAKI CABLEVEYOR entry direction

L	Left
R	Right

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Non-standard motor switch

NII	None
W	N.C. (B contact) 2 pcs.

Cable/TSUBAKI CABLEVEYOR entry direction

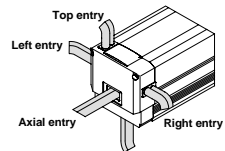


Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)									
	100	200	300	400	500	600	700	800	900	1000
LJ1H10□1□PB-Stroke□□-X40□	●	●	●	●	●					
LJ1H10□1□NB-Stroke□□-X40□	●	●	●	●	●					
LJ1H10□1□SC-Stroke□□-X40□	●	●	●	●	●	●	●	●	●	●


Combinations other than the above cannot be manufactured.

Specifications

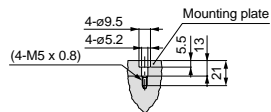
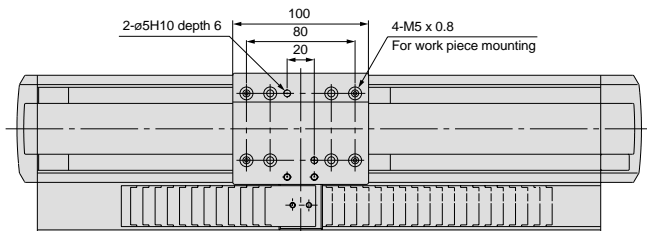
Standard stroke mm			100	200	300	400	500	600	700	800	900	1000	
Weight kg	With motor (Standard)	Ball screw	6.0	6.9	7.9	8.7	9.6	—	—	—	—	—	
		Slide screw	6.1	7.1	8.3	9.2	10.1	11.1	12.0	13.0	14.0	14.9	
	Without motor (Non-Standard)	Ball screw	5.6	6.5	7.5	8.3	9.2	—	—	—	—	—	
		Slide screw	5.7	6.7	7.9	8.8	9.7	10.7	11.6	12.6	13.6	14.5	
Mounting orientation			Horizontal										
Operating temperature range °C			5 to 40 (with no condensation)										
Work load kg	Ball screw	12mm lead	10				10			—			
	Slide screw	20mm lead					10			—			
Maximum speed mm/s	Ball screw	12mm lead	600				—						
	Slide screw	20mm lead					500						
Positioning repeatability mm	Rolled ball screw		±0.05										
	Ground ball screw		±0.02										
	Slide screw		±0.1										
Motor output			AC servomotor (50W)										
Lead screw	Rolled ball screw		ø12mm, 12mm lead				—						
	Ground ball screw						—						
	Slide screw		ø20mm, 20mm lead										
Guide			High rigidity direct acting guide										
Switch			Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										
TSUBAKI CABLEVEYOR			TKP0130-2BR18 manufactured by TSUBAKIMOTO CHAIN CO.										
Side cover			Cover with switch groove										

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

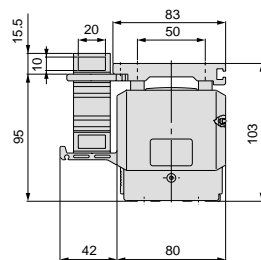
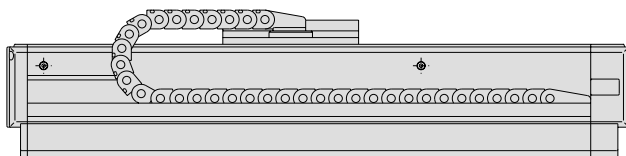
Dimensions/LJ1H10□1 (X40)

 Dimensions other than those shown in the drawing are the same as standard.

Scale: 25%



Work piece mounting dimensions



* This drawing shows the TSUBAKI CABLEVEYOR with left hand entry.

Compatible Motors

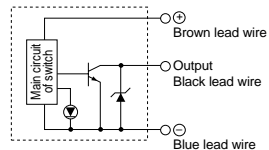
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	50	100/110	—	LC1-1B1□1-□□
				200/220	—	LC1-1B1□2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	50	100/115	MSM5AZP1A	MSD5A1P1E
				200/230		MSD5A3P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	50	100/115	HC-PQ053	MR-C10A1
				200/230		MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	50	100/115	SGME-A5BF12	SGDE-A5BP
				200/230	SGME-A5AF12	SGDE-A5AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

Horizontal Mount Specification

LJ1H20 **2** **1** **PA** - **100** - **F** **2** - **X40** **L**

Motor specification

Nll	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 100W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Stroke Refer to Table ① below.

Lead screw lead

Refer to Table ① below.

A	10mm
C	20mm

Lead screw type

Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

TSUBAKI CABLEVEYOR specification

TSUBAKI CABLEVEYOR entry direction	
L	Left
R	Right

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nll	None
W	N.C. (B contact) 2 pcs.

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable/TSUBAKI CABLEVEYOR entry direction

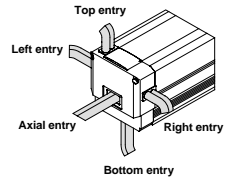


Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)										
	100	200	300	400	500	600	700	800	900	1000	1200
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PA-Stroke- <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●					
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NA-Stroke- <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●					
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> PC-Stroke- <input type="checkbox"/> X40 <input type="checkbox"/>					●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> NC-Stroke- <input type="checkbox"/> X40 <input type="checkbox"/>					●	●	●	●	●	●	●
LJ1H20 <input type="checkbox"/> 2 <input type="checkbox"/> SC-Stroke- <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●	●	●	●	●	●


Combinations other than the above cannot be manufactured.

Specifications

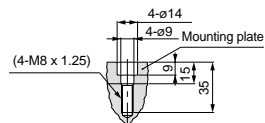
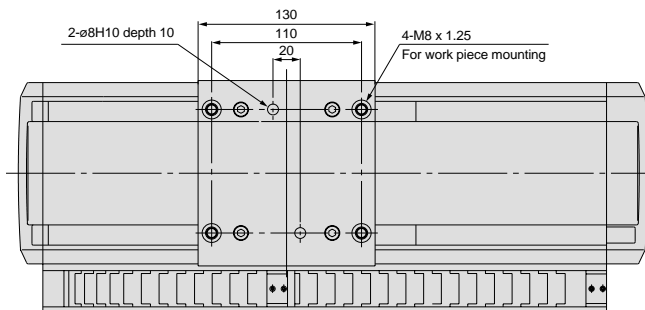
Standard stroke mm		100	200	300	400	500	600	700	800	900	1000	1200	
Weight kg	With motor (Standard)	Ball screw	8.7	9.9	11.1	12.3	13.5	14.7	15.9	17.1	18.3	19.5	
		Slide screw	10.0	11.2	12.4	13.6	14.8	16.0	17.2	18.4	19.6	20.8	23.2
	Without motor (Non-Standard)	Ball screw	8.2	9.4	10.6	11.8	13.0	14.2	15.4	16.6	17.8	19.0	—
		Slide screw	9.5	10.7	11.9	13.1	14.3	15.5	16.7	17.9	19.1	20.3	22.7
Mounting orientation		Horizontal											
Operating temperature range °C		5 to 40 (with no condensation)											
Work load kg	Ball screw	10mm lead	30							15		—	
		20mm lead	—							15		—	
Maximum speed mm/s	Slide screw	10mm lead	500							15		—	
		20mm lead	—				1000			930	740	600	500
Positioning repeatability mm	Rolled ball screw		±0.05										
	Ground ball screw		±0.02										
	Slide screw		±0.1										
Motor output		AC servomotor (100W)											
Lead screw	Rolled ball screw		ø15mm, 10mm lead							—		—	
	Ground ball screw		—							ø15mm, 20mm lead		—	
	Slide screw		ø20mm, 20mm lead										
Guide		High rigidity direct acting guide											
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											
TSUBAKI CABLEVEYOR		TKP0130-2BR28 manufactured by TSUBAKIMOTO CHAIN CO.											
Side cover		Cover with switch groove											

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

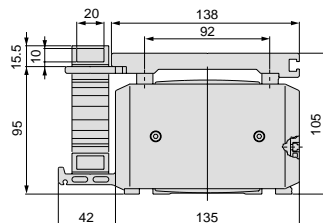
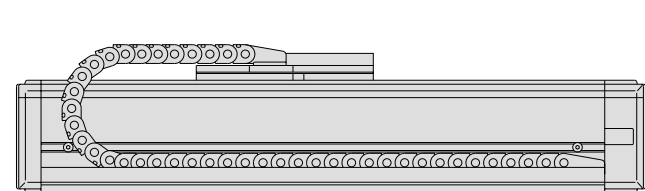
Dimensions/LJ1H20□2 (X40)

 Dimensions other than those shown in the drawing are the same as standard.

Scale: 25%



Work piece mounting dimensions



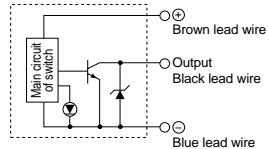
* This drawing shows the Tsubaki Cableveyor with left hand entry.

Compatible Motors

Switch Internal Circuit

Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	100	100/110	—	LC1-1B2□1-□□
				200/220	—	LC1-1B2□2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	100	100/115	MSM011P1A	MSD011P1E
				200/230	MSM012P1A	MSD013P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	100	100/115	HC-PQ13	MR-C10A1
				200/230		MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	100	100/115	SGME-01BF12	SGDE-01BP
				200/230	SGME-01AF12	SGDE-01AP

D-Y7GL



* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

How to Order

Horizontal Mount Specification

LJ1H30 **3** **1** **P** **D** - **200** - **F** **2** - **X40** **L**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 200W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Stroke Refer to Table ① below.

Lead screw lead Refer to Table ① below.

D	25mm
E	40mm

Lead screw type Refer to Table ① below.

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

TSUBAKI CABLEVEYOR specification

TSUBAKI CABLEVEYOR entry direction

L	Left
R	Right

Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

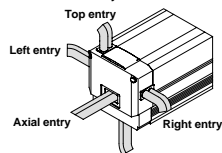
Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Table ① Lead screw/Lead/Stroke combinations

Model	Stroke (mm)								
	200	300	400	500	600	800	1000	1200	1500
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> PD-Stroke- <input type="checkbox"/> - <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●	●	●	●
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> ND-Stroke- <input type="checkbox"/> - <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●	●	●	●
LJ1H30 <input type="checkbox"/> 3 <input type="checkbox"/> SE-Stroke- <input type="checkbox"/> - <input type="checkbox"/> X40 <input type="checkbox"/>	●	●	●	●	●	●	●	●	●

Combinations other than the above cannot be manufactured.




Specifications

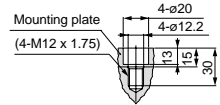
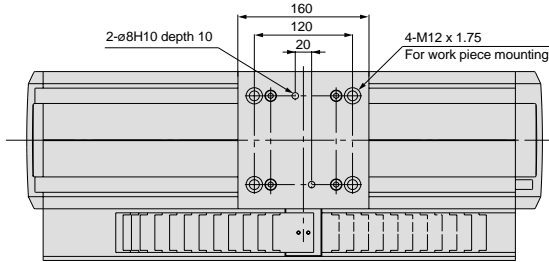
Standard stroke mm			200	300	400	500	600	800	1000	1200	1500	
Weight kg	With motor (Standard)	Ball screw	17.5	19.7	21.9	24.1	26.2	31.1	36.0	40.3	46.9	
		Slide screw	16.4	18.7	20.9	23.2	25.4	29.9	34.5	39.0	45.8	
	Without motor (Non-Standard)	Ball screw	16.4	18.6	20.8	23.0	25.1	30.0	34.9	39.2	45.8	
		Slide screw	15.3	17.6	19.8	22.1	24.3	28.8	33.4	37.8	44.7	
Mounting orientation			Horizontal									
Operating temperature range °C			5 to 40 (with no condensation)									
Work load kg	Ball screw	25mm lead	60									
	Slide screw	40mm lead	30									
Maximum speed mm/s	Ball screw	25mm lead	1000						700	500		
	Slide screw	40mm lead	500									
Positioning repeatability mm	Rolled ball screw		±0.05									
	Ground ball screw		±0.02									
	Slide screw		±0.1									
Motor output			AC servomotor (200W)									
Lead screw	Rolled ball screw		ø25mm, 25mm lead									
	Ground ball screw		ø30mm, 40mm lead									
	Slide screw		ø30mm, 40mm lead									
Guide			High rigidity direct acting guide									
Switch			Power supply voltage: 4.5 to 28VDC. Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less									
TSUBAKI CABLEVEYOR			TKP0180-2BR28 manufactured by TSUBAKIMOTO CHAIN CO.									
Side cover			Cover with switch groove									

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

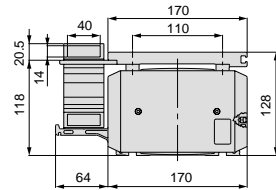
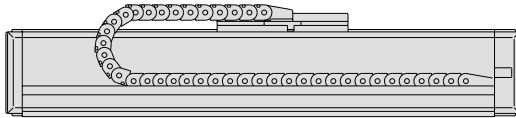
Dimensions/LJ1H30□3 (X40)

 Dimensions other than those shown in the drawing are the same as standard.

Scale: 20%



Work piece mounting dimensions



* This drawing shows the TSUBAKI CABLEVEYOR with left hand entry.

Compatible Motors

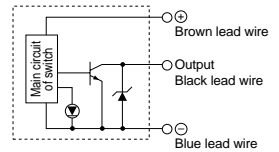
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	200	100/110	—	LC1-1B3□1-□□
				200	—	LC1-1B3□2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	200	100/115	MSM021P1A	MSD021P1E
				200/230	MSM022P1A	MSD023P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	200	100/115	HC-PQ23	MR-C20A1
				200/230		MR-C20A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12	SGDE-02BP
				200/230	SGME-02AF12	SGDE-02AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Slider Guider Type

Motor Output: 50W

Series **LJ1S10**

TSUBAKI CABLEVEYOR Specification

How to Order

Horizontal Mount Specification

LJ1S10 1 1 **S C** - 100 - **F** 2 - X40 **L**

Motor specification

Nii	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 50W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	Without motor	

Lead screw type: Slide screw

Lead screw lead: 20mm

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

TSUBAKI CABLEVEYOR specification

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

TSUBAKI CABLEVEYOR entry direction

L	Left
R	Right

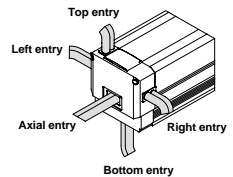
Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nii	None
W	N.C. (B contact) 2 pcs.

Cable/TSUBAKI CABLEVEYOR entry direction




Specifications

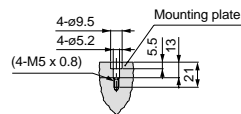
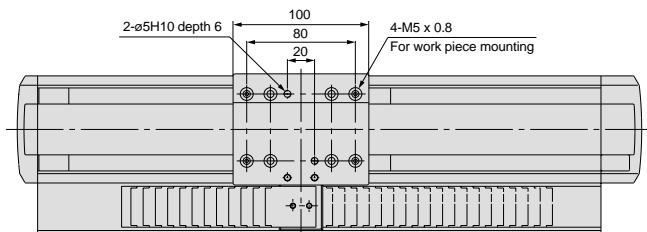
Standard stroke mm		100	200	300	400	500	600	700	800	900	1000
Weight kg	With motor (Standard)	6.2	7.0	8.0	8.9	9.8	10.7	11.5	12.5	13.4	14.3
	Without motor (Non-Standard)	5.8	6.6	7.6	8.5	9.4	10.3	11.1	12.1	13.0	13.9
Mounting orientation	Horizontal										
Operating temperature range °C	5 to 40 (with no condensation)										
Work load kg	5										
Maximum speed mm/s	300										
Positioning repeatability mm	±0.1										
Motor output	AC servomotor (50W)										
Lead screw	ø20mm, 20mm lead										
Guide	Slide guide										
Switch	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less										
TSUBAKI CABLEVEYOR	TKP0130-2BR18 manufactured by TSUBAKIMOTO CHAIN CO.										
Side cover	Cover with switch groove										

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

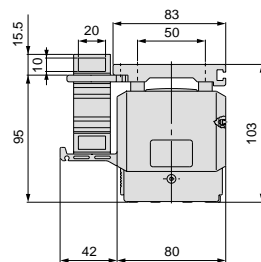
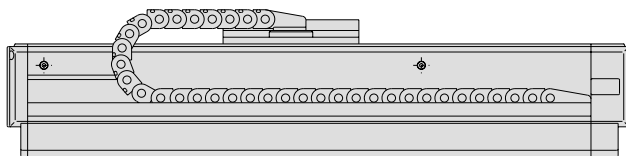
Dimensions/LJ1S10□1□SC (X40)

 Dimensions other than those shown in the drawing are the same as standard.

Scale: 20%



Work piece mounting dimensions



* This drawing shows the TSUBAKI CABLEVEYOR with left hand entry.

Compatible Motors

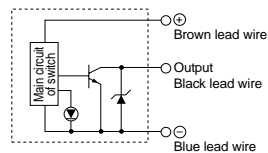
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model*
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	50	100/110	—	LC1-1B1S1-□□
				200/220	—	LC1-1B1S2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	50	100/115	MSM5AZP1A	MSD5A1P1E
				200/230		MSD5A3P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	50	100/115	HC-PQ053	MR-C10A1
				200/230		MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	50	100/115	SGME-A5BF12	SGDE-A5BP
				200/230	SGME-A5AF12	SGDE-A5AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



Slider Guide Type
Motor Output: 100W

Series **LJ1S20**

TSUBAKI CABLEVEYOR
Specification

How to Order

Horizontal Mount Specification **LJ1S20** **2** **1** **S** **C** - **200** - **2** - **X40** **L**

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 100W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	Without motor	

Lead screw type: Slide screw

Lead screw lead: 20mm

Stroke

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

TSUBAKI CABLEVEYOR specification

L	Left
R	Right

TSUBAKI CABLEVEYOR entry direction

2	2m
3	3m
4	4m
5	5m

Standard motor cable length

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Cable entry direction

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.


Cable/TSUBAKI CABLEVEYOR entry direction

Specifications

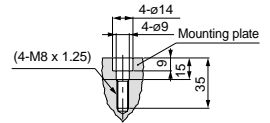
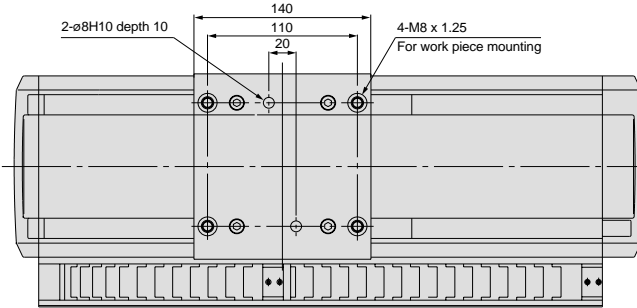
Standard stroke mm		100	200	300	400	500	600	700	800	900	1000	1200
Weight kg	With motor (Standard)	7.8	9.0	10.3	11.5	12.6	13.8	15.0	16.2	17.4	18.5	20.9
	Without motor (Non-Standard)	7.3	8.5	9.8	11.0	12.1	13.3	14.5	15.7	16.9	18.0	20.4
Mounting orientation	Horizontal											
Operating temperature range °C	5 to 40 (with no condensation)											
Work load kg	10											
Maximum speed mm/s	300											
Positioning repeatability mm	±0.1											
Motor output	AC servomotor (100W)											
Lead screw	ø20mm, 20mm lead											
Guide	Slide guide											
Switch	Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less											
TSUBAKI CABLEVEYOR	TKP0130-2BR28 manufactured by TSUBAKIMOTO CHAIN CO.											
Side cover	Cover with switch groove											

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

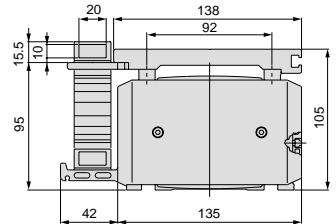
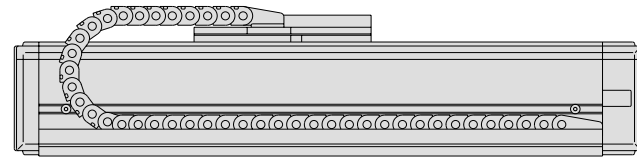
Dimensions/LJ1S20□2□SC (X40)

 Dimensions other than those shown in the drawing are the same as standard.

Scale: 20%



Work piece mounting dimensions



* This drawing shows the TSUBAKI CABLEVEYOR with left hand entry.

Compatible Motors

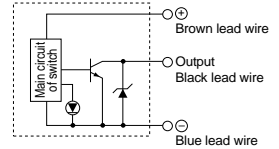
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	100	100/110	—	LC1-1B2S1-□□
				200/220	—	LC1-1B2S2-□□
Non-standard Matsushita Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	100	100/115	MSM011P1A	MSD011P1E
				200/230	MSM012P1A	MSD013P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	100	100/115	HC-PQ013	MR-C10A1
				200/230		MR-C10A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	100	100/115	SGME-01BF12	SGDE-01BP
				200/230	SGME-01AF12	SGDE-01AP

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Slider Guide Type

Motor Output: 200W

Series **LJ1S30**

TSUBAKI CABLEVEYOR Specification

How to Order

Horizontal Mount Specification

LJ1S30 G 3 1 S C - 200 - F 2 - X40 L

Motor specification

Nil	Standard motor (SMC controller (Series LC1 compatible))	
G	Matsushita Electric Industrial Co., Ltd.	Non-standard motor
R	Mitsubishi Electric Corporation	
Y	Yaskawa Electric Corporation	

Motor output: 200W

Power supply voltage

	Standard motor	Non-standard motor
1	100/110VAC (50/60Hz)	100/115VAC (50/60Hz)
2	200/220VAC (50/60Hz)	200/230VAC (50/60Hz)
0	—	Without motor

Lead screw type: Slide screw

Lead screw lead: 20mm

Stroke

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

TSUBAKI CABLEVEYOR specification

TSUBAKI CABLEVEYOR entry direction

L	Left
R	Right

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

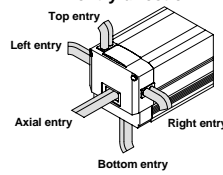
Standard motor cable length

2	2m
3	3m
4	4m
5	5m

Non-standard motor switch

Nil	None
W	N.C. (B contact) 2 pcs.

Cable/TSUBAKI CABLEVEYOR entry direction



Specifications

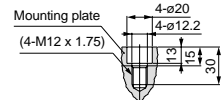
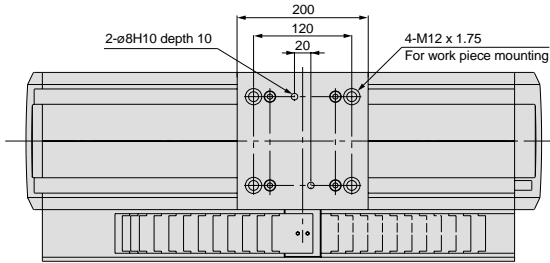
Standard stroke mm		200	300	400	500	600	800	1000	1200	1500
Weight kg	With motor (Standard)	15.9	17.9	19.9	21.9	23.8	28.3	32.7	36.6	42.6
	Without motor (Non-Standard)	14.8	16.8	18.8	20.8	22.7	27.2	31.6	35.5	41.5
Mounting orientation		Horizontal								
Operating temperature range °C		5 to 40 (with no condensation)								
Work load kg		20								
Maximum speed mm/s		300								
Positioning repeatability mm		±0.1								
Motor output		AC servomotor (200W)								
Lead screw		ø25mm, 20mm lead								
Guide		Slide guide								
Switch		Power supply voltage: 4.5 to 28VDC, Current consumption: 10mA or less Control output: Open collector, Load current: 40mA or less, Internal voltage drop: 1.5V or less								
TSUBAKI CABLEVEYOR		TKP0180-2BR28 manufactured by TSUBAKIMOTO CHAIN CO.								
Side cover		Cover with switch groove								

For basic specifications such as allowable moment, refer to the "Standard motor" pages for equivalent products listed on Features pages 1 and 2.

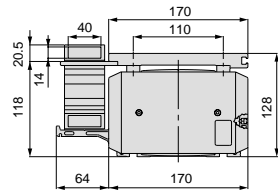
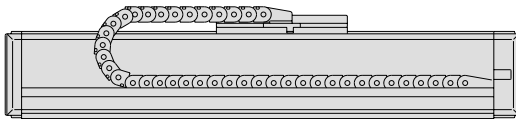
Dimensions/ LJ1S30□3□SC (X40)

Dimensions other than those shown in the drawing are the same as standards.

Scale: 20%



Work piece mounting dimensions



* This drawing shows the TUBAKI CABLE VEYOR with left hand entry.

Compatible Motors

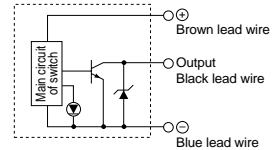
Manufacturer	Motor specification symbol	Brake	Motor output (W)	Power supply voltage (VAC)	Motor model	Controller driver model
SMC controller LC1 compatible	Nil	Without brake (Horizontal specification)	200	100/110	—	LC1-1B3S1-□□
				200/220	—	LC1-1B3S2-□□
Non-standard Mitsubishi Electric Industrial Co., Ltd. motor	G	Without brake (Horizontal specification)	200	100/115	MSM021P1A	MSD021P1E
				200/230	MSM022P1A	MSD023P1E
Non-standard Mitsubishi Electric Corporation motor	R	Without brake (Horizontal specification)	200	100/115	HC-PQ023	MR-C20A1
				200/230		MR-C20A
Non-standard Yaskawa Electric Corporation motor	Y	Without brake (Horizontal specification)	200	100/115	SGME-02BF12	SGDE-02BP
				200/230		SGME-02AF12

* Refer to pages starting with 205 for driver dimensions. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

Switch Internal Circuit

D-Y7GL



LJ1

LG1

LC1

LY

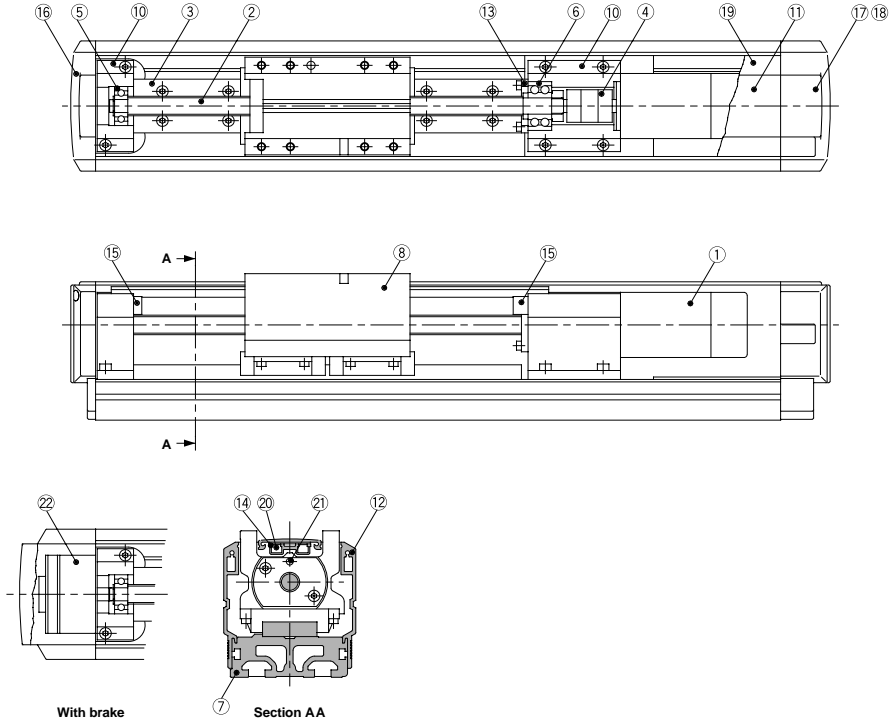
LC6D/LC6C

Switches

Series LJ1H Construction

Construction

LJ1H10



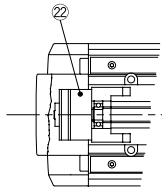
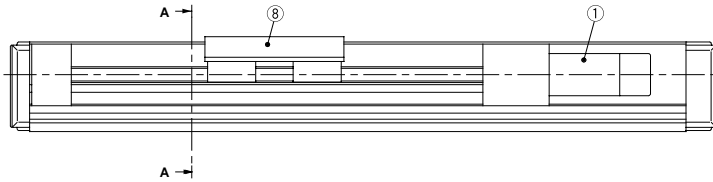
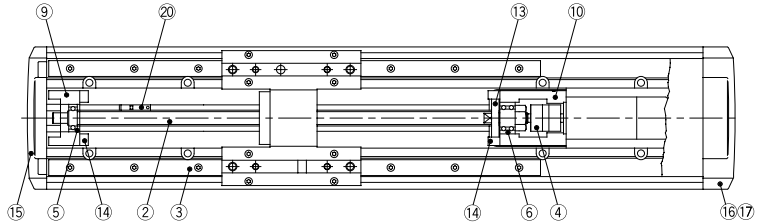
Parts list

No.	Description	Material	Note
1	AC servomotor	—	50W/100W
2	Lead screw	—	Ball screw/Slide screw
3	High rigidity direct acting guide	—	
4	Coupling	—	
5	Bearing R	—	
6	Bearing F	—	
7	Body A	Aluminum alloy	
8	Table	Aluminum alloy	
9	Housing A	Aluminum alloy	
10	Housing B	Aluminum alloy	
11	Top cover	Aluminum alloy	

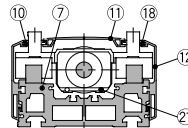
No.	Description	Material	Note
12	Side cover	Aluminum alloy	
13	Bearing retainer	Aluminum alloy	
14	Sensor rail	Aluminum alloy	
15	Bumper	IIR	
16	End cover A	PC	
17	End cover B	PC	
18	Inner cover	PC	
19	Motor cover	PC	
20	Auto switch	—	
21	Magnet	Rare earth magnet	
22	Brake	—	

Construction

LJ1H20



With brake



Section AA

Parts list

No.	Description	Material	Note
1	AC servomotor	—	100W
2	Lead screw	—	Ball screw/Slide screw
3	High rigidity direct acting guide	—	
4	Coupling	—	
5	Bearing R	—	
6	Bearing F	—	
7	Body A	Aluminum alloy	
8	Table	Aluminum alloy	
9	Housing A	Aluminum alloy	
10	Housing B	Aluminum alloy	
11	Top cover	Aluminum alloy	

No.	Description	Material	Note
12	Side cover	Aluminum alloy	
13	Bearing retainer	Aluminum alloy	
14	Bumper	IIR	
15	End cover A	PC	
16	End cover B	PC	
17	Inner cover	PC	
18	Motor cover R	PC	
19	Motor cover L	PC	
20	Auto switch	—	
21	Magnet	Rare earth magnet	
22	Brake	—	

LJ1

LG1

LC1

LX

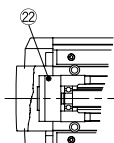
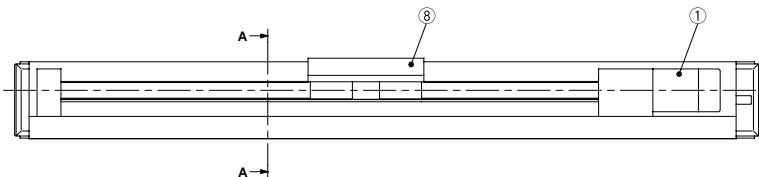
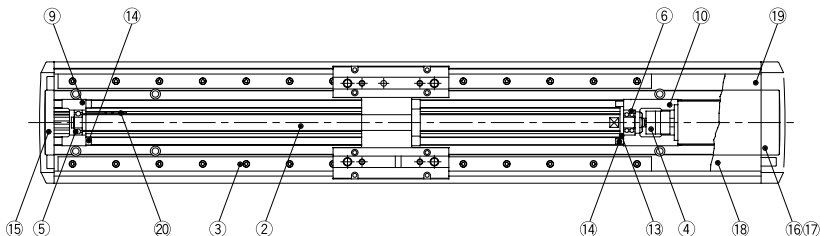
LC6D/LC6C

Switches

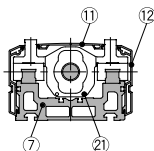
Series LJ1H

Construction

LJ1H30



With brake



Section AA

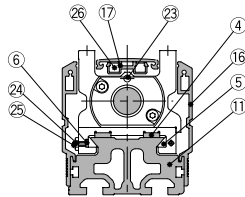
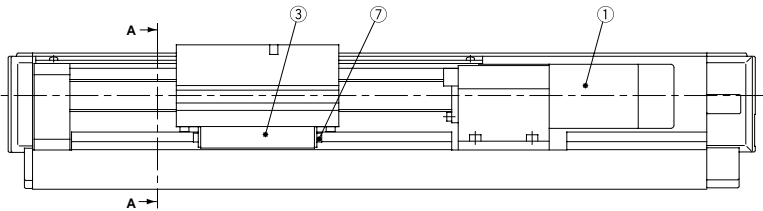
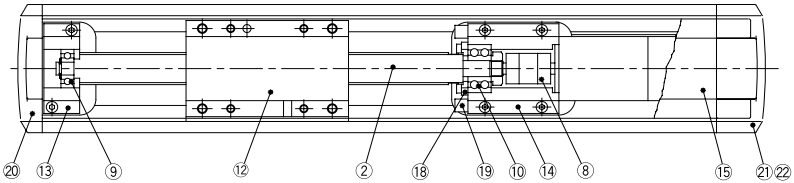
Parts list

No.	Description	Material	Note
1	AC servomotor	—	200W
2	Lead screw	—	Ball screw/Slide screw
3	High rigidity direct acting guide	—	
4	Coupling	—	
5	Bearing R	—	
6	Bearing F	—	
7	Body A	Aluminum alloy	
8	Table	Aluminum alloy	
9	Housing A	Aluminum alloy	
10	Housing B	Aluminum alloy	
11	Top cover	Aluminum alloy	

No.	Description	Material	Note
12	Side cover	Aluminum alloy	
13	Bearing retainer	Carbon steel	Electroless nickel plated
14	Bumper	IIR	
15	End cover A	PC	
16	End cover B	PC	
17	Inner cover	PC	
18	Motor cover A	PC	
19	Motor cover B	PC	
20	Auto switch	—	
21	Magnet	Rare earth magnet	
22	Brake	—	

Construction

LJ1S10



Section AA

Parts list

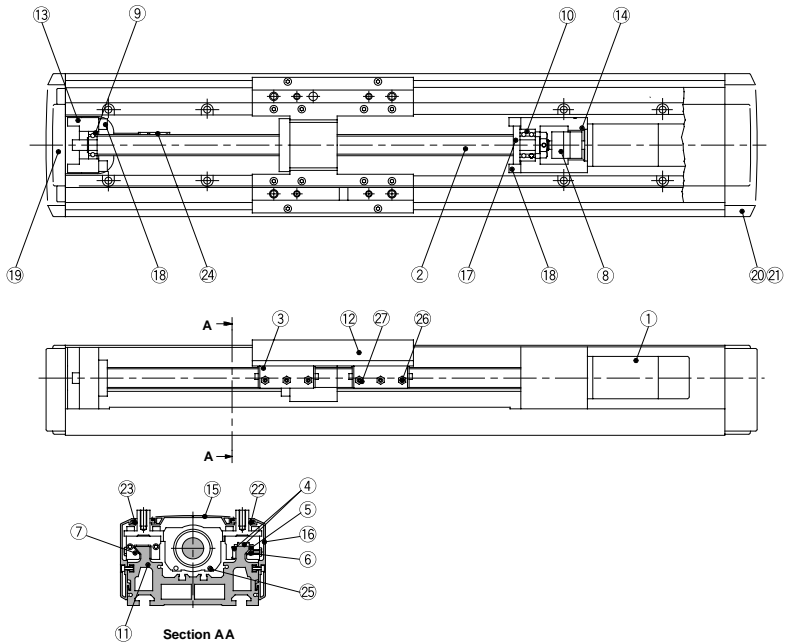
No.	Description	Material	Note
1	AC servomotor	—	50W
2	Lead screw	—	Slide screw
3	Guide frame	Aluminum alloy	
4	Guide plate A	Special resin	
5	Guide plate B	Special resin	
6	Push bar	Carbon steel	Zinc plated
7	Frame cover	Stainless steel	
8	Coupling	—	
9	Bearing R	—	
10	Bearing F	—	
11	Body A	Aluminum alloy	
12	Table	Aluminum alloy	
13	Housing B	Aluminum alloy	

No.	Description	Material	Note
14	Housing A	Aluminum alloy	
15	Top cover	Aluminum alloy	
16	Side cover	Aluminum alloy	
17	Sensor rail	Aluminum alloy	
18	Bearing retainer	Aluminum alloy	
19	Bumper	IIR	
20	End cover A	PC	
21	End cover B	PC	
22	Inner cover	PC	
23	Magnet	Rare earth magnet	
24	Hexagon socket head set screw	Chrome molybdenum steel	M3 x 8
25	Nut	Mild steel	M3
26	Auto switch	—	

Series LJ1S

Construction

LJ1S20



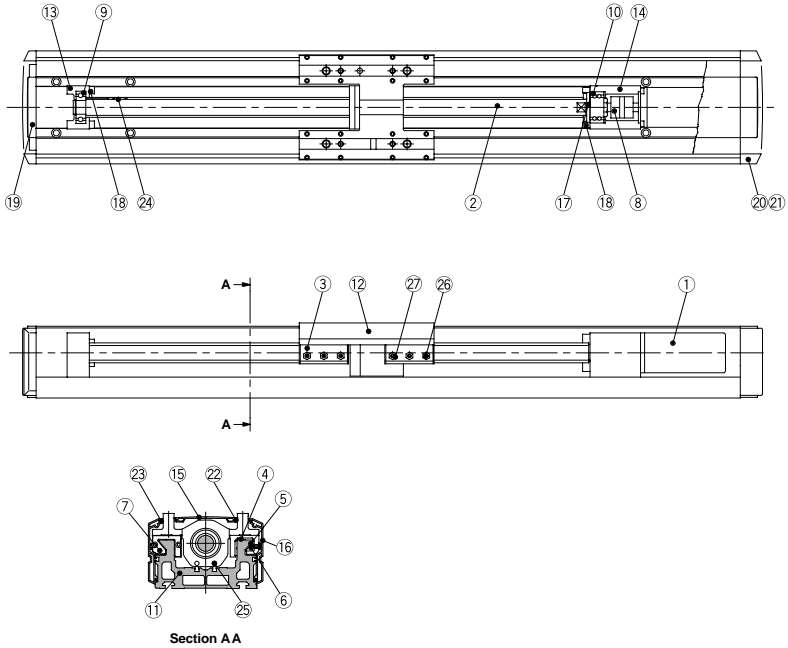
Parts list

No.	Description	Material	Note
1	AC servomotor	—	100W
2	Lead screw	—	Slide screw
3	Guide frame	Aluminum alloy	
4	Guide plate A	Special resin	
5	Guide plate B	Special resin	
6	Push bar	Carbon steel	Zinc plated
7	Frame cover	Stainless steel	
8	Coupling	—	
9	Bearing R	—	
10	Bearing F	—	
11	Body A	Aluminum alloy	
12	Table	Aluminum alloy	
13	Housing A	Aluminum alloy	

No.	Description	Material	Note
14	Housing B	Aluminum alloy	
15	Top cover	Aluminum alloy	
16	Side cover	Aluminum alloy	
17	Bearing retainer	Aluminum alloy	
18	Bumper	IIR	
19	End cover A	PC	
20	End cover B	PC	
21	Inner cover	PC	
22	Motor cover R	PC	
23	Motor cover L	PC	
24	Auto switch	—	
25	Magnet	Rare earth magnet	
26	Hexagon socket head set screw	Chrome molybdenum steel	M4 x 8
27	Nut	Mild steel	M4

Construction

LJ1S30



Parts list

No.	Description	Material	Note
1	AC servomotor	—	200W
2	Lead screw	—	Slide screw
3	Guide frame	Aluminum alloy	
4	Guide plate A	Special resin	
5	Guide plate B	Special resin	
6	Push bar	Carbon steel	Zinc plated
7	Frame cover	Stainless steel	
8	Coupling	—	
9	Bearing R	—	
10	Bearing F	—	
11	Body A	Aluminum alloy	
12	Table	Aluminum alloy	
13	Housing A	Aluminum alloy	

No.	Description	Material	Note
14	Housing B	Aluminum alloy	
15	Top cover	Aluminum alloy	
16	Side cover	Aluminum alloy	
17	Bearing retainer	Carbon steel	Electroless nickel plated
18	Bumper	IIR	
19	End cover A	PC	
20	End cover B	PC	
21	Inner cover	PC	
22	Motor cover R	PC	
23	Motor cover L	PC	
24	Auto switch	—	
25	Magnet	Rare earth magnet	
26	Hexagon socket head set screw	Chrome molybdenum steel	M5 x 8
27	Nut	Mild steel	M5

LJ1

LG1

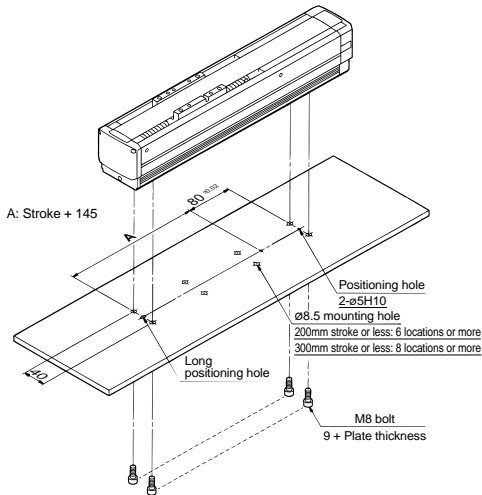
LC1

LX

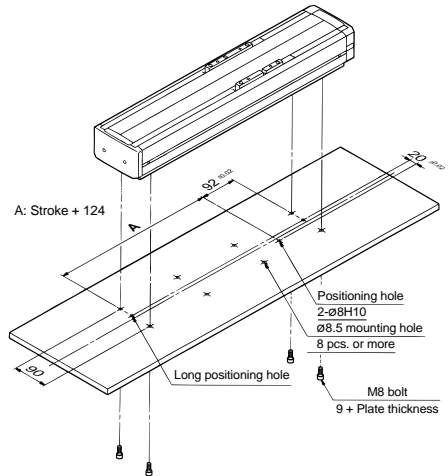
LC6D/LC6C

T-slot Bottom Mount

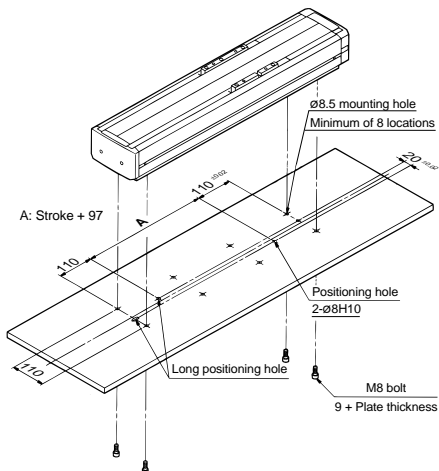
LJ1H10/LJ1S10



LJ1H20/LJ1S20



LJ1H30/LJ1S30



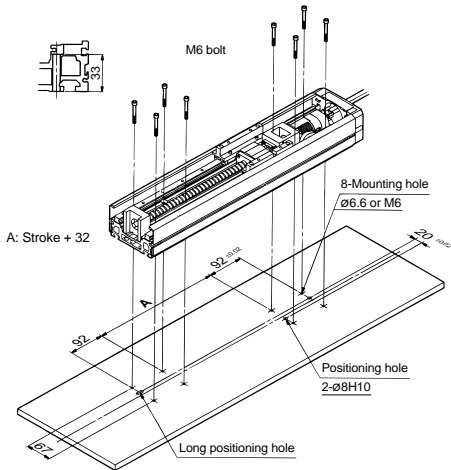
Note 1) Although T-nuts (LJ1-T8) for mounting are included with the body for LJ1H10/LJ1S10, they are optional for other models. (See page 100.)

Note 2) To insert the T-nuts, remove the covers at both ends of the body and insert them into the T-slots.

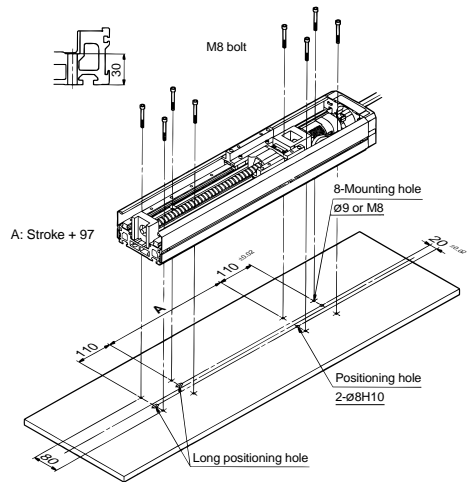
Note 3) When positioning of the body is required, also perform pin hole machining.

Top Mount

LJ1H20/LJ1S20



LJ1H30/LJ1S30



LJ1

LG1

LC1

LX

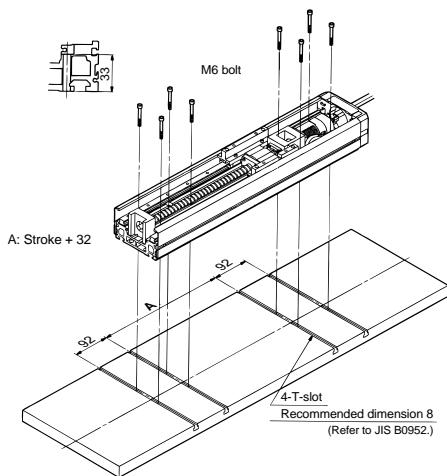
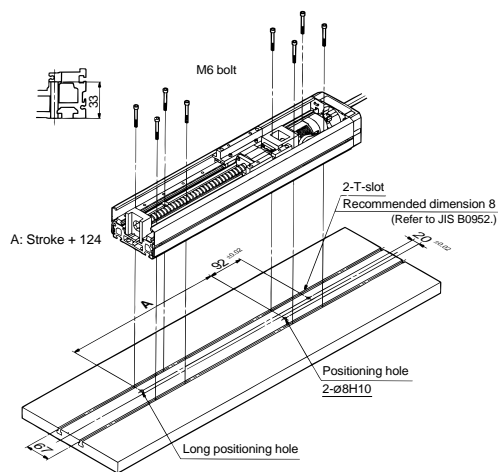
LC6D/LC6C

Switches

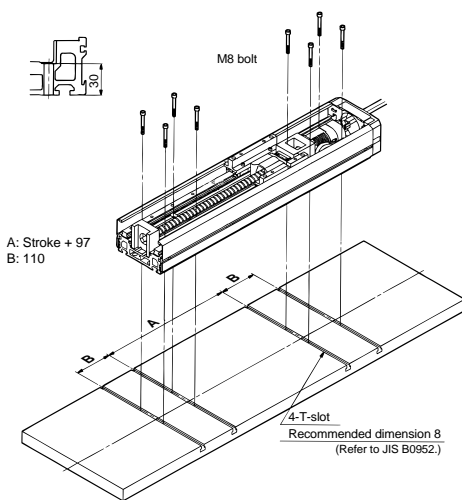
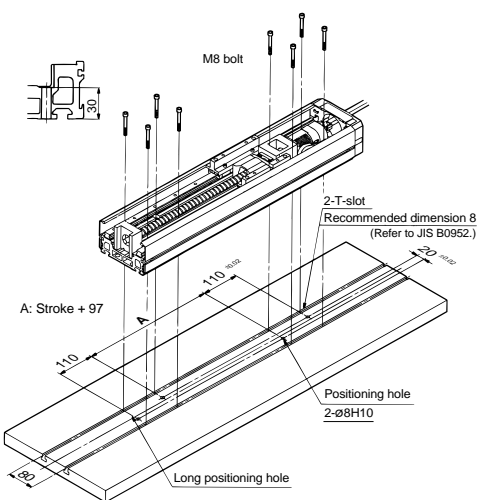
Series LJ1

Top Mount (Using T-slots on the Mounting Frame)

LJ1H20/LJ1S20



LJ1H30/LJ1S30



Deflection Data/LJ1H

The load and the amount of deflection at load point W are shown in the graphs below for each series.

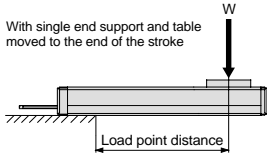


Figure 1. Horizontal

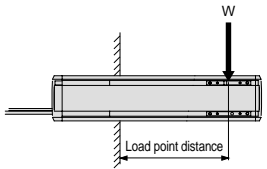
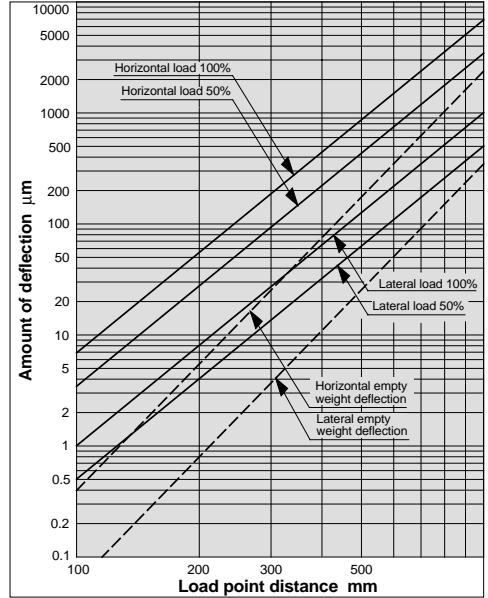
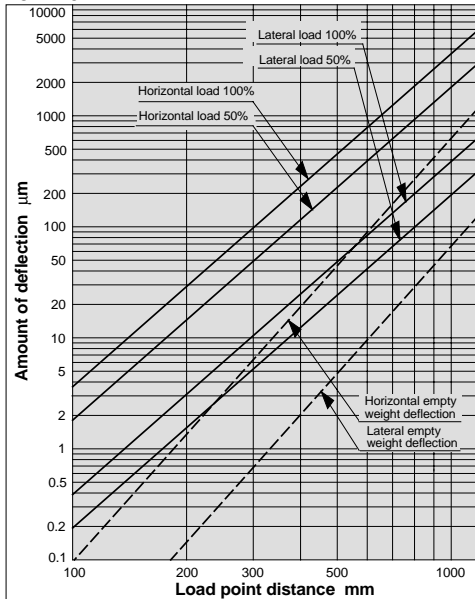


Figure 2. Lateral

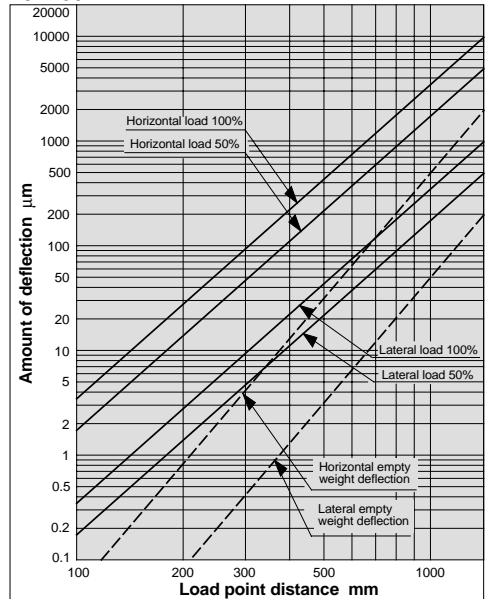
LJ1H10



LJ1H20



LJ1H30



LJ1

LG1

LC1

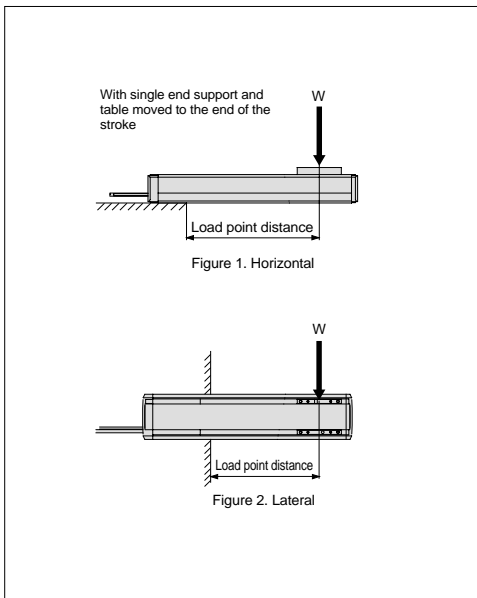
LX

LC6D/LC6C

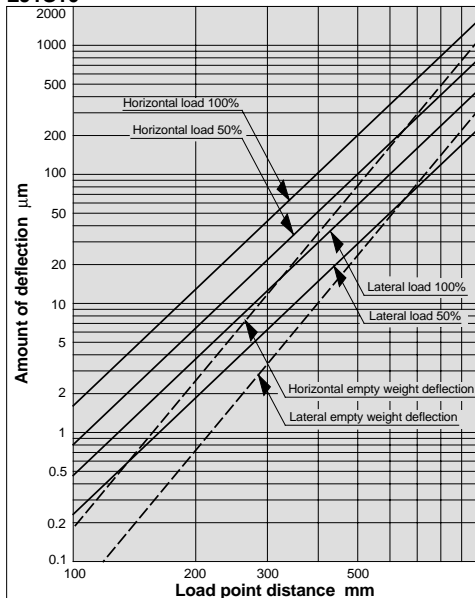
Switches

Deflection Data/LJ1S

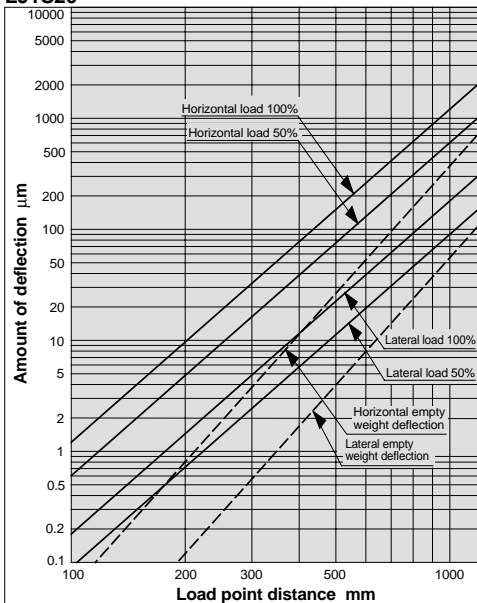
The load and the amount of deflection at load point W are shown in the graphs below for each series.



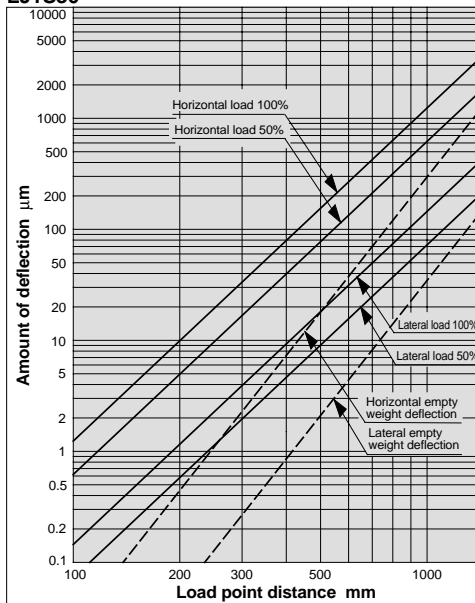
LJ1S10

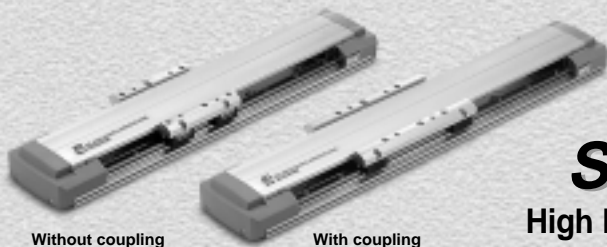


LJ1S20



LJ1S30





Low Profile Single Axis Electric Actuator

Series **LG1H**

High Rigidity Direct Acting Guide

Series	Motor type	Guide type	Mounting orientation	Motor/Screw connection	Model	Lead screw lead mm			Page		
						Ground ball screw	Rolled ball screw	Slide screw			
LG1H	Standard motor	High rigidity direct acting guide	Horizontal	Without coupling	LG1□H20	10	20	10	20	20	148
				With coupling	LG1□H21	10	20	10	20	20	158
	Non-standard motor			With coupling	LG1□H21	10	20	10	20	20	168

- Options _____ Page 178
- Construction _____ 179
- Mounting _____ 181
- Non-standard Motor Mounting _____ 182
- Deflection Data _____ 183

LG1

LG1

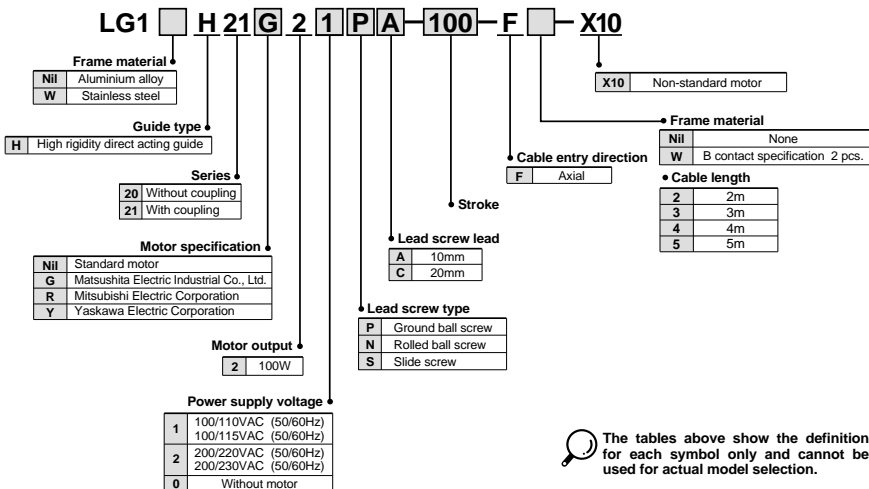
LC1

LX

LC6D/LC6C

Switches

Part Number Designations



The tables above show the definition for each symbol only and cannot be used for actual model selection.

Standard Motor**Series LG1 H20**

Motor Output

100WHigh Rigidity
Direct Acting
Guide

Ground Ball Screw

ø15mm/10mm lead

Horizontal Mount

Without Coupling

How to OrderLG1 H202 1 PA — Stroke — F 2

● Power voltage

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

● Cable length

2	2m
3	3m
4	4m
5	5m

● Frame material

Nil	Aluminum alloy
T	Stainless steel

Specifications

Standard stroke		mm	100	200	300	400	
Performance	Body weight	Aluminum	kg	5.3	6.1	6.9	7.7
		Stainless steel	kg	8.3	9.6	10.8	12.0
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	30				
	Rated thrust	N	180				
	Maximum speed	mm/s	500				
Main parts	Motor	AC servomotor (100W)					
	Encoder	Incremental system					
	Lead screw	Ground ball screw ø15mm, 10mm lead					
	Guide	High rigidity direct acting guide					
	Motor/Screw connection	Without coupling					
Controller	Model	LC1-1F2HA□□□ (Refer to page 185 for details.)					

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.

Applicable strokes: 150, 250, 350

Example) LG1H2021PA-150-F2-X2

Allowable Moment (N·m)**Allowable static moment**

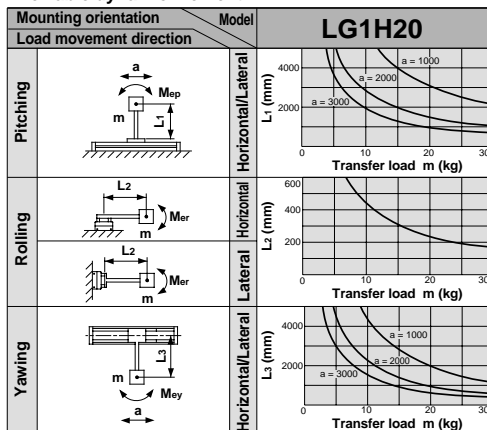
Pitching	71
Rolling	79
Yawing	75

m : Transfer load (kg)

a : Work piece acceleration (mm/s²)

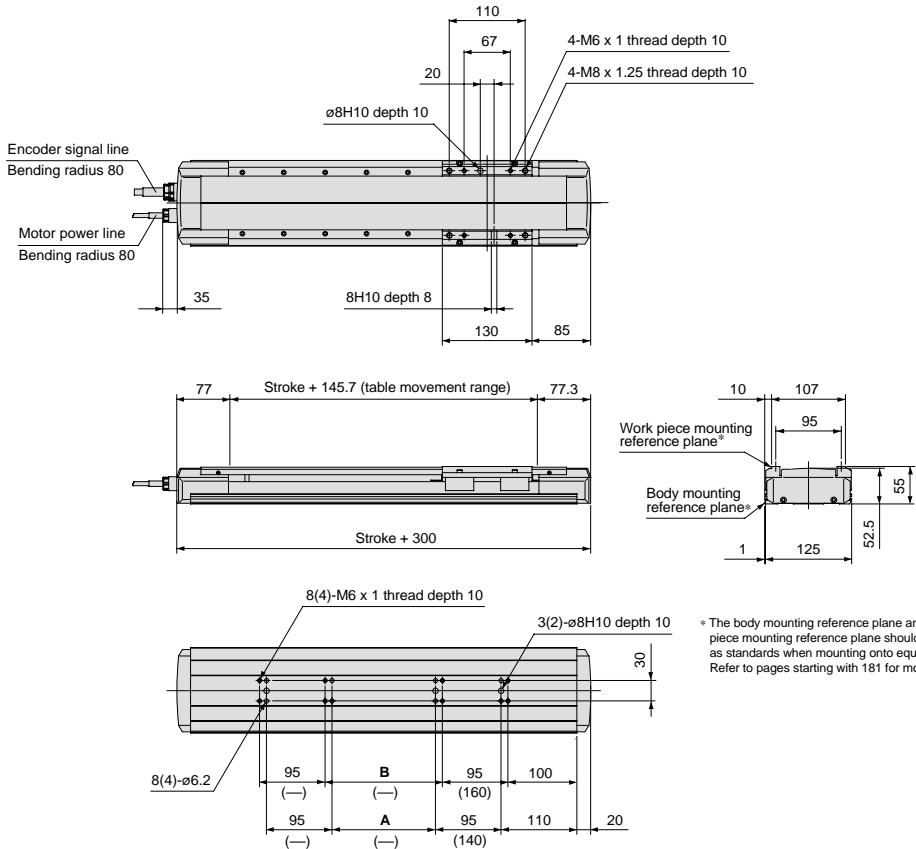
Me : Dynamic moment

L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

Refer to page 183 for deflection data.

Dimensions/LG1□H20□PA

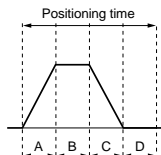


Model	Stroke	A	B
LG1□H20□PA-100-F□*	100	—	—
LG1□H20□PA-200-F□	200	50	70
LG1□H20□PA-300-F□	300	150	170
LG1□H20□PA-400-F□	400	250	270

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4



* Values will vary slightly depending on the operating conditions.

LG1
LG1
LG1
LX
LC6D/LC6C
Switches

Standard Motor**Series LG1 H20**

Motor Output

100WHigh Rigidity
Direct Acting
Guide

Ground Ball Screw

∅15mm/20mm lead

Horizontal Mount

Without Coupling

How to OrderLG1 H202 1 PC Stroke F 2• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum	kg	8.5	9.3	10.1	10.9	11.7	12.5
		Stainless steel	kg	13.3	14.5	15.8	17.1	18.3	19.6
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	90						
	Maximum speed <small>Note)</small>	mm/s	1000	1000	930	740	600	500	
Positioning repeatability	mm	±0.02							
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
Motor/Screw connection	Without coupling								
Controller	Model	LC1-1F2HC□-□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 450, 550, 650, 750, 850, 950

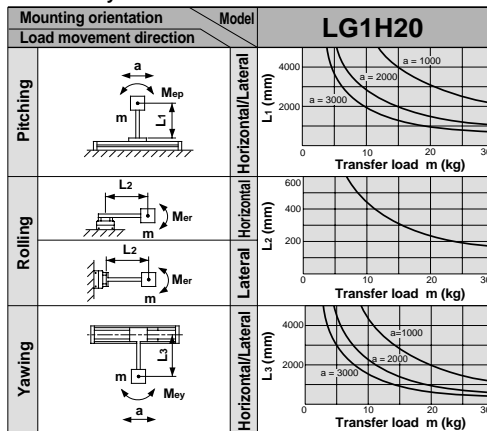
Example) LG1H2021PC-550-F2-X2

Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

Allowable Moment (N·m)**Allowable static moment**

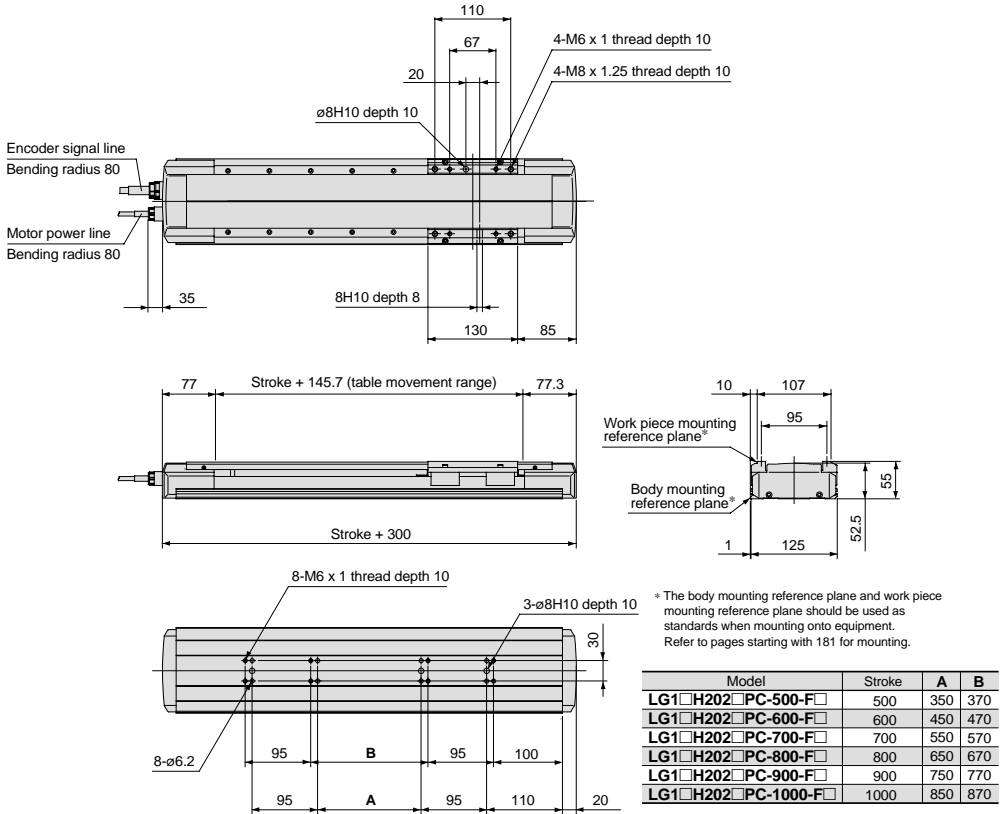
Pitching	71
Rolling	79
Yawing	75

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

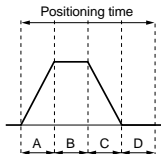
Refer to page 183 for deflection data.

Dimensions/LG1□H20□PC



Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 2000mm/s²

* Values will vary slightly depending on the operating conditions.

Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LG1□H20□PC-500-F□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1□2HC1-□□
LG1□H20□PC-600-F□	1000	700	500	500	
LG1□H20□PC-700-F□	930	600	500	500	
LG1□H20□PC-800-F□	740	600	500	500	
LG1□H20□PC-900-F□	600	500	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1□2HC2-□□
LG1□H20□PC-1000-F□	500	500	500	500	

* Consult SMC if outside of the above conditions.

LJ1
 LG1
 LC1
 LX
 LC6D/LC6C
 Switches

Standard Motor

Series LG1 H20

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

ø15mm/10mm lead

Horizontal Mount

Without Coupling

How to Order

LG1 **H202** **1** **NA** — **Stroke** — **F** **2**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

		Standard stroke	mm	100	200	300	400
Performance	Body weight	Aluminum	kg	5.3	6.1	6.9	7.7
		Stainless steel	kg	8.3	9.6	10.8	12.0
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	30				
	Rated thrust	N	180				
	Maximum speed	mm/s	500				
Main parts	Positioning repeatability	mm	±0.05				
	Motor	AC servomotor (100W)					
	Encoder	Incremental system					
	Lead screw	Rolled ball screw ø15mm, 10mm lead					
	Guide	High rigidity direct acting guide					
Controller	Motor/Screw connection	Without coupling					
	Model	LC1-1F2HA□-□□ (Refer to page 185 for details.)					

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number. Applicable strokes: 150, 250, 350

Example **LG1H2021NA-150-F2-X2**

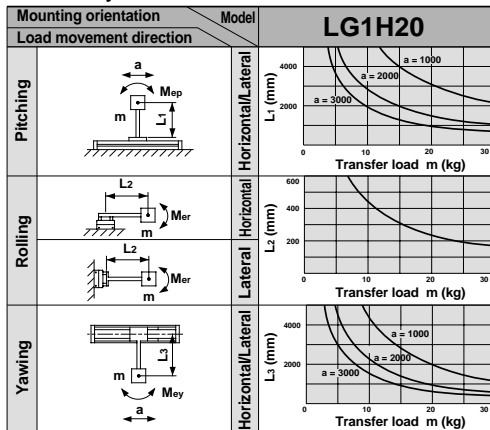
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	79
Yawing	75

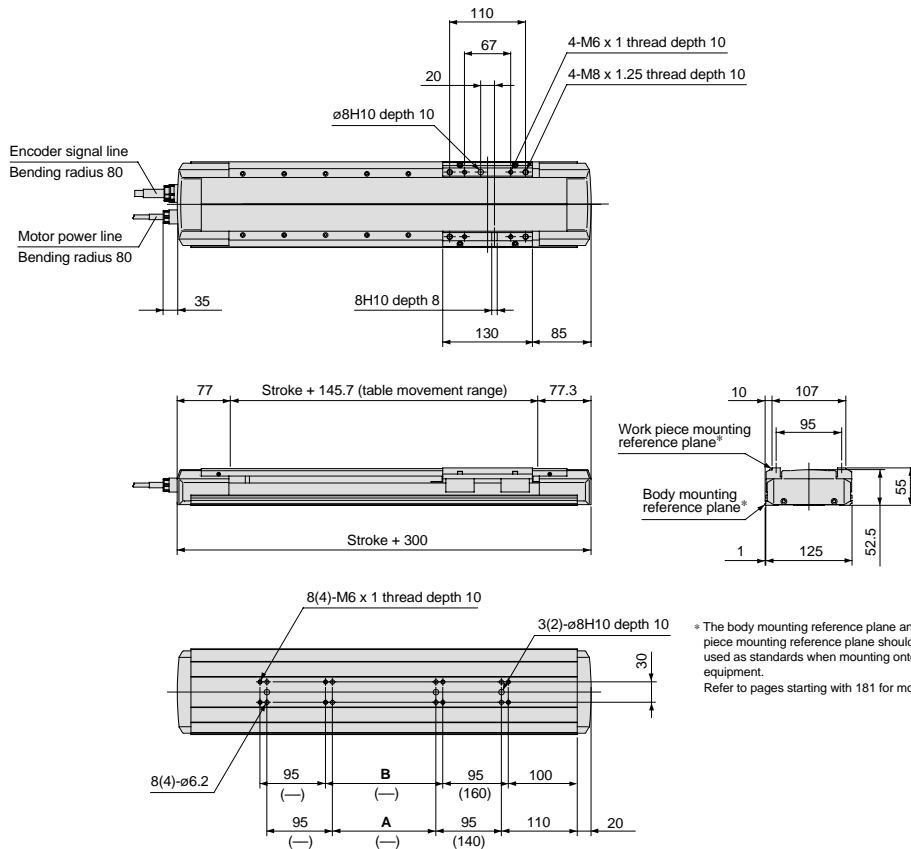
m : Transfer load (kg)
 a : Work piece acceleration (mm/s²)
 Me : Dynamic moment
 L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H20□PA



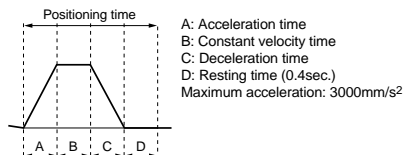
Model	Stroke	A	B
LG1□H20□PA-100-F□*	100	—	—
LG1□H20□PA-200-F□	200	50	70
LG1□H20□PA-300-F□	300	150	170
LG1□H20□PA-400-F□	400	250	270

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



LG1

LG1

LG1

LX

LC6D/LC6C

Switches

Standard Motor

Series LG1 H20

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅15mm/20mm lead

Horizontal Mount

Without Coupling

How to Order

LG1 **H202** **1** **NC** — **Stroke** — **F** **2**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum	kg	8.5	9.3	10.1	10.9	11.7	12.5
		Stainless steel	kg	13.3	14.5	15.8	17.1	18.3	19.6
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	90						
	Maximum speed ^{Note)}	mm/s	1000	1000	930	740	600	500	
Main parts	Positioning repeatability	mm	±0.05						
	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
Motor/Screw connection	Without coupling								
Controller	Model	LC1-1F2HC□-□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.

Applicable strokes: 450, 550, 650, 750, 850, 950

Example) **LG1H2021NC-550-F2-X2**

Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

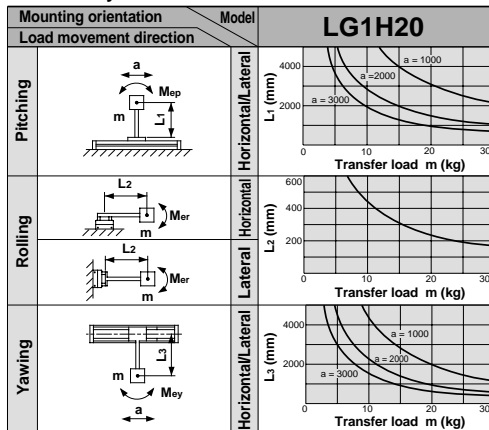
Allowable Moment (N·m)

Allowable static moment

Pitching	71
Rolling	79
Yawing	75

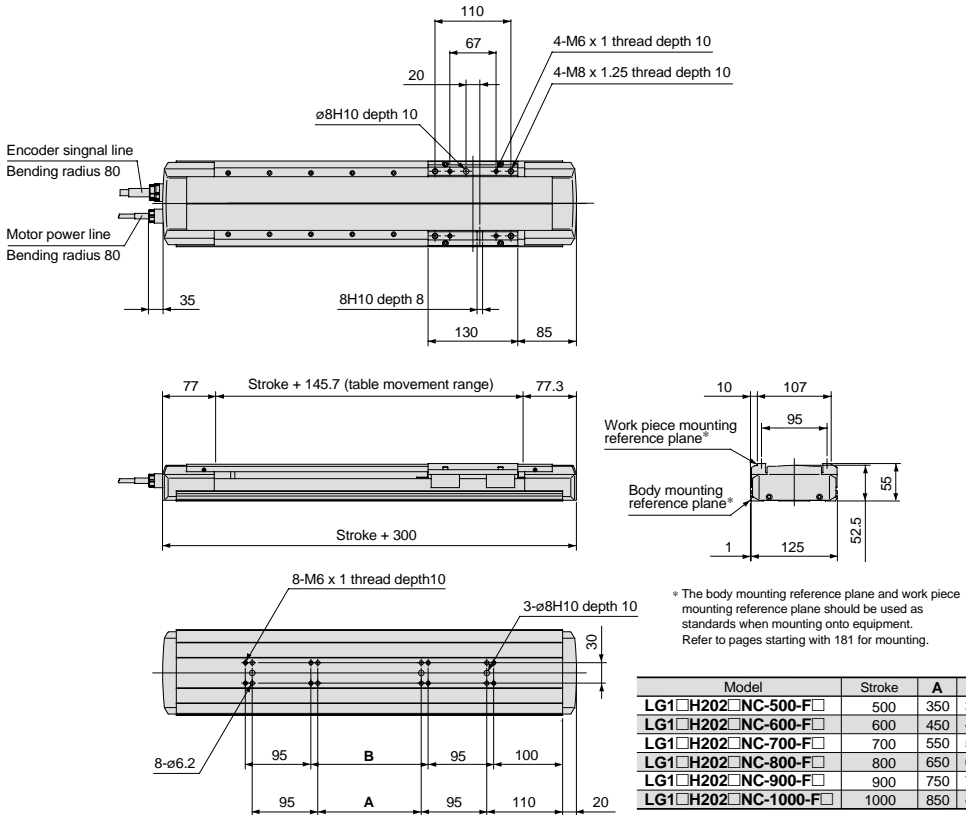
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

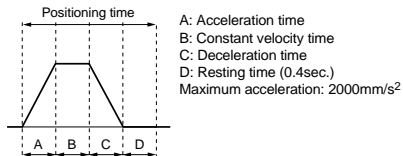
Dimensions/LG1□H20□NC



Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LG1□H20□NC-500-F□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1□2HC1-□□
LG1□H20□NC-600-F□	1000	700	500	500	
LG1□H20□NC-700-F□	930	600	500	500	
LG1□H20□NC-800-F□	740	600	500	500	
LG1□H20□NC-900-F□	600	500	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1□2HC2-□□
LG1□H20□NC-1000-F□	500	500	500	500	

* Consult SMC if outside of the above conditions.

Standard Motor**Series LG1 H20**

Motor Output

100WHigh Rigidity
Direct Acting
Guide

Slide Screw

ø20mm/20mm lead

Horizontal Mount**Without Coupling****How to Order****LG1** **H202** **1** **SC** — **Stroke** — **F** **2**• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000	1200	
Performance	Body weight	Aluminum	kg	5.8	6.7	7.6	8.5	9.4	10.2	11.1	12.0	12.9	13.8	15.9
		Stainless steel	kg	9.1	10.5	11.9	13.2	14.6	16.0	17.4	18.8	20.1	21.6	24.9
	Operating temperature range	°C	5 to 40 (with no condensation)											
	Work load	kg	15											
	Rated thrust	N	50											
	Maximum speed	mm/s	500											
Main parts	Positioning repeatability	mm	±0.1											
	Motor	AC servomotor (100W)												
	Encoder	Incremental system												
	Lead screw	Slide screw ø20mm, 20mm lead												
	Guide	High rigidity direct acting guide												
Controller	Motor/Screw connection	Without coupling												
	Model	LC1-1F2MC□-□ (Refer to page 185 for details.)												

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350, 450, 550, 650, 750, 850, 950, 1050

Example) LG1H2021SC-150-F2-X2

Allowable Moment (N·m)**Allowable static moment**

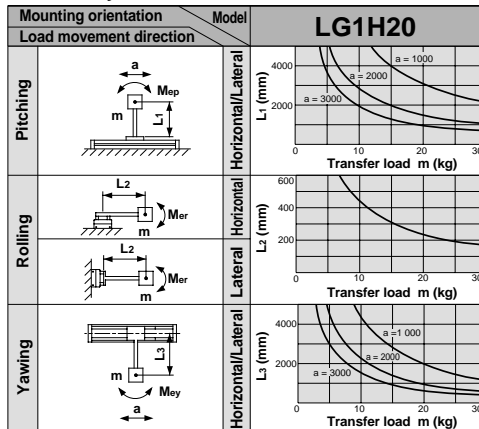
Pitching	71
Rolling	79
Yawing	75

m : Transfer load (kg)

a : Work piece acceleration (mm/s²)

Me : Dynamic moment

L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

Refer to page 183 for deflection data.

Standard Motor/Horizontal Mount Specification **Series LG1□H20**

Dimensions/LG1□H202□SC

LG1

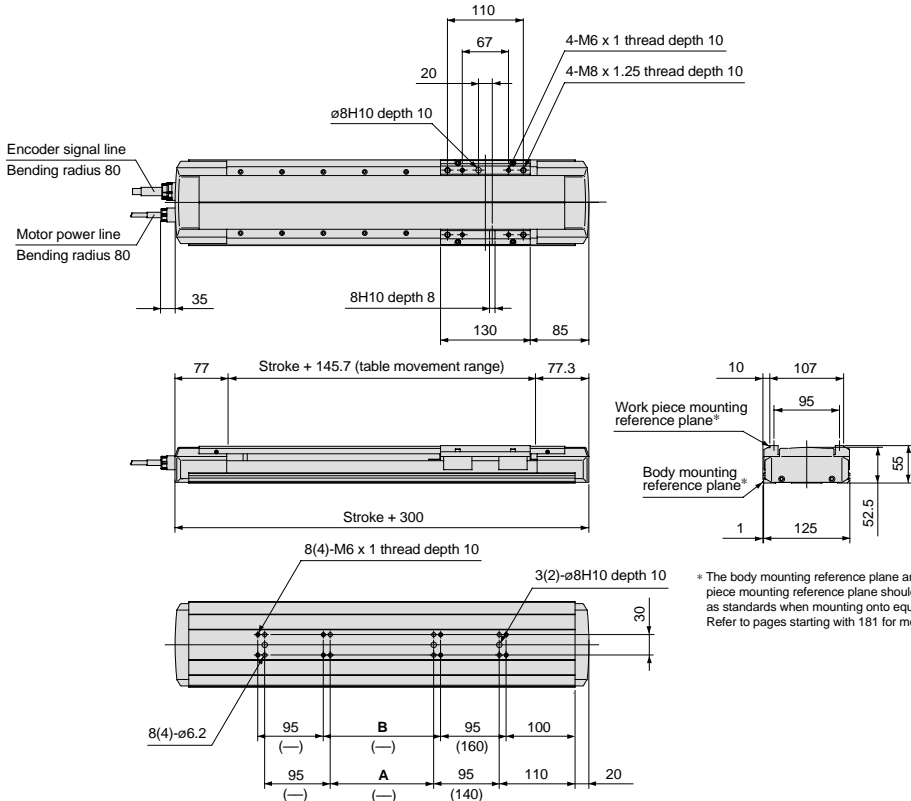
LG1

LG1

LX

LC6D/LC6C

Switches



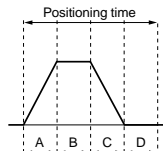
Model	Stroke	A	B
LG1□H202□SC-100-F□*	100	—	—
LG1□H202□SC-200-F□	200	50	70
LG1□H202□SC-300-F□	300	150	170
LG1□H202□SC-400-F□	400	250	270
LG1□H202□SC-500-F□	500	350	370
LG1□H202□SC-600-F□	600	450	470
LG1□H202□SC-700-F□	700	550	570
LG1□H202□SC-800-F□	800	650	670
LG1□H202□SC-900-F□	900	750	770
LG1□H202□SC-1000-F□	1000	850	870
LG1□H202□SC-1200-F□	1200	1050	1070

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	600	1200
Speed (mm/s)	10	0.5	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	250	0.5	0.6	1.0	3.0	5.4
	500	0.5	0.6	0.9	1.9	3.1

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)
Maximum acceleration: 2000mm/s²

Standard Motor

Series LG1 H21

Horizontal Mount

With Coupling

Motor Output

100W

High Rigidity
Direct Acting
Guide

Ground Ball Screw

∅15mm/10mm lead

How to Order

LG1 **H212** **1** **PA** — **Stroke** — **F** **2**

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

• **Frame material**

NII	Aluminum alloy
T	Stainless steel

Specifications

		Standard stroke	mm	100	200	300	400
Performance	Body weight	Aluminum	kg	5.3	6.1	6.9	7.7
		Stainless steel	kg	8.3	9.6	10.8	12.0
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	30				
	Rated thrust	N	180				
	Maximum speed	mm/s	500				
Main parts	Motor	AC servomotor (100W)					
	Encoder	Incremental system					
	Lead screw	Ground ball screw ∅15mm, 10mm lead					
	Guide	High rigidity direct acting guide					
	Motor/Screw connection	With coupling					
Controller	Model	LC1-1D2HA□□□ (Refer to page 185 for details.)					

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350
Example) **LG1H2121PA-150-F2-X2**

Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

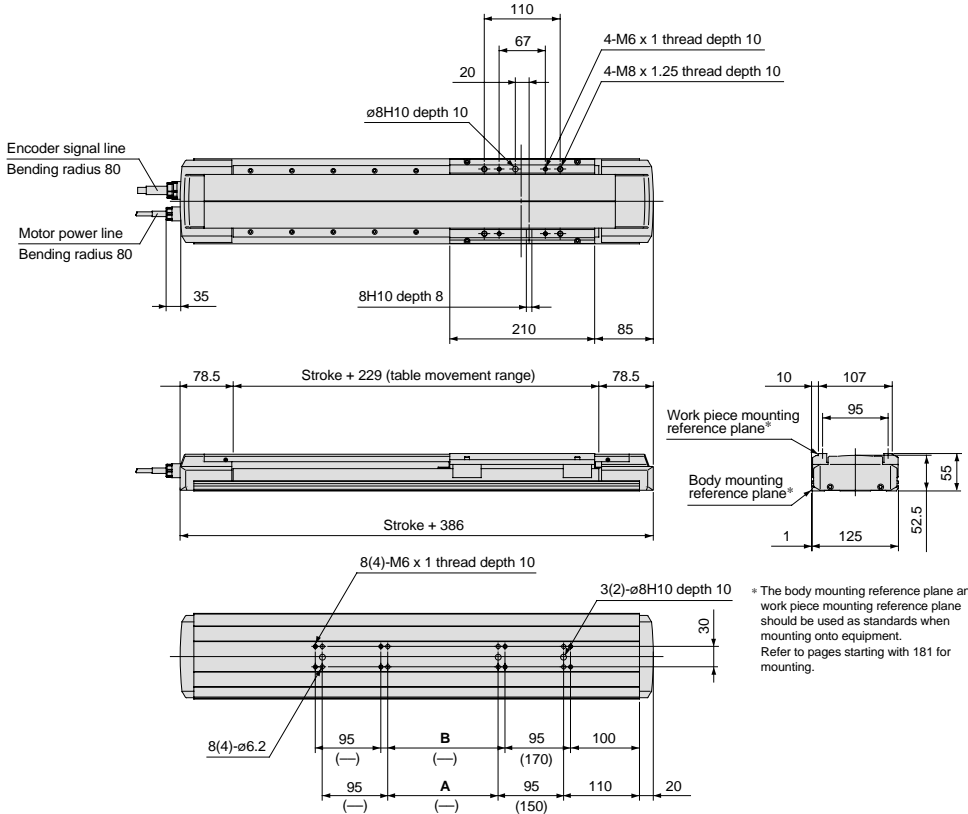
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment

Mounting orientation		Model										
Load movement direction		LG1H21										
Pitching	Horizontal	 <table border="1"> <tr> <th>L₁ (mm)</th> <th>Transfer load m (kg)</th> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>2000</td> <td>~10</td> </tr> <tr> <td>4000</td> <td>~5</td> </tr> </table>	L ₁ (mm)	Transfer load m (kg)	0	0	2000	~10	4000	~5		
	L ₁ (mm)	Transfer load m (kg)										
0	0											
2000	~10											
4000	~5											
Rolling	Horizontal	 <table border="1"> <tr> <th>L₂ (mm)</th> <th>Transfer load m (kg)</th> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>200</td> <td>~10</td> </tr> <tr> <td>400</td> <td>~5</td> </tr> <tr> <td>600</td> <td>~3</td> </tr> </table>	L ₂ (mm)	Transfer load m (kg)	0	0	200	~10	400	~5	600	~3
	L ₂ (mm)	Transfer load m (kg)										
0	0											
200	~10											
400	~5											
600	~3											
Yawing	Lateral	 <table border="1"> <tr> <th>L₁ (mm)</th> <th>Transfer load m (kg)</th> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>2000</td> <td>~10</td> </tr> <tr> <td>4000</td> <td>~5</td> </tr> </table>	L ₁ (mm)	Transfer load m (kg)	0	0	2000	~10	4000	~5		
	L ₁ (mm)	Transfer load m (kg)										
0	0											
2000	~10											
4000	~5											

Refer to page 183 for deflection data.

Dimensions/LG1□H212□PA



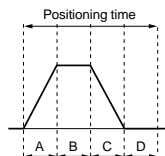
Model	Stroke	A	B
LG1□H212□PA-100-F□*	100	—	—
LG1□H212□PA-200-F□	200	60	80
LG1□H212□PA-300-F□	300	160	180
LG1□H212□PA-400-F□	400	260	280

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 3000mm/s²

How to Order

LG1 **H212** **1** **PC** **Stroke** **F** **2**

● **Frame material**

Nil	Aluminum alloy
T	Stainless steel

● **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

● **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum	kg	8.5	9.3	10.1	10.9	11.7	12.5
		Stainless steel	kg	13.3	14.5	15.8	17.1	18.3	19.6
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	90						
	Maximum speed <small>(Note)</small>	mm/s	1000	1000	930	740	600	500	
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ø15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Controller	Model	LC1-1D2HC-□-□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 450, 550, 650, 750, 850, 950
Example) **LG1H2121PC-550-F2-X2**

(Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

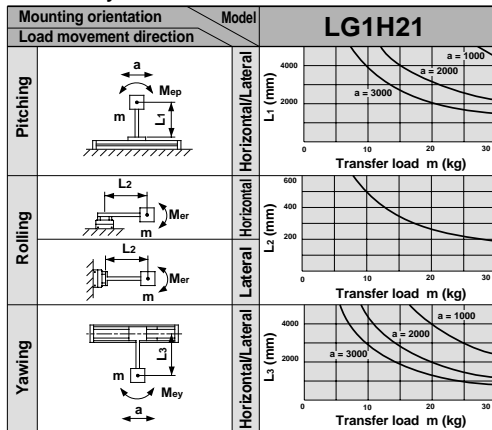
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

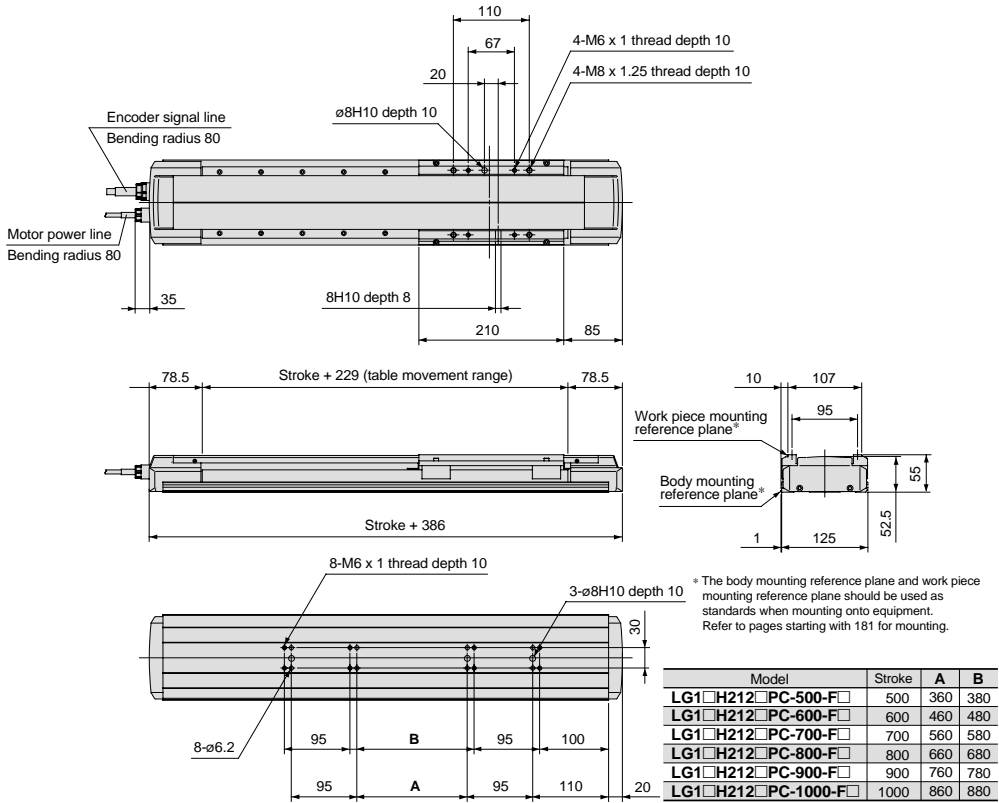
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



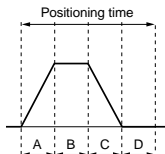
Refer to page 183 for deflection data.

Dimensions/LG1□H212□PC



Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 2000mm/s²

* Values will vary slightly depending on the operating conditions.

Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LG1□H202□PC-500-F□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1□2HC1-□□
LG1□H202□PC-600-F□	1000	700	500	500	
LG1□H202□PC-700-F□	930	600	500	500	
LG1□H202□PC-800-F□	740	600	500	500	
LG1□H202□PC-900-F□	600	500	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1□2HC2-□□
LG1□H202□PC-1000-F□	500	500	500	500	

* Consult SMC if outside of the above conditions.

Standard Motor

Series LG1 H21

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅15mm/10mm lead

Horizontal Mount

With Coupling

How to Order

LG1 **H212** **1** **NA** — **Stroke** — **F** **2**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	100	200	300	400
Performance	Body weight	Aluminum kg	5.3	6.1	6.9	7.7
		Stainless steel kg	8.3	9.6	10.8	12.0
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	30			
	Rated thrust	N	180			
	Maximum speed	mm/s	500			
Main parts	Positioning repeatability	mm	±0.05			
	Motor		AC servomotor (100W)			
	Encoder		Incremental system			
	Lead screw		Rolled ball screw ∅15mm, 10mm lead			
	Guide		High rigidity direct acting guide			
Controller	Motor/Screw connection		With coupling			
	Model		LC1-1D2HA□□□ (Refer to page 185 for details.)			

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 150, 250, 350
Example) **LG1H2121NA-150-F2-X2**

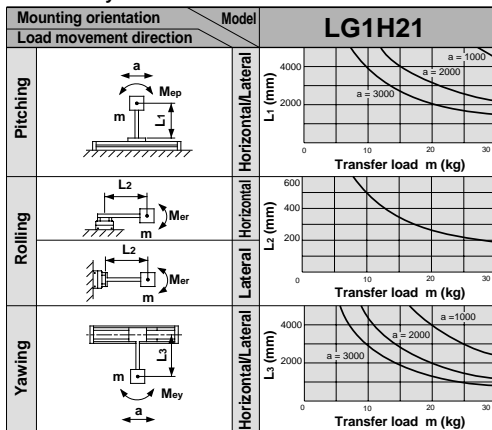
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

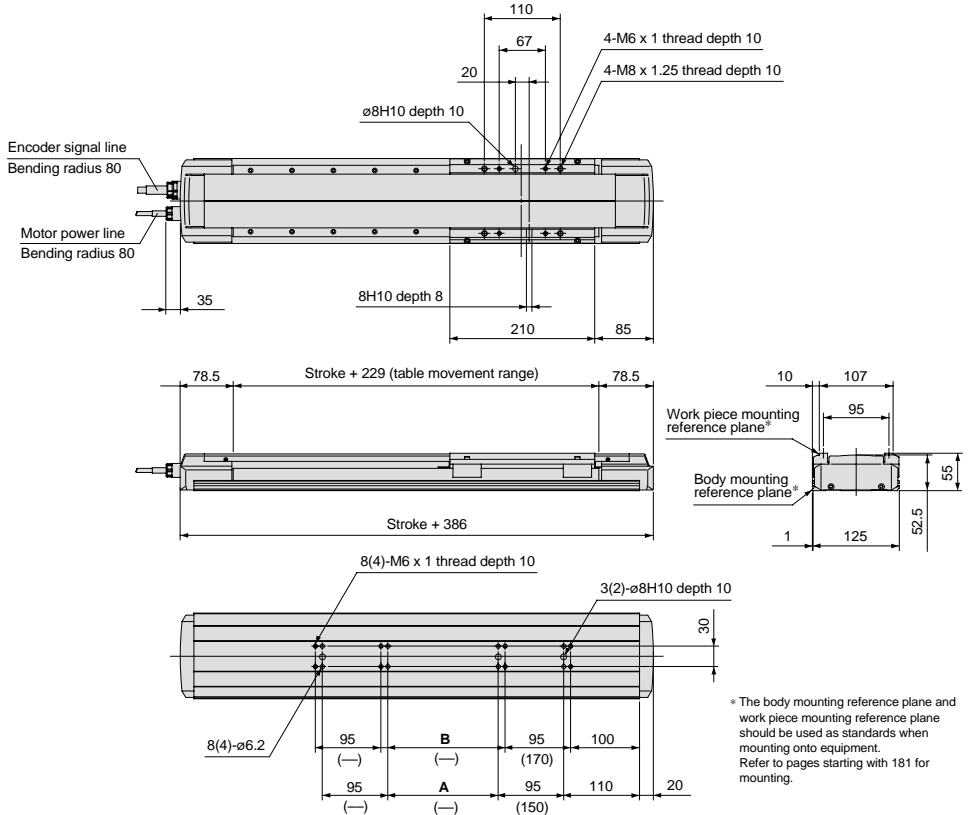
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H212□NA

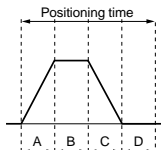


Model	Stroke	A	B
LG1□H212□NA-100-F□*	100	—	—
LG1□H212□NA-200-F□	200	60	80
LG1□H212□NA-300-F□	300	160	180
LG1□H212□NA-400-F□	400	260	280

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4



* Values will vary slightly depending on the operating conditions.

Standard Motor

Series LG1 H21

Motor Output

100W

High Rigidity
Direct Acting
Guide

Rolled Ball Screw

∅15mm/20mm lead

Horizontal Mount

With Coupling

How to Order

LG1 **H212** **1** **NC** **Stroke** **F** **2**

• **Frame material**

Ni	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum	kg	8.5	9.3	10.1	10.9	11.7	12.5
		Stainless steel	kg	13.3	14.5	15.8	17.1	18.3	19.6
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	90						
	Maximum speed <small>(Note)</small>	mm/s	1000	1000	930	740	600	500	
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Controller	Model	LC1-1D2HC□□□ (Refer to page 185 for details.)							

Intermediate strokes

For manufacture of strokes other than the standard strokes on the left, add "-X2" at the end of the part number.
Applicable strokes: 450, 550, 650, 750, 850, 950
Example) **LG1H2121NC-550-F2-X2**

Note) The speed is limited by the transfer load. Refer to the maximum speeds for each transfer load on the next page.

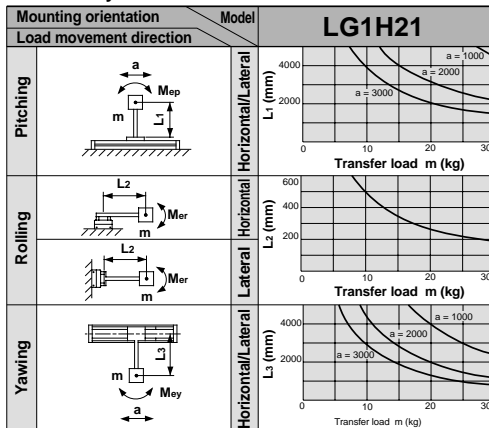
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

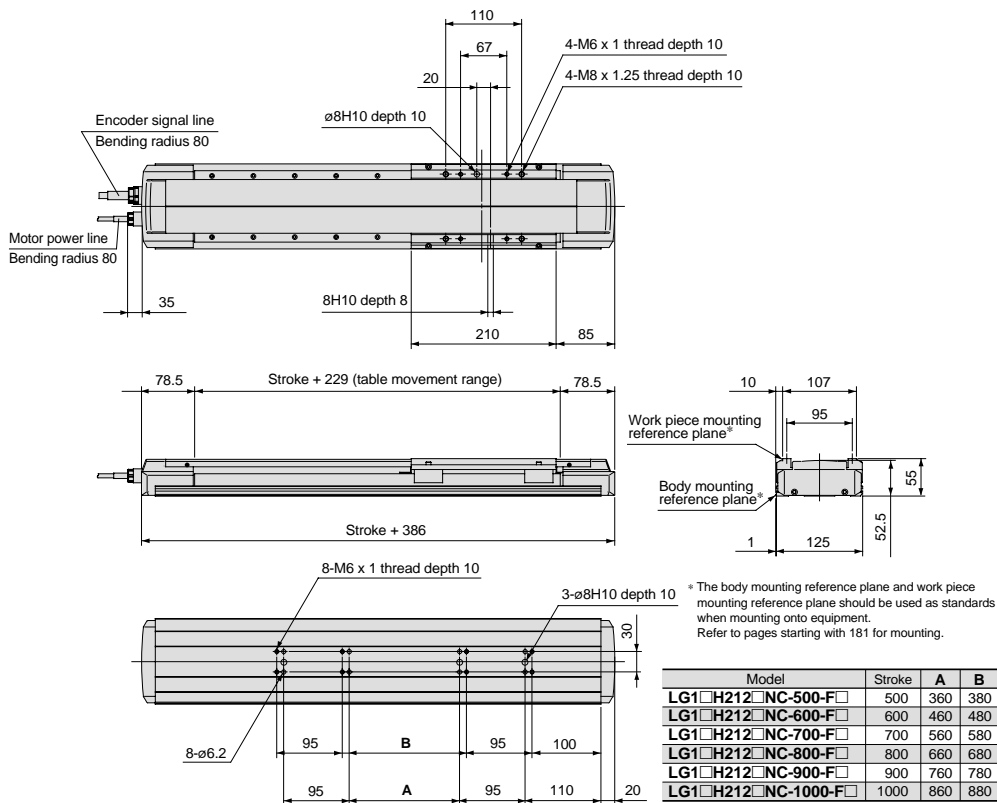
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

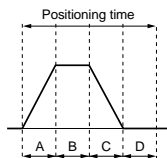
Dimensions/LG1□H212□NC



Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)
Maximum acceleration: 2000mm/s²

Maximum Speeds for Each Transfer Load

Model	Transfer load (kg)				Note
	15	20	25	30	
LG1□H202□NC-500-F□	1000	700	500	500	Power supply: 100/110(V)AC ±10% Compatible controller: LC1-1□2HC1-□□
LG1□H202□NC-600-F□	1000	700	500	500	
LG1□H202□NC-700-F□	930	600	500	500	
LG1□H202□NC-800-F□	740	600	500	500	
LG1□H202□NC-900-F□	600	500	500	500	Power supply: 200/220(V)AC ±10% Compatible controller: LC1-1□2HC2-□□
LG1□H202□NC-1000-F□	500	500	500	500	

* Consult SMC if outside of the above conditions.

Standard Motor

Series LG1 H21

Motor Output

100W

High Rigidity
Direct Acting
Guide

Slide Screw

∅20mm/20mm lead

Horizontal Mount

With Coupling

How to Order

LG1 **H212** **1** **SC** — **Stroke** — **F** **2**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Power supply voltage**

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

• **Cable length**

2	2m
3	3m
4	4m
5	5m

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight	Aluminum	kg	5.8	6.7	7.6	8.5	9.4	10.2	11.1	12.0	12.9	13.8	15.9
		Stainless steel	kg	9.1	10.5	11.9	13.2	14.6	16.0	17.4	18.8	20.1	21.6	24.9
	Operating temperature range	°C	5 to 40 (with no condensation)											
	Work load	kg	15											
	Rated thrust	N	50											
	Maximum speed	mm	500											
Main parts	Positioning repeatability	mm	±0.1											
	Motor	AC servomotor (100W)												
	Encoder	Incremental system												
	Lead screw	Slide screw ∅20mm, 20mm lead												
	Guide	High rigidity direct acting guide												
Controller	Motor/Screw connection	With coupling												
	Model	LC1-1D2MC□-□□ (Refer to page 185 for details.)												

Intermediate strokes

For manufacture of strokes other than the standard strokes above, add "-X2" at the end of the part number.

Applicable strokes: 150, 250, 350, 450, 550, 650, 750, 850, 950, 1050

Example) LG1H2121SC-150-F2-X2

Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

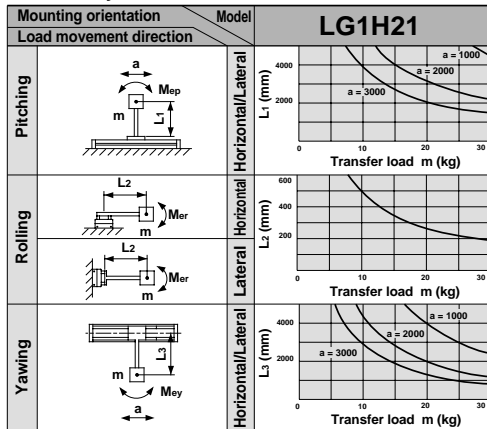
m : Transfer load (kg)

a : Work piece acceleration (mm/s²)

Me : Dynamic moment

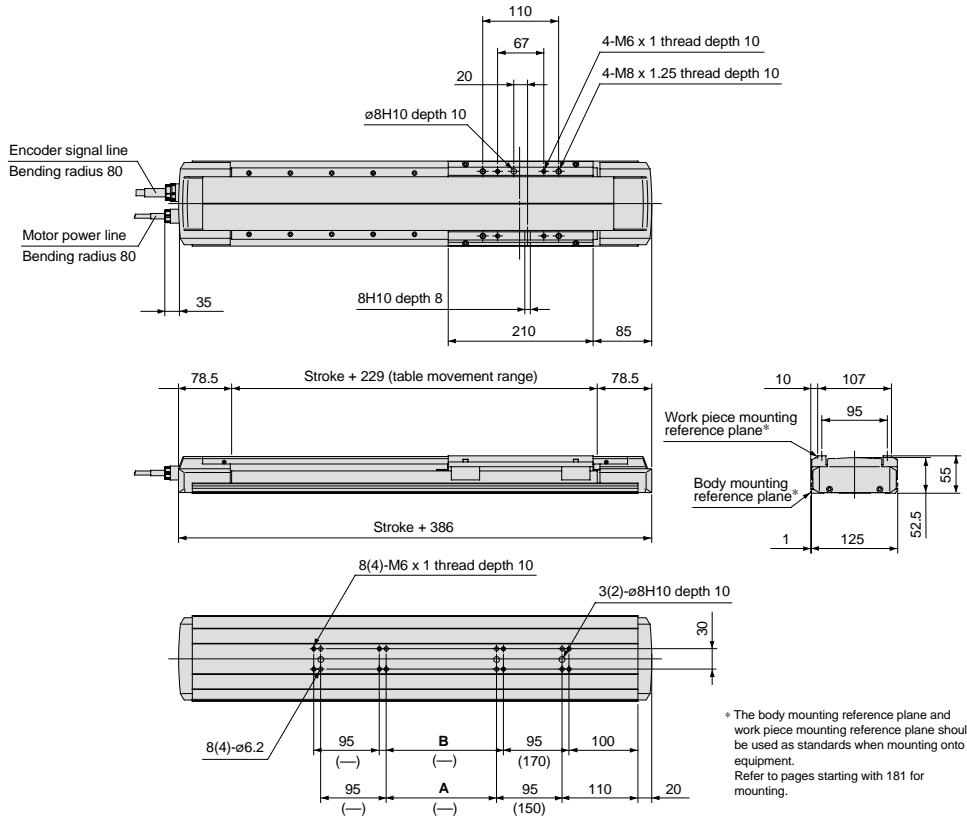
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H212□SC



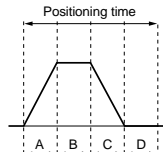
Model	Stroke	A	B
LG1□H212□SC-100-F□*	100	—	—
LG1□H212□SC-200-F□	200	60	80
LG1□H212□SC-300-F□	300	160	180
LG1□H212□SC-400-F□	400	260	280
LG1□H212□SC-500-F□	500	360	380
LG1□H212□SC-600-F□	600	460	480
LG1□H212□SC-700-F□	700	560	580
LG1□H212□SC-800-F□	800	660	680
LG1□H212□SC-900-F□	900	760	780
LG1□H212□SC-1000-F□	1000	860	880
LG1□H212□SC-1200-F□	1200	1060	1080

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	600	1200	
Speed (mm/s)	10	0.5	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	250	0.5	0.6	1.0	3.0	5.4
	500	0.5	0.6	0.9	1.9	3.1

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)
 Maximum acceleration: 2000mm/s²

How to Order

LG1 **H21** **G** **2** **1** **PA** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	100	200	300	400
Performance	Body weight	Aluminum (without motor)	5.2	6.0	6.8	7.6
		Stainless steel (without motor)	8.4	9.7	10.9	12.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	30			
	Maximum speed	mm/s	500			
	Positioning repeatability	mm	±0.02			
Main parts	Motor	AC servomotor (100W)				
	Encoder	Incremental system				
	Lead screw	Ground ball screw ø15mm, 10mm lead				
	Guide	High rigidity direct acting guide				
	Motor/Screw connection	With coupling				
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)				
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less				

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

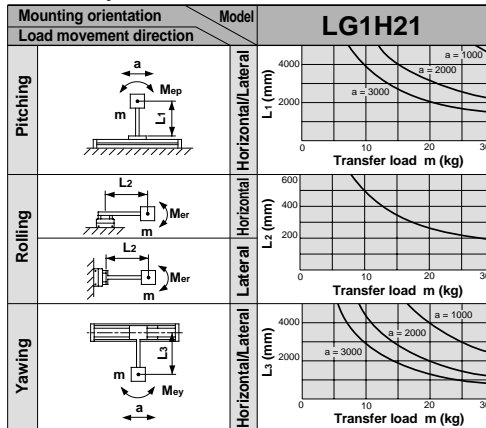
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

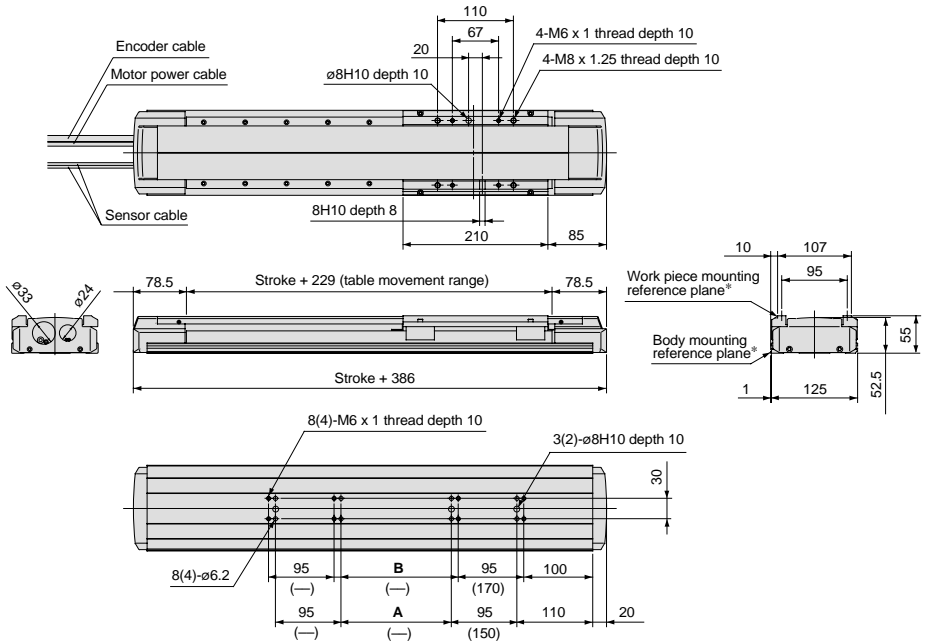
Allowable dynamic moment



Refer to page 183 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LG1□H21**

Dimensions/LG1□H21□2□PA (X10)



Model	Stroke	A	B
LG1□H21□2□PA-100-F□-X10	100	—	—
LG1□H21□2□PA-200-F□-X10	200	60	80
LG1□H21□2□PA-300-F□-X10	300	160	180
LG1□H21□2□PA-400-F□-X10	400	260	280

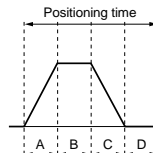
* Dimensions inside () are for a 100 mm stroke.

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	200	400
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

How to Order

LG1 **H21** **G** **2** **1** **PC** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum (without motor)	kg	8.4	9.2	10.0	10.8	11.6	12.4
		Stainless steel (without motor)	kg	13.4	14.7	15.9	17.2	18.4	19.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Maximum speed <small>Note</small>	mm/s	1000	1000	930	740	600	500	
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)							
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) When the work load exceeds 15kg, the speed may be limited. Contact SMC in this case.

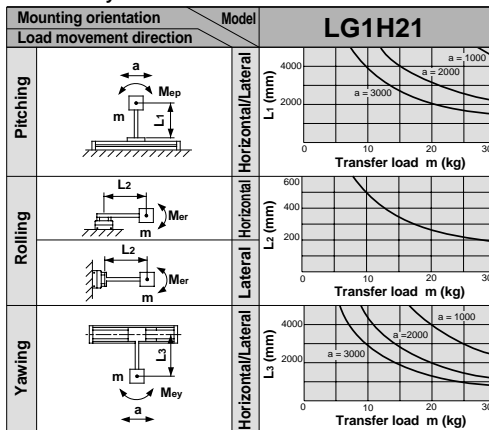
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

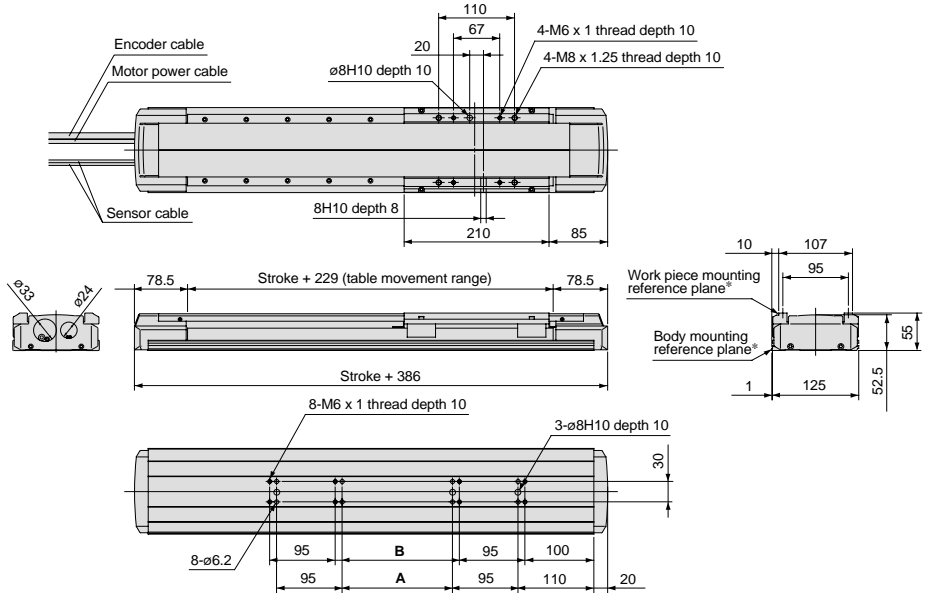
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□PC (X10)



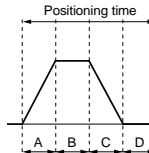
Model	Stroke	A	B
LG1□H21□2□PC-500-F□-X10	500	360	380
LG1□H21□2□PC-600-F□-X10	600	460	480
LG1□H21□2□PC-700-F□-X10	700	560	580
LG1□H21□2□PC-800-F□-X10	800	660	680
LG1□H21□2□PC-900-F□-X10	900	760	780
LG1□H21□2□PC-1000-F□-X10	1000	860	880

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	500	1000	
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec)*
Maximum acceleration: 2000mm/s²
* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.
* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

Non-standard Motor

Series LG1 H21

Horizontal Mount

With Coupling

Motor Output

100W

High Rigidity

Direct Acting Guide

Rolled Ball Screw

∅15mm/10mm lead

How to Order

LG1 **H21** **G** **2** **1** **NA** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	100	200	300	400
Performance	Body weight	Aluminum (without motor)	5.2	6.0	6.8	7.6
		Stainless steel (without motor)	8.4	9.7	10.9	12.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	30			
	Maximum speed	mm/s	500			
	Positioning repeatability	mm	±0.05			
Main parts	Motor	AC servomotor (100W)				
	Encoder	Incremental system				
	Lead screw	Rolled ball screw ∅15mm, 10mm lead				
	Guide	High rigidity direct acting guide				
	Motor/Screw connection	With coupling				
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)				
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less				

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

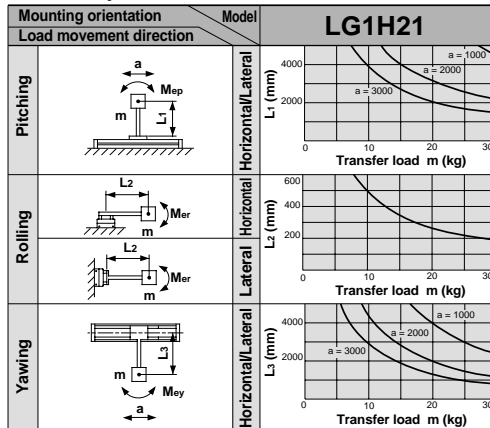
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

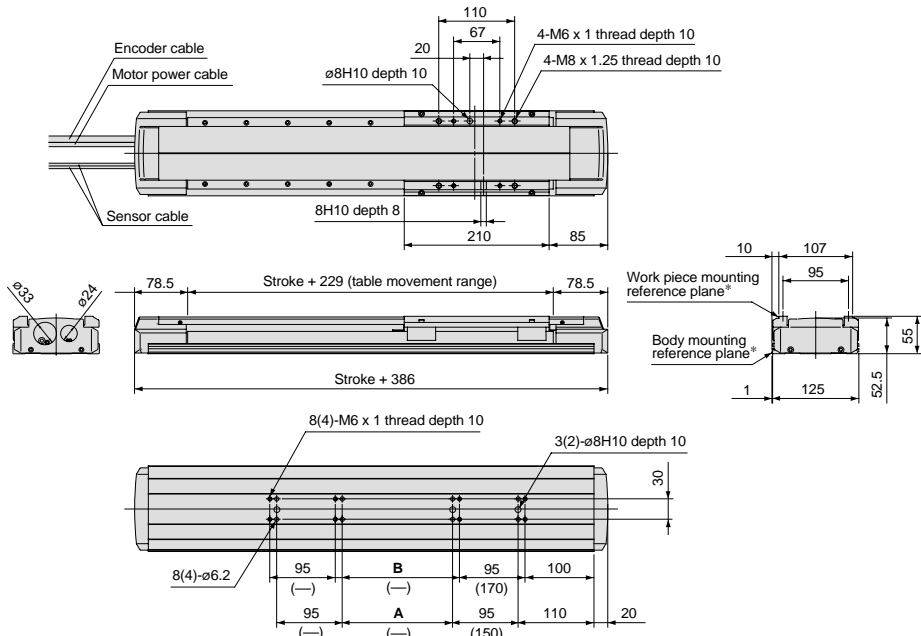
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□NA (X10)



Model	Stroke	A	B
LG1□H21□2□NA-100-F□-X10*	100	—	—
LG1□H21□2□NA-200-F□-X10	200	60	80
LG1□H21□2□NA-300-F□-X10	300	160	180
LG1□H21□2□NA-400-F□-X10	400	260	280

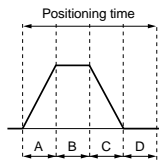
* Dimensions inside () are for a 100 mm stroke.

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
 B: Constant velocity time
 C: Deceleration time
 D: Resting time (0.4sec.)*
 Maximum acceleration: 3000mm/s²
 * The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.
 * Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
 * For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

LJ1
 LG1
 LC1
 LX
 LC6D/LC6C
 Switches

How to Order

LG1 **H21** **G** **2** **1** **NC** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

		Standard stroke	mm	500	600	700	800	900	1000
Performance	Body weight	Aluminum (without motor)	kg	8.4	9.2	10.0	10.8	11.6	12.4
		Stainless steel (without motor)	kg	13.4	14.7	15.9	17.2	18.4	19.7
	Operating temperature range	°C 5 to 40 (with no condensation)							
	Work load	kg 30							
	Maximum speed ^{Note)}	mm/s 1000 1000 930 740 600 500							
	Positioning repeatability	mm ±0.05							
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw $\varnothing 15\text{mm}$, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)							
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) The speed is limited by the transfer load. Contact each motor manufacturer regarding the maximum speeds for each transfer load.

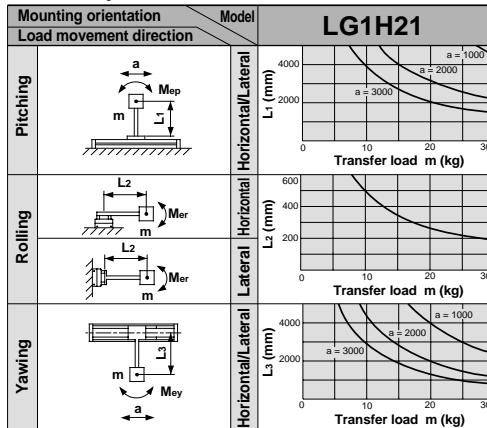
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

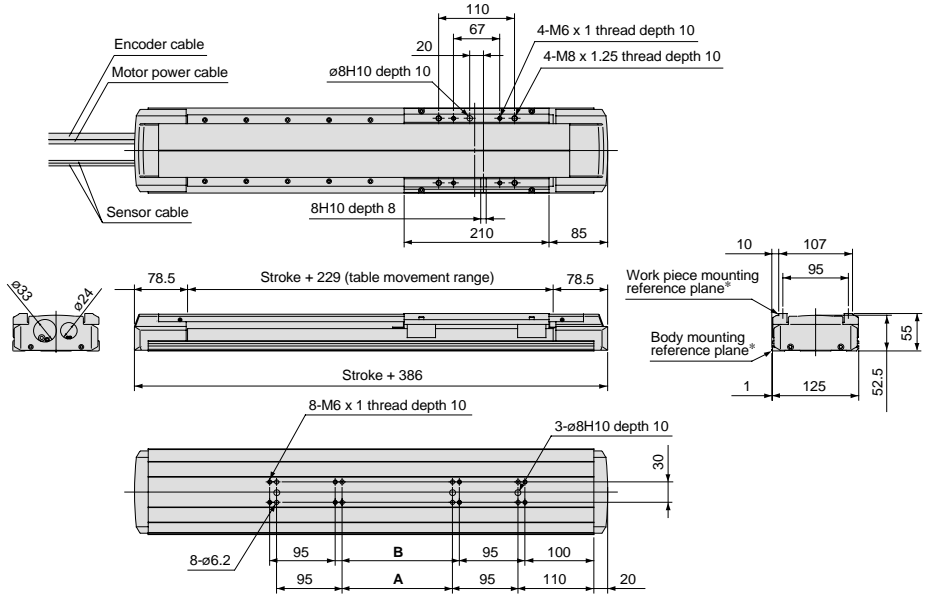
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□NC (X10)

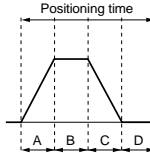


Model	Stroke	A	B
LG1□H21□2□NC-500-F□-X10	500	360	380
LG1□H21□2□NC-600-F□-X10	600	460	480
LG1□H21□2□NC-700-F□-X10	700	560	580
LG1□H21□2□NC-800-F□-X10	800	660	680
LG1□H21□2□NC-900-F□-X10	900	760	780
LG1□H21□2□NC-1000-F□-X10	1000	860	880

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	500	1000	
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

* Values will vary slightly depending on the operating conditions.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

How to Order

LG1 **H21** **G** **2** **1** **SC** — **Stroke** — **F** **W** — **X10**

Frame material

Nil	Aluminum alloy
T	Stainless steel

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight	Aluminum (without motor)	kg	5.8	6.7	7.5	8.4	9.3	10.2	11.1	11.9	12.8	13.7	15.9
		Stainless steel (without motor)	kg	9.3	10.7	12.0	13.5	14.8	16.2	17.5	19.0	20.3	21.7	25.2
	Operating temperature range	°C 5 to 40 (with no condensation)												
	Work load	kg 15												
	Maximum speed	mm/s 500												
Main parts	Positioning repeatability	mm ±0.1												
	Motor	AC servomotor (100W)												
	Encoder	Incremental system												
	Lead screw	Slide screw ∅20mm, 20mm lead												
	Guide	High rigidity direct acting guide												
Switch	Motor/Screw connection	With coupling												
	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)												
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less												

Intermediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

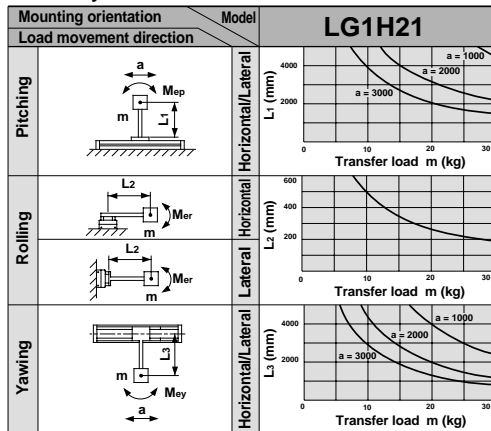
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

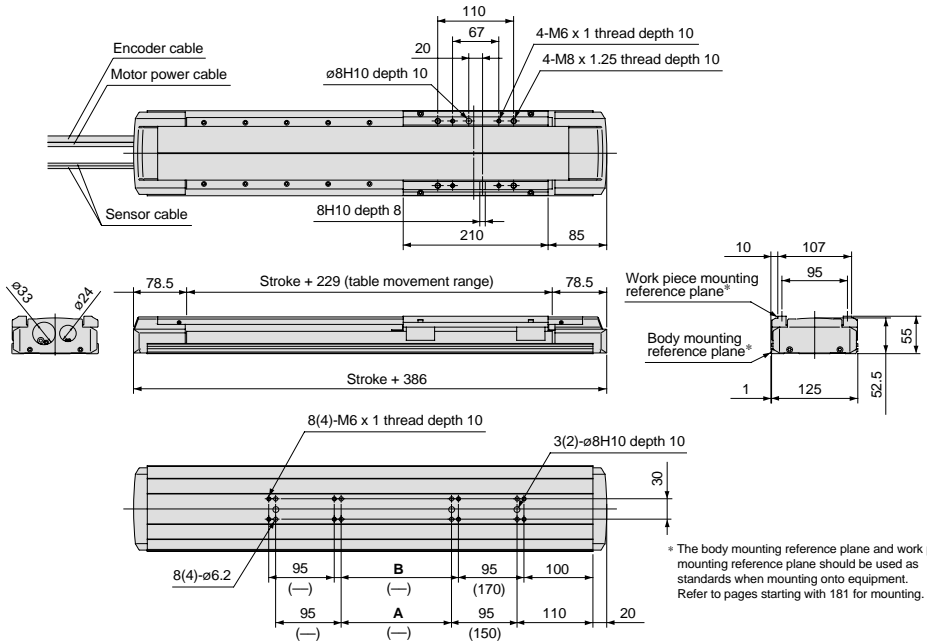
Allowable dynamic moment



Refer to page 183 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LG1□H21**

Dimensions/LG1□H21□2□SC (X10)



Model	Stroke	A	B
LG1□H21□2□SC- 100-F□-X10*	100	—	—
LG1□H21□2□SC- 200-F□-X10	200	60	80
LG1□H21□2□SC- 300-F□-X10	300	160	180
LG1□H21□2□SC- 400-F□-X10	400	260	280
LG1□H21□2□SC- 500-F□-X10	500	360	380
LG1□H21□2□SC- 600-F□-X10	600	460	480

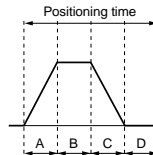
* Dimensions inside () are for a 100 mm stroke.

Model	Stroke	A	B
LG1□H21□2□SC-700-F□-X10	700	560	580
LG1□H21□2□SC-800-F□-X10	800	660	680
LG1□H21□2□SC-900-F□-X10	900	760	780
LG1□H21□2□SC-1000-F□-X10	1000	860	880
LG1□H21□2□SC-1200-F□-X10	1200	1060	1080

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	600	1200
Speed (mm/s)	10	0.5	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	250	0.5	0.6	1.0	3.0	5.4
	500	0.5	0.6	0.9	1.9	3.1

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.4sec.)*
- Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

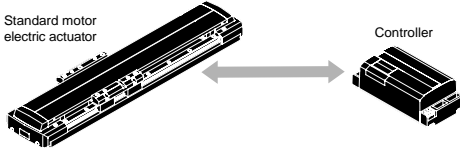
* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

Series LG1H Options

Actuator cable

This cable connects the actuator and the controller.
(Included with the actuator)



How to Order

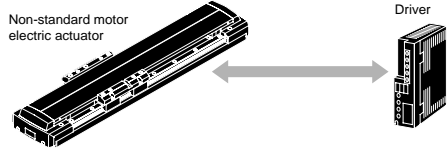
LG1-1-B **02**

● Cable length

02	2m
03	3m
04	4m
05	5m

Non-standard motor cables

These cables are used to connect non-standard motors and drivers.
Cable lengths other than those shown below should be arranged by the customer.



How to Order

LG1-1-**G** **05**

● Compatible model

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

● Cable length

05	5m
-----------	----

Applicable cables

Model	Manufacturer part no.
LG1-1-G05 *1	MFMCA0050AEB (for motor)
	MFECA0050EAB (for encoder)
LG1-1-R05	(for motor) *2
	MR-JCCBL5M (for encoder)
LG1-1-Y05 *3	DP9320081-2 (for motor)
	DP9320089-2 (for encoder)

* 1 When the Matsushita Electric Industrial Co., Ltd. motor driver is selected, in addition to the cable, a power connector (MOLEX 5569-10R) and an interface connector (Sumitomo/3-M Limited 10126-3000VE) are also required.

* 2 A cable is not provided for the Mitsubishi Electric Corporation motor, and therefore the customer should arrange a 4 core, 0.75mm² electric cable.

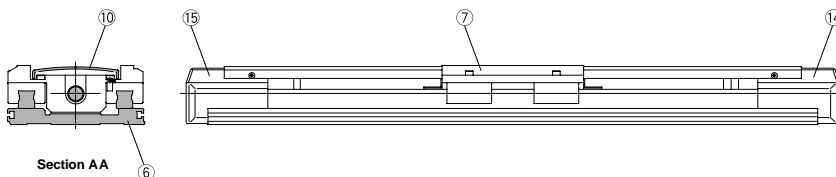
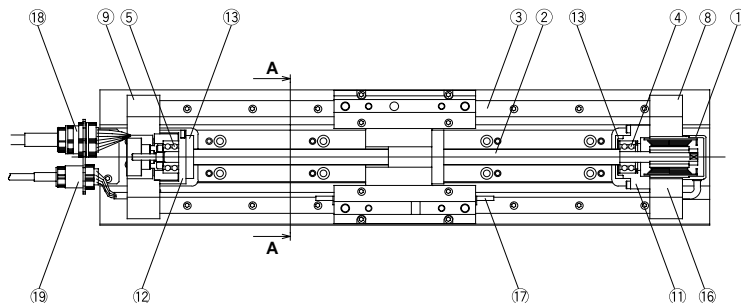
* 3 When the Yaskawa Electric Corporation motor driver is selected, a digital operator and PC are required for selecting the various parameters.

Please refer to the technical literature of each manufacturer for further details.

Series LG1H Construction

Construction/ Without coupling

LG1H20



Parts list

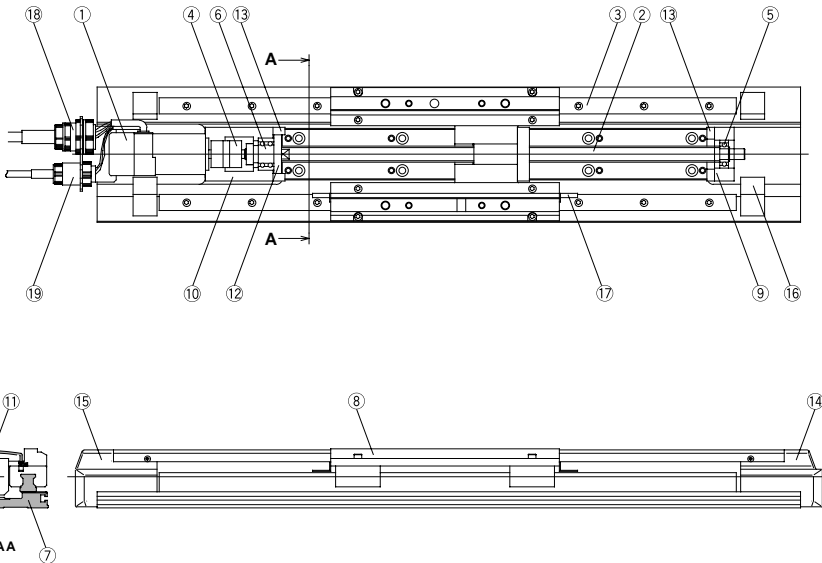
No.	Description	Material	Note
1	AC servomotor	—	100W
2	Lead screw	—	Ball screw/Slide screw
3	High rigidity direct acting guide	—	
4	Bearing R	—	
5	Bearing F	—	
6	Body	Aluminum alloy/Stainless steel	
7	Table	Aluminum alloy	
8	Housing A	Aluminum alloy	
9	Housing B	Aluminum alloy	
10	Top cover	Aluminum alloy	

No.	Description	Material	Note
11	Head cover	Aluminum alloy	
12	Encoder cover	Aluminum alloy	
13	Bumper	IIR	
14	End cover A	PC	
15	End cover B	PC	
16	Photo micro sensor	—	
17	Sensor plate	—	
18	Connector A	—	
19	Connector B	—	

Series LG1H Construction

Construction/ Without coupling

LG1H21



Parts list

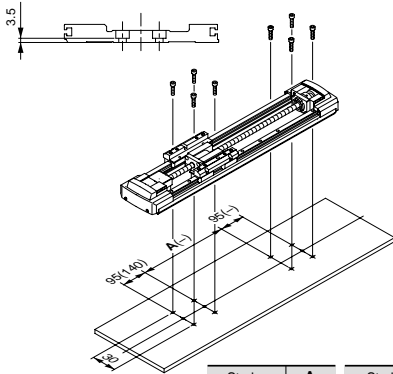
No.	Description	Material	Note
1	AC servomotor	—	100W
2	Lead screw	—	Ball screw/Slide screw
3	High rigidity direct acting guide	—	
4	Coupling	—	
5	Bearing R	—	
6	Bearing F	—	
7	Body	Aluminum alloy/Stainless steel	
8	Table	Aluminum alloy	
9	Housing A	Aluminum alloy	
10	Housing B	Aluminum alloy	

No.	Description	Material	Note
11	Top cover	Aluminum alloy	
12	Bearing retainer	Aluminum alloy	
13	Bumper	IIR	
14	End cover A	PC	
15	End cover B	PC	
16	Photo micro sensor	—	
17	Sensor plate	—	
18	Connector A	—	
19	Connector B	—	

Series LG1H Mounting

Top Mount

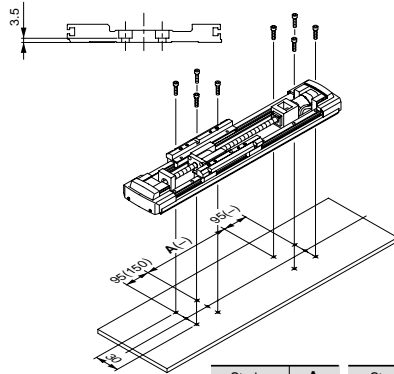
LG1H20/ Without coupling



Stroke	A	Stroke	A
100	—	700	550
200	50	800	650
300	150	900	750
400	250	1000	850
500	350	1200	1050
600	450		

Dimensions inside () are for a 100 mm stroke.

LG1H21/ With coupling

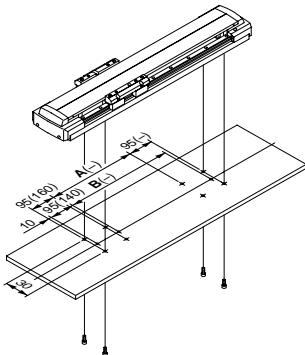


Stroke	A	Stroke	A
100	—	700	560
200	60	800	660
300	160	900	760
400	260	1000	860
500	360	1200	1060
600	460		

Dimensions inside () are for a 100 mm stroke.

Bottom Mount

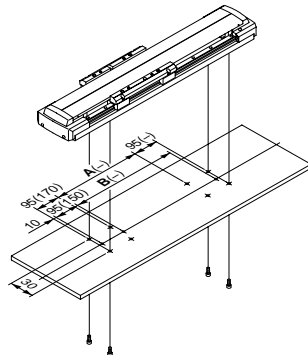
LG1H20/ Without coupling



Stroke	A	B	Stroke	A	B
100	—	—	700	570	645
200	70	145	800	670	745
300	170	245	900	770	845
400	270	345	1000	870	945
500	370	445	1200	1070	1145
600	470	545			

Dimensions inside () are for a 100 mm stroke.

LG1H21/ With coupling



Stroke	A	B	Stroke	A	B
100	—	—	700	580	655
200	80	155	800	680	755
300	180	255	900	780	855
400	280	355	1000	880	955
500	380	455	1200	1080	1155
600	480	555			

Dimensions inside () are for a 100 mm stroke.

LG1

LG1

LG1

LG1

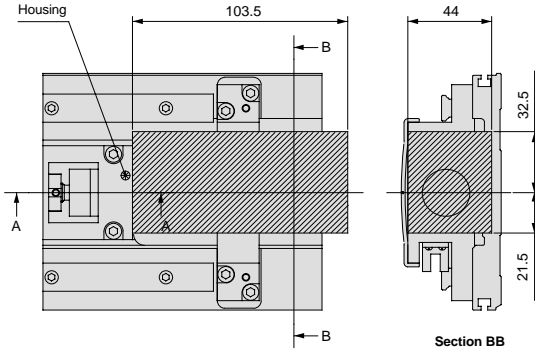
LG1

LG1

Series LG1H Non-standard Motor Mounting Dimensions


Non-standard Motor Mounting Dimensions/ With Coupling

LG1H21

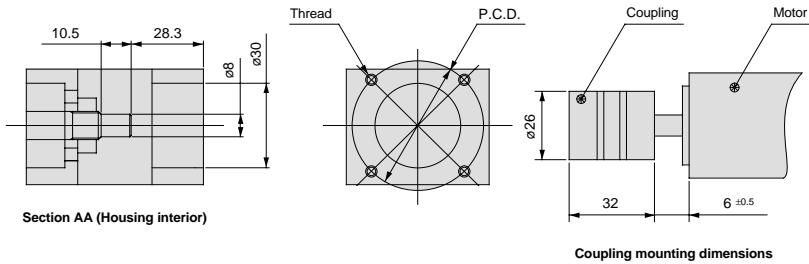


Motor mounting area dimensions

Manufacturer	Mitsubishi Electric Corporation Yaskawa Electric Corporation	Matsushita Electric Industrial Co., Ltd.
Thread size	M4 x 0.7	M3 x 0.5
Effective thread length (mm)	8	6
Quantity	2	4
P.C.D.	46	45

 Motor mounting area

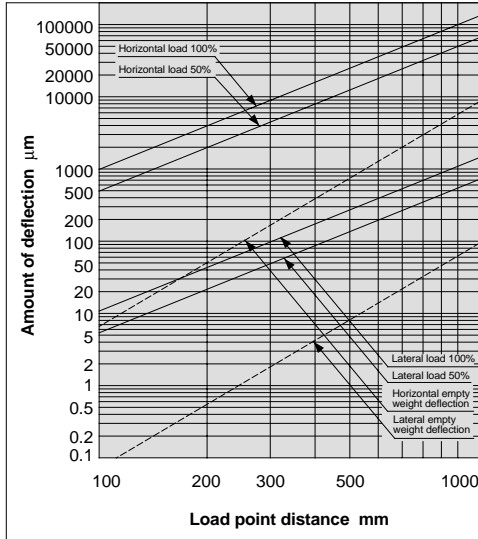
* When mounting a coupling on the motor, mount it within the dimensional range shown on the left.



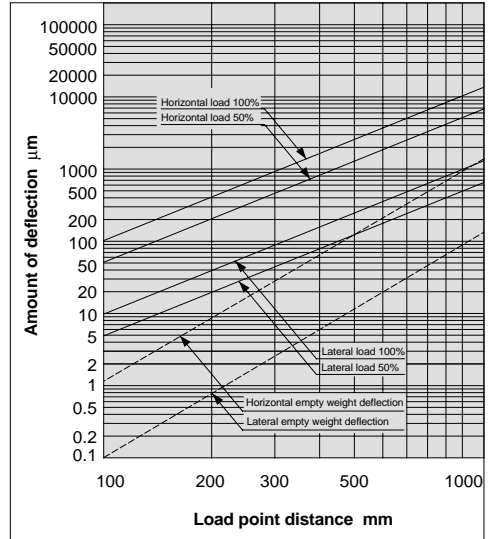
Deflection Data

The load and the amount of deflection at load point W are shown in the graphs below.

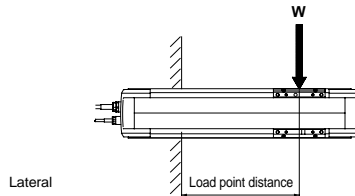
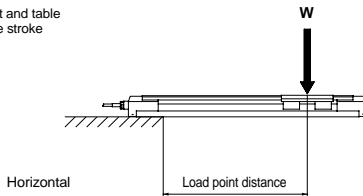
LG1H/ Aluminum body



LG1TH/ Stainless steel body



With single end support and table moved to the end of the stroke



LG1

LG1

LG1

LX

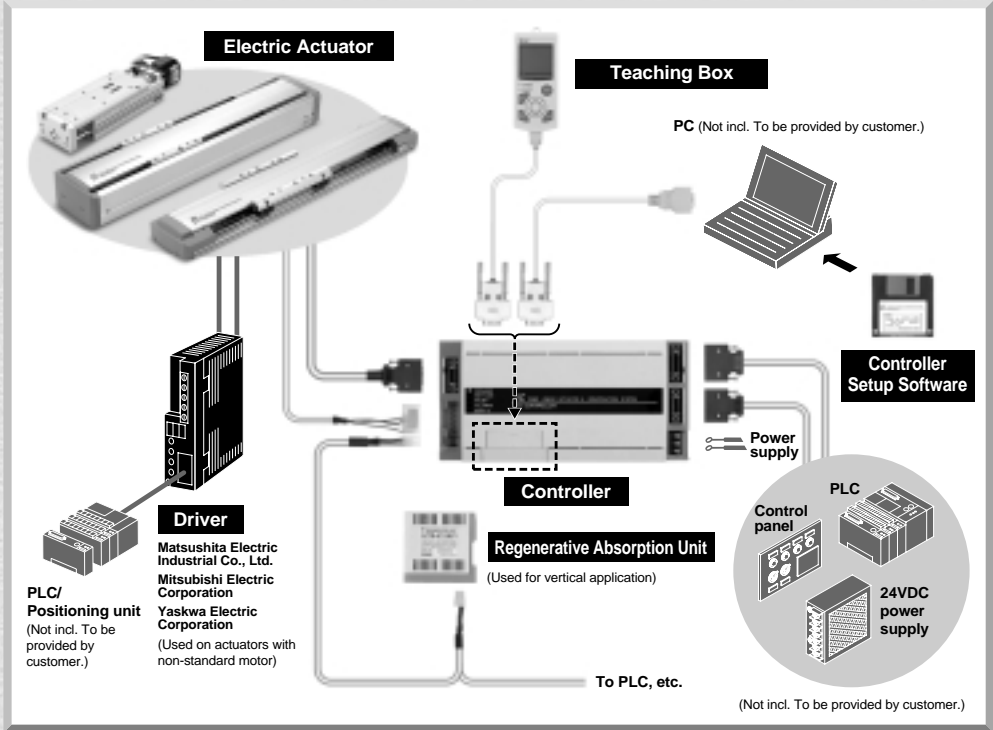
LC6D/LC6C

Switches



Dedicated Controller Series LC1

Dedicated Controller for Standard AC Servomotor



■ Dedicated Controller/LC1	_____	Page 186
• Controller setup software	_____	194
• Dedicated teaching box	_____	196
■ Options	_____	199
■ Dedicated Regenerative Absorption Unit/LC7R	_____	200
■ Non-standard Motor Compatible Drivers	_____	205

LC1

LC1

LC1

LX

LC6D/LC6C

Switches

Series LJ1/LG1: Standard Motor Compatible

How to Order

LC1-1 B 1H 1-N 3

Number of axes

1	1 axis
---	--------

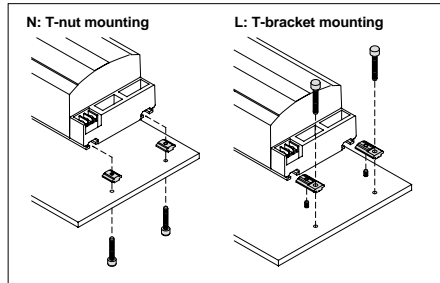
Mounting bracket

3	M3
5	M5

Actuator classification

B	Series LJ1 (Incremental encoder)
D	Series LG with coupling (Series LG1□H21) Incremental encoder
F	Series LG without coupling (Series LG1□H20) Incremental encoder

Mounting*



Applicable actuators

Symbol	Motor capacity	Compatible actuator models	
1H	50W	LJ1H101□□B	Ball screw High rigidity direct acting guide Without brake
2H	100W	LJ1H202□□A LJ1H202□□C	
3H	200W	LJ1H303□□D	
1S	50W	LJ1S101□□SC	Slide screw Slider guide
2S	100W	LJ1S202□□SC	
3S	200W	LJ1S303□□SC	
1M	50W	LJ1H101□□SC	Slide screw High rigidity direct acting guide
2M	100W	LJ1H202□□SC	
3M	200W	LJ1H303□□SE	
1VH^(*)	100W	LJ1H102□□H-□□□□K	Ball screw High rigidity direct acting guide With brake
1VB^(*)	100W	LJ1H102□□B-□□□□K	
2VF^(*)	100W	LJ1H202□□F-□□□□K	
2VA^(*)	100W	LJ1H202□□A-□□□□K	
3VA^(*)	200W	LJ1H303□□A-□□□□K	
2HA	100W	LG1H□□2□□PA LG1H□□2□□NA	Ball screw High rigidity direct acting guide Thread lead 10mm
2HC	100W	LG1H□□2□□PC LG1H□□2□□NC	Ball screw High rigidity direct acting guide Thread lead 20mm
2MC	100W	LG1H□□2□□SC	Slide screw High rigidity direct acting guide Thread lead 20mm

* This controller includes the accessories listed below.

LC1-1-□□ (Either T-nuts or T-brackets for mounting)
LC1-1-1000 (Controller connector)
LC1-1-2000 (Controller connector)
(Refer to page 199.)

Note) The following options are necessary for operating and setting the controller.

[LC1-1-S1 PC-98 (MS-DOS)
LC1-1-W1 (Windows 95 Japanese)
LC1-1-W2 (Windows 95 English)
and
LC1-1-R□□ (dedicated communication cable)]
(Refer to pages 194, 195, and 199.)

or

LC1-1-T1-□□ (Teaching box) are required.
For ordering information, refer to the option part numbers on page 196.

Power supply

1^(*)	100/110VAC (50/60Hz)
2^(*)	200/220VAC (50/60Hz)

*1) Consult SMC if the supply voltage for LC1-1B□□□1 will be 110VAC or more, or the supply voltage for LC1-1B□□□2 will be 220VAC or more.

Performance/Specifications

General specifications

Item	Model	LC1-1B□□1	LC1-1B□□2
Power supply		100/110VAC ±10%, 50/60Hz (100VAC, 50/60Hz for LC1-1B□V□1)	200/220VAC ±10%, 50/60Hz (200VAC ±10% for LC1-1B3H2) (200VAC, 50/60Hz for LC1-1B□V□2)
Leakage current		5mA or less	
Dimensions		80 x 120 x 244mm	
Weight		2.2kg	

Actuator control

Item	Model	LC1-1B1H□	LC1-1B2H□	LC1-1B3H□	LC1-1B1M□	LC1-1B2M□	LC1-1B3M□	LC1-1B1V□	LC1-1B2V□	LC1-1B3V□	LC1-1B1S□	LC1-1B2S□	LC1-1B3S□	LC1-1D2H□	LC1-1D2M□	LC1-1F2H□	LC1-1F2M□	
Compatible actuator model		LJ1H101 □PB □NB	LJ1H202 □PA □NA	LJ1H303 □PD □ND	LJ1H101 □SC	LJ1H202 □SC	LJ1H303 □SE	LJ1H102 □□□ □□□K	LJ1H202 □□□ □□□K	LJ1H303 □□□ □□□K	LJ1S101 □SC	LJ1S202 □SC	LJ1S303 □SC	LG1H212 □P□ □N□	LG1H212 □SC	LG1H202 □P□ LG1H202 □N□	LG1H202 □SC	
Compatible guide		High rigidity direct acting guide									Slider guide			High rigidity direct acting guide				
Motor capacity		50W	100W	200W	50W	100W	200W	100W	200W	50W	100W	200W					100W	
Operating temperature range		5 to 50°C		5 to 40°C		5 to 50°C		5 to 40°C		5 to 50°C		5 to 40°C					5 to 50°C	
Electric power		180VA	300VA	640VA	180VA	300VA	640VA	300VA	640VA	180VA	300VA	640VA					300VA	
Control system		AC software servo/PTP control																
Position detection system		Incremental encoder																
Home position return direction		Can be selected between the motor side and the side opposite the motor.																
Maximum positioning point setting		1008 points (when step designation is actuated)																
Movement command		Absolute and incremental used in combination																
Position designation range		0.00mm to 4000.00mm ^{Note)}																
Speed designation range		1mm/s to 2500mm/s ^{Note)}																
Acceleration/deceleration designation range		Trapezoidal acceleration/deceleration 1mm/s ² to 9800mm/s ² ^{Note)}																

Note) There are cases in which the position, speed and acceleration designations are not realized, depending on the actuator that is connected and the operating conditions.

Programming

Item	Performance/Specifications
Means of programming	Dedicated controller setup software (LC1-1-S1, LC1-1-W1, LC1-1-W2) and dedicated teaching box (LC1-1-T1-□□)
Functions	Programming (JOG teaching, direct teaching*), Operation, Monitor, Test, Alarm reset
Number of programs	8 programs
Number of steps	1016 steps (127 steps x 8 programs)

* Direct teaching is only available with LC1-1-W1 and LC1-1-W2.

Operating configuration

Item	Performance/Specifications
Operating methods	Operation by PLC, operating panel, etc., via control terminal; Operation by PC (controller setup software); Operation by teaching box
Summary of operations	Program batch execution (program designated operation), Step designated execution (position movement, point designated operation)
Test run functions	Program test, Step no. designated operation, JOG operation, Input/output operation
Monitor functions	Executed program indication, Input/output monitor

Peripheral device control

Item	Performance/Specifications
General purpose input	6 inputs, Photo-coupler insulation, 24VDC, 5mA
General purpose output	6 outputs, Open collector output, 35VDC max., 80mA/output (maximum load current)
Control commands	Output ON/OFF, Input condition wait, Condition jump, Time limit input wait

Safety items

Item	Performance/Specifications
Protection functions	Over current, Over load, Over speed, Encoder error, Abnormal driver temperature, Abnormal drive power supply, Communication error, Battery error, Abnormal parameter, Limit out

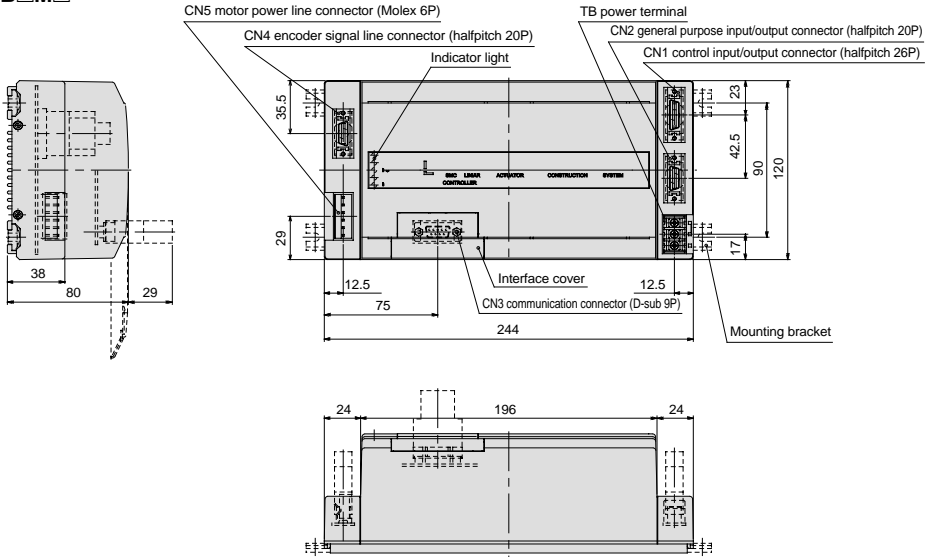
Series LC1

Dimensions

LC1-1B□H□ □ LC1-1D2H□□ □ LC1-1F2H□□ □

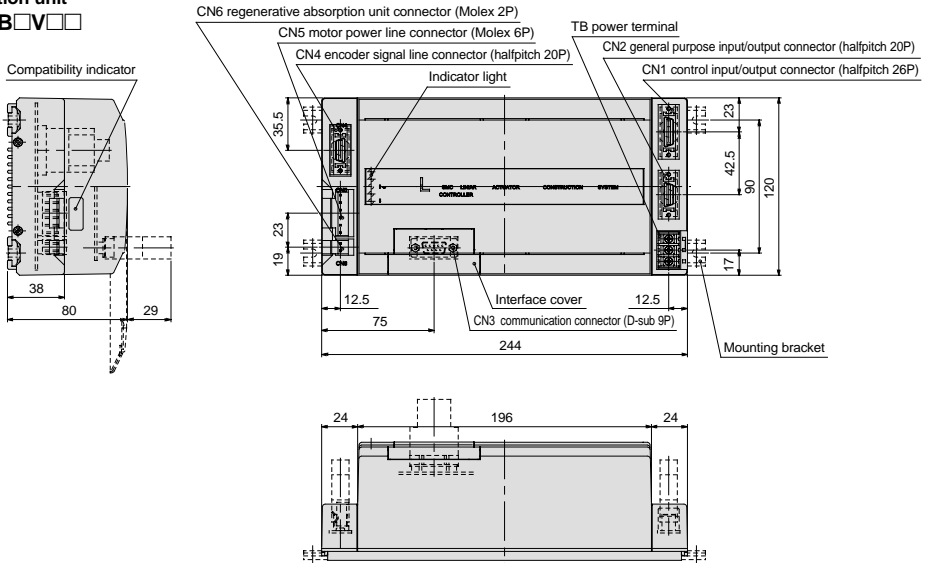
LC1-1B□S□ □ LC1-1D2MC□ □ LC1-1F2MC□ □

LC1-1B□M□ □



With regenerative absorption unit

LC1-1B□V□□ □



Series LX: AC Servomotor compatible

How to Order

LC1-1 B1V D 1 N 3 200 X180

Number of axes

1	1 axis
---	--------

Ball screw lead

C	2mm
D	5mm

Power supply

1	100/110VAC (50/60Hz)
2	200/220VAC (50/60Hz)

Actuator classification

X180	LXSAB□-□□□□S□-□□□□-X12
	LXSAB□-□□□□S□-□□□□-X13
X233	LXPAB□-□□□□S□-□□□□-X12
	LXPAB□-□□□□S□-□□□□-X13

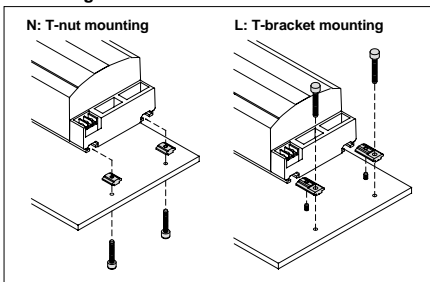
Stroke

50	50mm
75	75mm
100	100mm
125	125mm
150	150mm
175	175mm
200	200mm

Mounting bracket

3	M3
5	M5

Mounting*



* This controller includes the accessories listed below.

LC1-1-□□ /Either T-nuts or T-brackets for mounting
 LC1-1-1000/Controller connector
 LC1-1-2000/Controller connector
 (Refer to page 199.)

Note) The following options are necessary for operating and setting the controller.

(LC1-1-S1 PC-98 (MS-DOS)
 LC1-1-W1 (Windows 95 Japanese)
 LC1-1-W2 (Windows 95 English))
 and
 LC1-1-R□□ (dedicated communication cable)
 (Refer to pages 194, 195, and 199.)

or

LC1-1-T1-□□ (Teaching box) are required.

For ordering information, refer to the option part numbers on page 196.

LC1

LC1

LC1

LX

LC6D/LC6C
Switches

Series LC1

Performance/Specifications

General specifications

Item \ Model	LC1-1B1V□□□□□□-X180 LC1-1B1V□□□□□□-X233	LC1-1B1V□□□□□□-X180 LC1-1B1V□□□□□□-X233
Power supply	100V/110VAC ±10%, 50/60Hz	200V/220VAC ±10%, 50/60Hz
Leakage current	5mA or less	
Dimensions	80 x 120 x 244mm	
Weight	2.2kg	

Actuator control

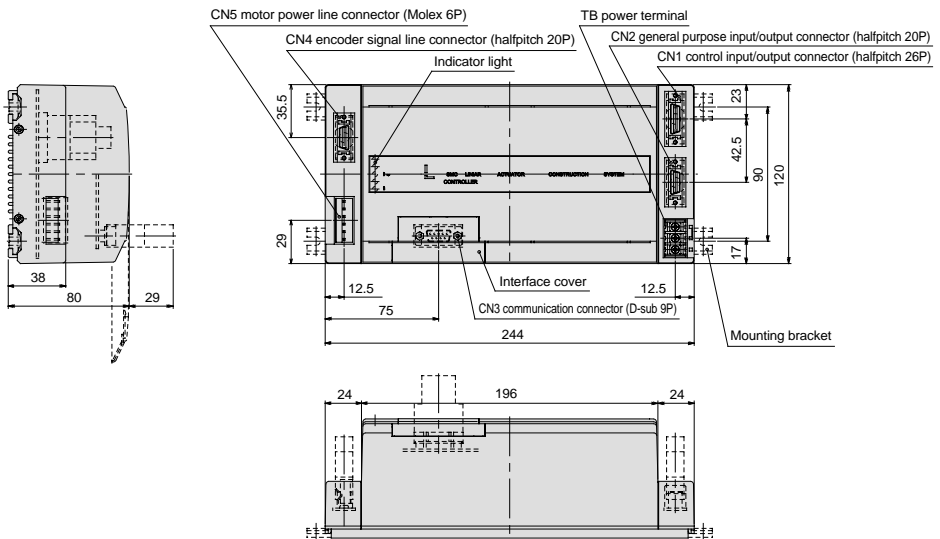
Item \ Model	LC1-1B1V□□□□□□-X180	LC1-1B1V□□□□□□-X233	LC1-1B1V□□□□□□-X180	LC1-1B1V□□□□□□-X233
Compatible actuator	LXSAB□□□□□□-X12	LXPAB□□□□□□-X12	LXSAB□□□□□□-X13	LXPAB□□□□□□-X13
Compatible guide	High rigidity direct acting guide	Guide rod	High rigidity direct acting guide	Guide rod
Motor capacity	30W			
Operating temperature range	5 to 5°C			
Electric power	180VA			
Control system	AC software servo/PTP control			
Position detection system	Incremental encoder			
Home position return direction	Can be selected between the motor side and the side opposite the motor.			
Maximum positioning point setting	1008 points (when step designation is actuated)			
Movement command	Absolute and incremental used in combination			
Position designation range	0.00mm to 4000.00mm ^{Note)}			
Speed designation range	1mm/s to 2500mm/s ^{Note)}			
Acceleration/deceleration designation range	Trapezoidal acceleration/deceleration 1mm/s ² to 9800mm/s ² ^{Note)}			

Note) There are cases in which the position, speed and acceleration designations are not realized, depending on the actuator that is connected and the operating conditions.

Dimensions

LC1-1B1V□□□□□□-X180

LC1-1B1V□□□□□□-X233



Controller Mounting

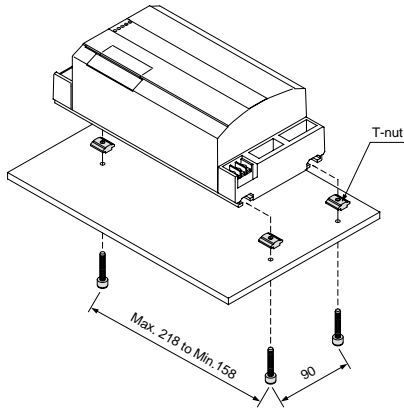
Mounting of the controller is performed by means of the two T-grooves provided on the bottom surface.

Mounting is possible from above or below using the special T-nuts or T-brackets. Refer to page 199 for further details.

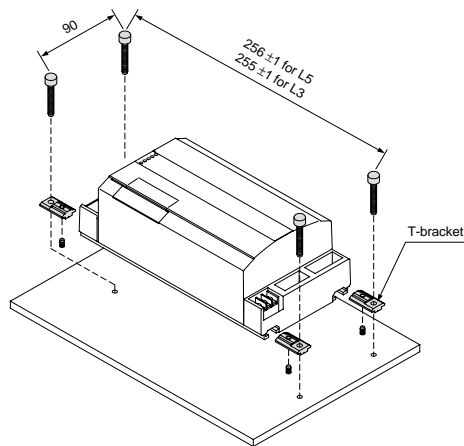
Note) This controller comes with either the T-nuts or T-brackets as accessories.

Controller model	Mounting screw	Mounting bracket assembly
LC1-1□□□-N3	M3 x 0.5	LC1-1-N3
LC1-1□□□-N5	M5 x 0.8	LC1-1-N5
LC1-1□□□-L3	M3	LC1-1-L3
LC1-1□□□-L5	M5	LC1-1-L5

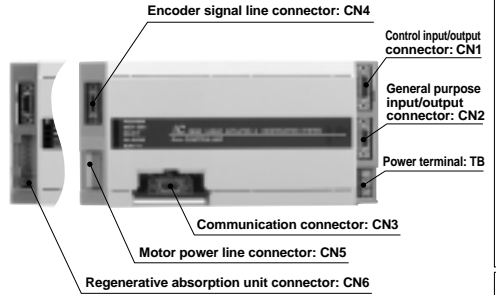
Mounting with T-nuts



Mounting with T-brackets



Part Descriptions



Controller Command Setting List

Actuator control commands

Classification	Function	Instruction	Parameter value
Movement	Absolute movement command	MOVA	Address (speed)
	Incremental movement command	MOVI	± Movement (speed)
Setting	Acceleration setting command	ASET	Acceleration

I/O control commands

Classification	Function	Instruction	Parameter value
Output control	Output ON command	O-SET	General purpose output no.
	Output OFF command	O-RES	General purpose output no.
	Output reversal command	O-NOT	General purpose output no.
Input wait	AND input wait command	I-AND	General purpose input no., State
	OR input wait command	I-OR	General purpose input no., State
Input wait with time out function	AND input time out jump command	T-AND	General purpose input no., State (P-no.) label
	OR input time out jump command	T-OR	General purpose input no., State (P-no.) label
	AND input time out subroutine call command	C-AND	General purpose input no., State (P-no.) label
	OR input time out subroutine call command	C-OR	General purpose input no., State (P-no.) label
Condition jump	AND input condition jump command	J-AND	General purpose input no., State (P-no.) label
	OR input condition jump command	J-OR	General purpose input no., State (P-no.) label

Program control commands

Classification	Function	Instruction	Parameter value
Jump	Unconditional jump command	JMP	(P-no.) label
Subroutine	Subroutine call command	CALL	(P-no.) label
	Subroutine end declaration	RET	
Loop	Loop start command	FOR	Loop frequency
	Loop end command	NEXT	
End	Program end declaration	END	
Timer	Timer command	TIM	Timer amount

LJ1

LG1

LG1

LX

LC6D/LC6C

Switches

Connection Examples

Control Input/Output Terminal: CN1

Terminal to perform actuator operation (connects PLC and operating panel)

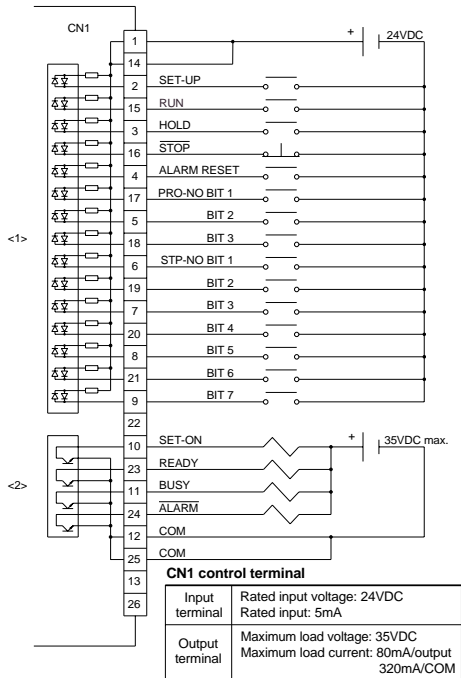
CN1. Control input terminal list

Terminal	Pin no.	Description	Function		
+24V	1, 14	Common	The positive common of the input terminal.		
SET-UP	2	Starting preparation	The terminal that performs setup operations (actuator starting preparation).		
RUN	15	Starting	The terminal that performs program start.		
Pro-no. bit1	17	Program designation	The terminal that designates the program to be executed. Can designate 8 types of programs with a total of 3 bits. (Set by the binary system.)		
Pro-no. bit2	5				
Pro-no. bit3	18				
Stp-no. bit3	6			Step designation	The terminal that designates the step to be executed. Used when executing steps (position movement). (Set by the binary system.)
Stp-no. bit2	19				
Stp-no. bit3	7				
Stp-no. bit4	20				
Stp-no. bit5	8				
Stp-no. bit6	21				
Stp-no. bit7	9				
HOLD	3	Temporary stop	Temporarily stops the program run by means of the ON input.		
STOP	16	Emergency stop (nonlogical input)	Performs an emergency stop when ON input stops.		
ALARM RESET	4	Alarm release	Releases the alarm being generated by means of the ON input.		

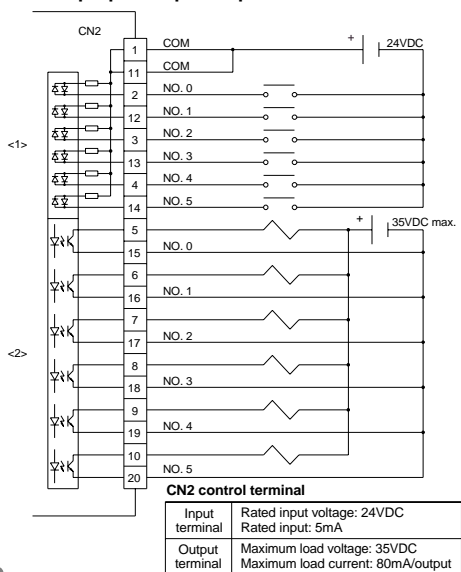
CN1. Control output terminal list

Terminal	Pin no.	Description	Function
READY	23	System ready signal	Indicates ability to perform control terminal input and communication via the dedicated communication cable when ON.
SET-ON	10	Start readiness signal	Indicates that the SET-UP operation (start ready operation: return to home position after servo ON) is complete when ON. The state in which the program can be run.
BUSY	11	Operating signal	Indicates operation in progress when ON. ON when program is being executed and when returning to the home position.
ALARM	24	Alarm output	When this signal is OFF, an alarm is being generated for the actuator/controller.
COM	12, 25	Common	The output terminal common.

Control input/output terminal: CN1

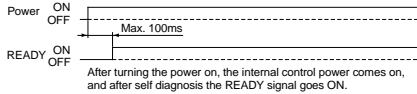


General purpose input/output terminal: CN2

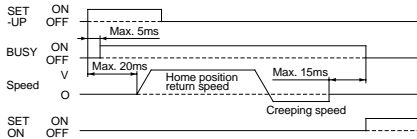


Control Method/Timing

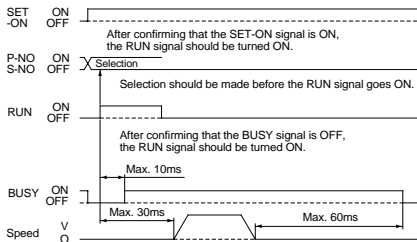
Timing for READY signal generation immediately after turning on power



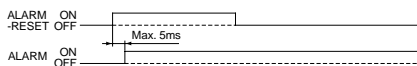
Timing for home position return



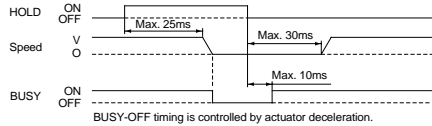
Timing for program/step execution



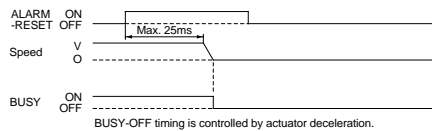
Timing for alarm reset



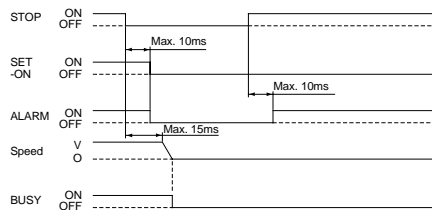
Timing for temporary stop during operation



Timing for stop by ALARM-RESET during operation



Timing for emergency stop during operation



Response time with respect to controller input signals

The following factors exist for delay of response with respect to controller input signals.

- 1) Scanning delay of the controller input signal
- 2) Delay by the input signal analysis computation
- 3) Delay of command analysis processing

Factors (1) and (2) above apply to delay with respect to the SET-ON, ALARM-RESET and STOP signals.

Factors (1), (2) and (3) above apply to delay with respect to cancellation of the RUN and HOLD signals.

When signals are applied to the controller by means of a PLC, the PLC processing delay and the controller input signal scan delay should be considered, and the signal state should be maintained for 50ms or longer.

It is recommended that the input signal state be initialized with the response signal to the input signal as a condition.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Windows/LC1-1-W2 (English)

Windows edition controller setup software includes all of the functions of PC-98 (MS-DOS) edition software, and the following functions have also been added.

- Direct teaching
- Program printing
- Batch editing and sending/receiving of all programs
- Batch management and multiple saving of parameters and programs

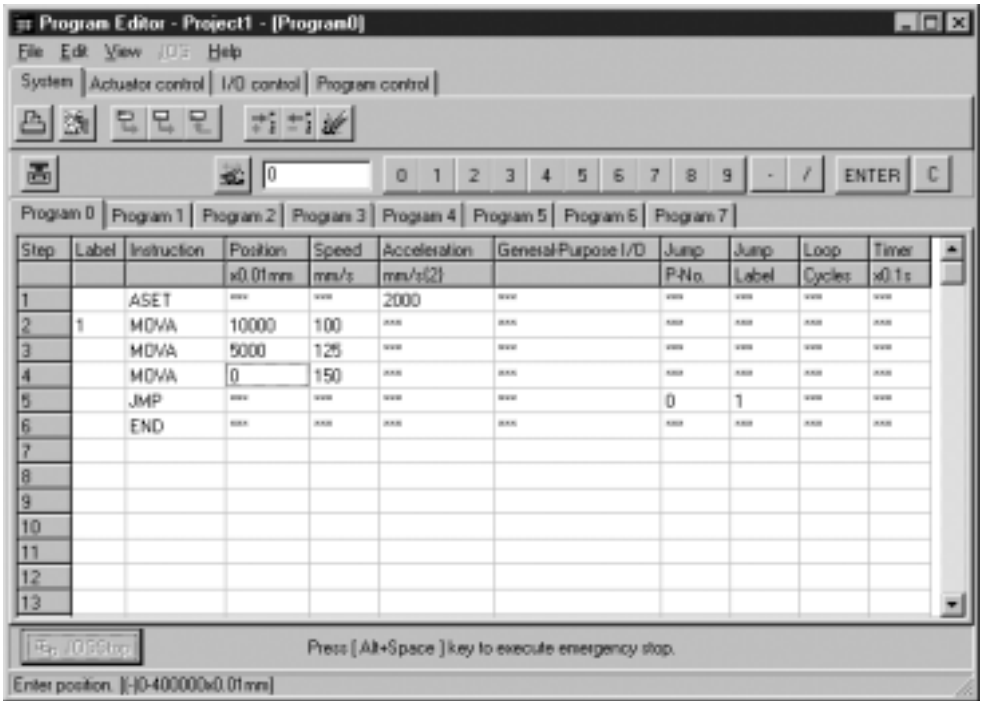
Operating environment

Computer	A model with a Pentium 75MHz or faster CPU, and able to fully operate Windows 95.
OS	Windows 95
Memory	16MB or more
Hard disk	5MB or more of disk space required

- The dedicated communications cable (LC1-1-R□□□) is required when using this software.
- This software cannot be used with Windows 3.1.



Windows/LC1-1-W2 (English)



Screen example

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How to Order

LC1—1—T1—0 **2**

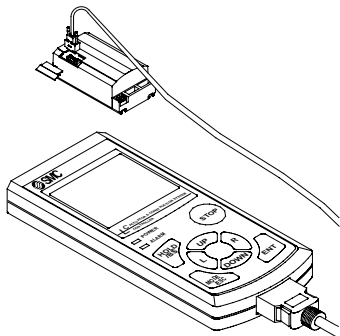
• Cable length

2	2m
3	3m
4	4m
5	5m

- Interactive input display
- Programming with the same language as PC software

Able to execute operations such as programming and parameter changes, which up until now have been performed from a PC.

* The special cable is packed with the teaching box. (2 to 5m)



Performance/Specifications

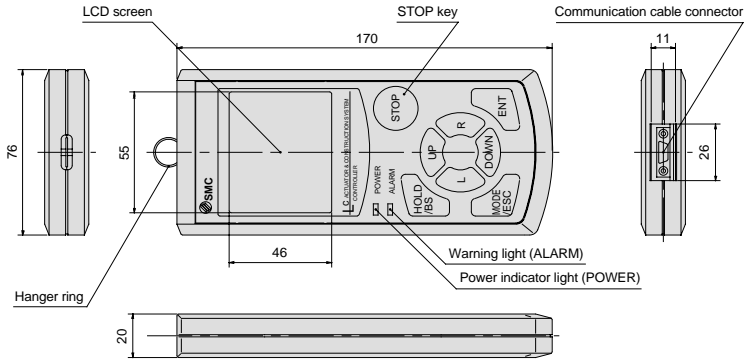
General specifications

LC1-1-T1-0□	
Power supply	Supplied from LC1
Dimensions (mm)	170 x 76 x 20
Weight (g)	158
Case type	Resin case
Display unit	46 x 55mm LCD
Operating unit	Key switches, LED indicators
Cable length	2m, 3m, 4m, 5m

Basic performance

Performance/Specifications	
Compatible controller	LC1 (all models)
Operating temperature range	5 to 50°C
Functions	Programming, Parameter change, Setup, Operation, JOG operation, Monitor, Alarm reset, JOG teaching
Monitor functions	Movement position, Movement speed
Protection functions	Over current, Over load, Over speed, Encoder error, Abnormal driver temperature, Abnormal drive power supply, Communication error, Battery error, Limit out, Abnormal driver parameter, RAM malfunction
Protection function indicator	Alarm code

Dimensions



Alarm Code List

Alarm code	Alarm	Reset	Description
10	Emergency stop	○	An emergency stop condition exists or has occurred in the past due to the controller setup software or the CN1 control STOP terminal.
11	Limit switch ON	○	Limit switch is turned ON.
12	Battery error	●	The memory backup battery voltage is low. Contact SMC.
13	Communication error	○	Communication with the controller is interrupted.
14	RAM malfunction	●	The parameter is damaged.
15	Soft stroke limit	○	The program is about to exceed the stroke length set by the parameter.
20	Over current	●	Three times the rated current or more is flowing into the driver unit.
21	Over load	●	The driver unit continuously received a current exceeding the rated current for a prescribed time or longer.
22	Over speed	●	The controller exceeded the maximum operational speed.
24	Abnormal driver temperature	●	A temperature increase of the driver unit activated the temperature sensor.
25	Encoder error	●	An encoder or actuator cable malfunction has occurred.
26	Abnormal drive current	●	The driver unit power supply is shut off due to a regeneration problem, etc.
28	Abnormal driver parameter	●	A driver parameter abnormality in the controller system has occurred.
30	Unsuccessful home position return	○	Trying to execute a program/step without completing the setup (home position return).
31	No designated speed	○	No speed designation with MOVA or MOV1, and no prior speed designation found.
32	No jump destination	○	No label found at the program designated jump destination.
33	Nesting exceeded	○	Sub-routine nesting (calling a sub-routine from another sub-routine) exceeds 14 levels.
34	No return destination	○	No return destination found for the RET command operation.
35	Executing FOR	○	A forbidden command is found between FOR and NEXT.
36	No FOR	○	NEXT command was executed without executing FOR command.
37	No operation program	○	Trying to execute a program/step with no commands.
38	Invalid movement command	○	Trying to execute a command other than MOVA, MOV1, or ASET with a step (position movement) designated operation.
39	Format error	○	An error is found in the attached value of a command being programmed.

* Refer to the Series LC1 instruction manual for alarm details.

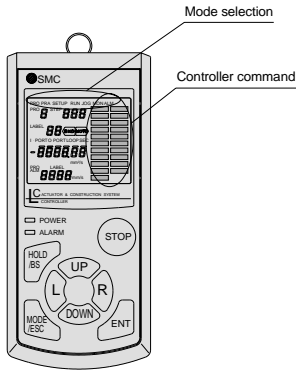
* Explanation of "Reset" symbols above:

○: Can be reset by the alarm reset.

●: Turning OFF the controller power is required for resetting.

Series LC1

Key Arrangement and Functions



Main modes	Mode	Display	Function
	Programming mode	PRO	Sets a program.
	Parameter input/output mode	PRA	Sets a parameter.
	Home position return mode	SETUP	Directs home position return.
	Operation mode	RUN	Directs a program operation.
	JOG operation mode	JOG	Executes a JOG operation.
	Monitor mode	MON	Monitors operating condition.
	Alarm reset mode	ALM	Directs alarm code display and clear.

For the operation of each mode, refer to the product's instruction manual.

Key	Functions
UP	Moves upward for item selections. Also used to increase values for data entry. In combination with L/R keys, this key drives the actuator at high speed during a JOG operation.
DOWN	Moves downward for item selections. Also used to decrease values for data entry.
L	Moves to the left for item selections. Also used to move a numerical valve place to the left for data entry. It drives the actuator to the end side during a JOG operation.
R	Moves to the right for item selections. Also used to move a numerical valve place to the right for data entry. It drives the actuator to the motor side during a JOG operation.
HOLD/BS	Returns to the previous mode during item selections. It becomes the temporary stop key during actuator operation.
MODE/ESC	Returns to the main mode during item selections. It exits all modes.
STOP	Becomes the emergency stop key during actuator operation. In combination with the ENT key, it launches JOG teaching and aids program editing.
ENT	Determines data during item selections. In combination with the STOP key, it launches JOG teaching and aids program editing.

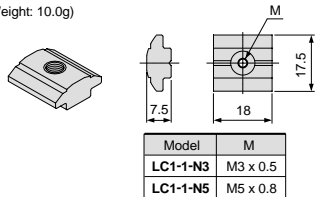
T-nuts and T-brackets for Mounting

Be sure to use when mounting the controller.

Note) The controller unit includes either T-nuts or T-brackets.

T-nuts

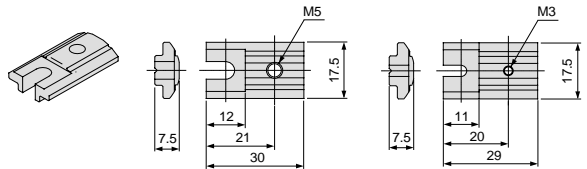
(Weight: 10.0g)



T-brackets

Model **LC1-1-L5** (Weight: 16.0g)

Model **LC1-1-L3** (Weight: 15.5g)

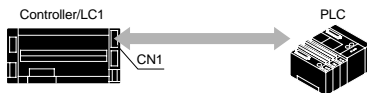


Controller Connectors

These are connectors 'all halfpitch type' used for CN1 (control input/output) and CN2 (general purpose input/output).

Note) The controller unit includes a controller connector for use with CN1 and CN2.

CN1 (Control input/output)



Controller connector (CN1: Control input/output)

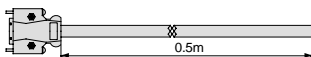
Model **LC1-1-1000**



10326-52A0-008
Halfpitch hood (26P)
Sumitomo/3M Limited
10126-3000VE
Halfpitch plug (26P)
Sumitomo/3M Limited

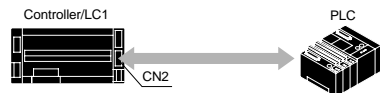
Single side wired controller connector (CN1: Control input/output)

Model **LC1-1-1050**



Cable is connected to LC1-1-1000.

CN2 (General purpose input/output)



Controller connector (CN2: General purpose input/output)

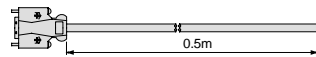
Model **LC1-1-2000**



10320-52A0-008
Halfpitch hood (20P)
Sumitomo/3M Limited
10120-3000VE
Halfpitch plug (20P)
Sumitomo/3M Limited

Single side wired controller connector (CN2: General purpose input/output)

Model **LC1-1-2050**



Cable is connected to LC1-1-2000.

Dedicated Communication Cables

These are cables used to connect controllers and PCs.

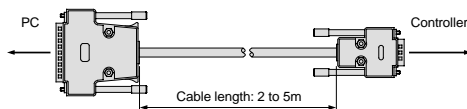
Note) Be aware of the configuration of the connector on the PC when selecting a dedicated communication cable..



Dedicated communication cable (D-sub) (For NEC PC-98 Series)

Model **LC1-1-R□D**

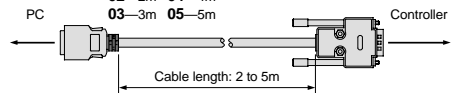
● Cable length
02—2m 04—4m
03—3m 05—5m



Dedicated communication cable (halfpitch) (For NEC PC-98 Series)

Model **LC1-1-R□H**

● Cable length
02—2m 04—4m
03—3m 05—5m

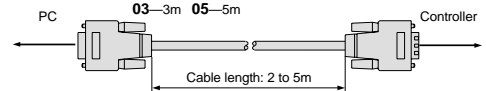


* PC-98 Series is a registered trade mark of NEC Corporation.

Dedicated communication cable (IBM PC/AT compatible computer)

Model **LC1-1-R□C**

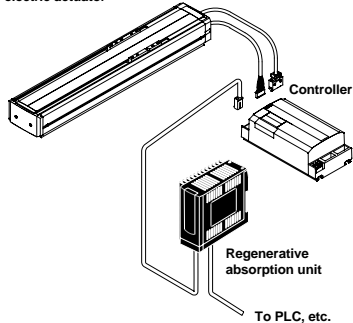
● Cable length
02—2m 04—4m
03—3m 05—5m





The regenerative absorption unit absorbs the energy (regenerative energy) that is generated by the motor when it decelerates. It is used to prevent drive power abnormality in the controller.

Standard motor
vertical mount specification
electric actuator



⚠ Danger

1. Contact SMC if the connected controller power supply voltage will be 110VAC or 220VAC, as this may cause fire or malfunction.
2. Secure a distance of 50mm or more between the body and control panel interior or other equipment, as this may cause fire or malfunction.
3. Confirm that there are no problems with terminal polarity, pin numbers, and crimping before connecting, as they may cause damage, malfunction, injuries, or fire.
4. Set up a circuit that shuts off the connected controller main power supply if trouble occurs in the regenerative absorption unit.
5. The regenerative absorption unit (LC7R) is exclusively for use with series LC1 controller connection. Therefore, never connect it to other equipment as this may cause fire or malfunction.

How to Order

Regenerative Absorption Unit

LC7R—K1 □ A □

Connected controller
power supply voltage ^{Note 1)}

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

Accessory type

Nil	Without accessory
S1	Series LC1 connector and contact pin + Regenerative absorption unit connector and contact pin
C1	Series LC1 connection cable (0.5m) ^{Note 2)}

Note 1) Consult SMC if the connected controller power supply voltage will be 110VAC or 220VAC.

Note 2) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Single Option

LC7R—1—□

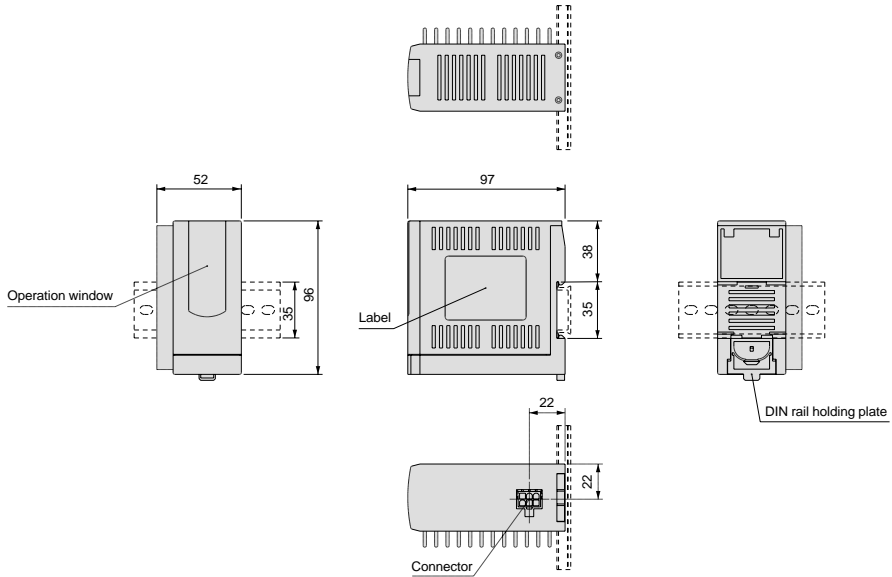
S0	Regenerative absorption unit connector and pin
S1	Series LC1 connector and pin
C1	Series LC1 connection cable (0.5m) ^{Note 3)}

Note 3) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Specifications

Model	LC7R-K11A □ □	LC7R-K12A □ □
Regeneration method	Heat exchange method based on resistance	
Regenerative resistance capacity	40W	
Regenerative operation voltage	180V	380V
Protective circuit	Regenerative voltage input mis-wiring protection Over current protection, Overheating protection (Normally closed, Radiator sensor OFF at 100°C)	
Ambient operating temperature	0 to 40°C	
Connected controller power voltage	100VAC	200VAC
External connection method	Connector	
Insulation resistance	500VDC, 50MΩ or more	
Mounting	DIN rail mount	

Dimensions



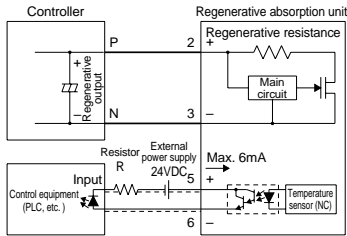
Connection Examples

• Electrical wire

- Cover O.D.: Max. 3.1mm (AWG18 to 20) [0.5m or less]
- - - - - Cover O.D.: Max. 3.1mm (AWG18 to 24) [1m or less]

• Temperature control output terminal

- Maximum rated voltage: 30V
- Maximum rated current: 6mA



Note) Select 6mA or less for resistor R after confirming the input capacity of the control equipment.

• Regenerative absorption unit connectors

[Manufacturer: Molex Japan Co., Ltd.]

Description	Part no.	Quantity
Receptacle	5557-06R	1
Female terminal	5556PBTL	6

• Wiring tools [Manufacturer: Molex Japan Co., Ltd.]

Wiring tools should be provided by customer.

Description	Part no.
Crimping tool	57026-5000 (for UL1007) 57027-5000 (for UL1015)
Puller	57031-6000

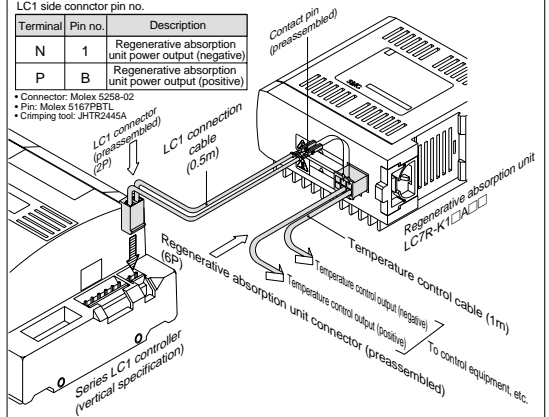
• Contact pin number

Terminal	Pin no.	Description
Vin (P)	2	Regenerative absorption unit power input (positive)
Vin (N)	3	Regenerative absorption unit power input (negative)
Vout (P)	1	Extended regenerative resistance output (positive)
Vout (N)	4	Extended regenerative resistance output (negative)
ALM (P)	5	Temperature control output terminal (positive)
ALM (N)	6	Temperature control output terminal (negative)

Insertion side



LC7R connection method



Series LC7R

Regenerative Absorption Unit Selection Guide

The graphs show the relationship between speed and distance where the use of a **regenerative absorption unit becomes necessary** for each vertical specification actuator based on the desired work piece load.

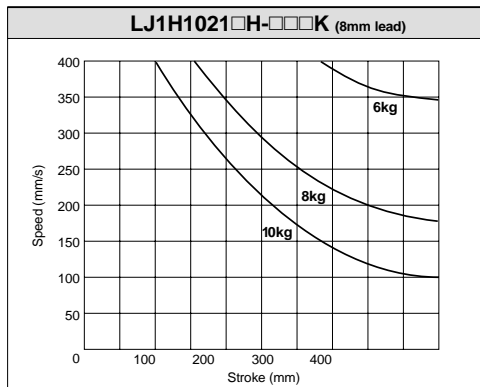
When setting a speed and distance that are above the line on the graphs, based on the work piece load for the actuator to be used, be sure to use a regenerative absorption unit.

Note 1) If a graph line for the work piece load (within the actuator's maximum load weight) on the actuator is not found, be sure to refer to the graph line for the heavier work piece load that is closest to the desired load.

Note 2) The use of a regenerative absorption unit is recommended for any operating conditions.

Applicable Controller Power Supply Voltage 100VAC Specification

Series LJ1H10



* When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

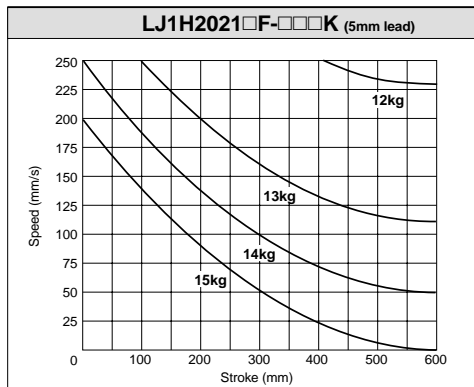
LJ1H1021□B-□□□K (12mm lead)

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Maximum work piece load: 5kg
Maximum speed: 600mm/s
Maximum stroke: 500mm

Series LJ1H20



* When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

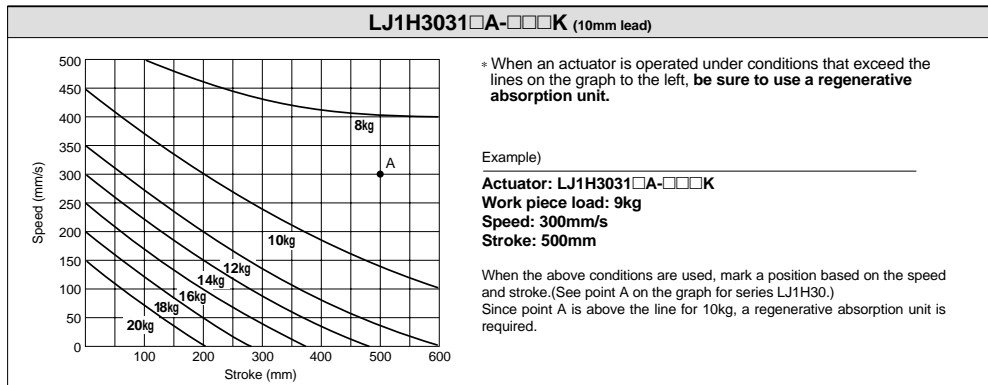
LJ1H2021□A-□□□K (10mm lead)

It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Maximum work piece load: 8kg
Maximum speed: 500mm/s
Maximum stroke: 600mm

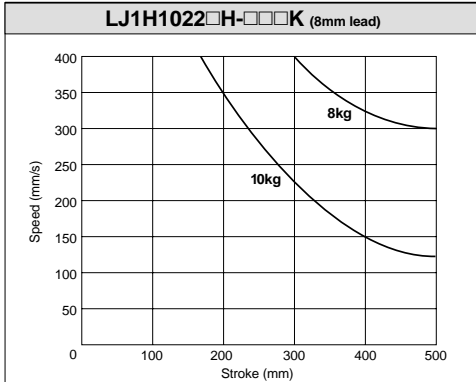
Series LJ1H30



⚠ Danger Consult SMC if the connected controller power supply voltage is 110VAC, as this may cause fire or malfunction.

Applicable Controller Power Supply Voltage 200VAC Specification

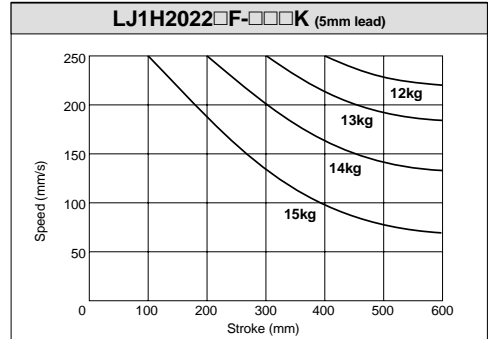
Series LJ1H10



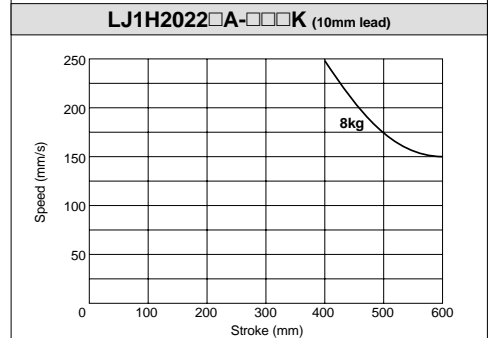
* When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**



Series LJ1H20

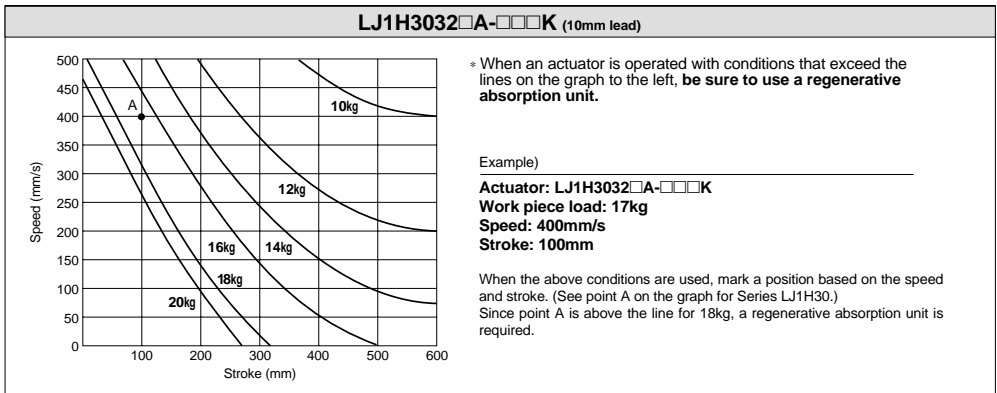


* When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**



* When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

Series LJ1H30



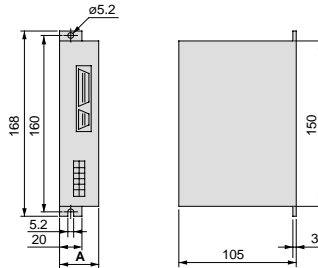
⚠ Danger Consult SMC if the connected controller power supply voltage is 220VAC, as this may cause fire or malfunction.

Non-Standard Motor Compatible Drivers

Matsushita Electric Industrial Co., Ltd. Drivers for LJ1, LG1, LX

Dimensions

Driver



Driver dimensions For LJ1, LG1

Driver model	A
MSD5A1P1E	35
MSD5A3P1E	
MSD013P1E	
MSD011P1E	45
MSD023P1E	
MSD021P1E	

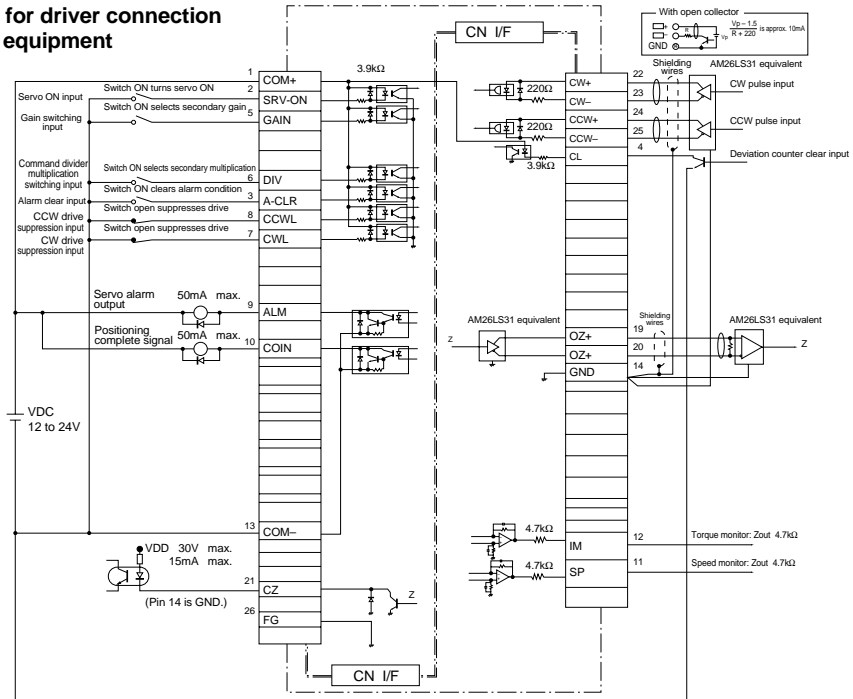
For LX

Driver model	A
MSD3A1P1E	35
MSD3A3P1E	35

Driver input/output signal list (CN-1/F connector)

Pin no.	Symbol	Signal description	Pin no.	Symbol	Signal description
1	COM+	Control signal power supply	12	IM	Torque monitor signal
2	SRV-ON	Servo ON input	13	COM-	Control signal power supply
3	A-CLR	Alarm clear input	14	GND	
4	CL	Counter clear input	19	OZ+	Z phase output
5	GAIN	Gain switching input	20	OZ-	Z phase output
6	DIV	Command divider switching input	21	CZ	Z phase output
7	CWL	CW drive suppression input	22	CW+	CW pulse input
8	CCWL	CCW drive suppression input	23	CW-	CW pulse input
9	ALM	Servo alarm output	24	CCW+	CCW pulse input
10	COIN	Positioning complete signal output	25	CCW-	CCW pulse input
11	SP	Speed monitor signal	26	FG	Frame ground

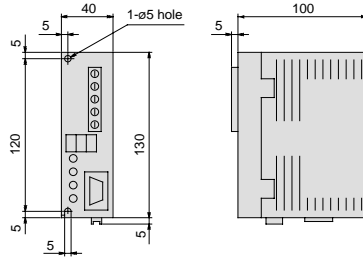
Example for driver connection between equipment



Non-standard Motor Compatible Drivers

Mitsubishi Electric Corporation Drivers for LJ1, LG1, LX

Dimensions (RS-232C without optional unit) Driver



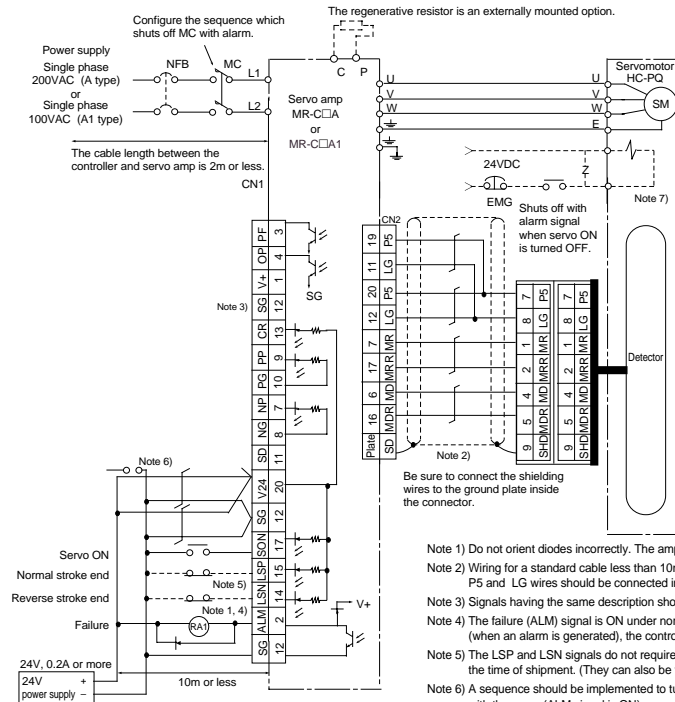
Driver dimensions For LJ1, LG1, LX

Driver model
MR-C10A
MR-C20A
MR-C10A1
MR-C20A1

Driver input/output signal list (CN-1/F connector)

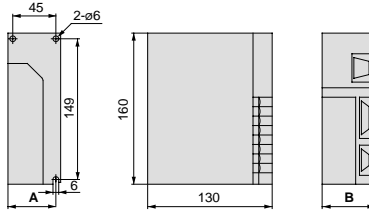
Pin no.	Symbol	Signal description	Pin no.	Symbol	Signal description
1	V+	Digital output power supply	11	SD	Shield
2	ALM	Failure	12	SG	Interface power supply common
3	PF	Positioning complete	13	CR	Clear
4	OP	Z phase pulse	14	LSN	Reverse stroke end
5	SG	Interface power supply common	15	LSP	Normal stroke end
7	NP	Reverse pulse line	16	V5	Interface power supply
8	NG	Reverse pulse line	17	SON	Servo ON
9	PP	Normal pulse line	19	OPC	Open collector power supply
10	PG	Normal pulse line	20	V24	Interface power supply

Example for driver connection between equipment



Yaskawa Electric Corporation Drivers for LJ1, LG1, LX

Dimensions
Driver



Driver dimensions
For LJ1, LG1

Driver model	A	B
SGDE-A5AP	50	55
SGDE-A5BP		
SGDE-O1AP		
SGDE-O1BP		
SGDE-O2AP	65	75

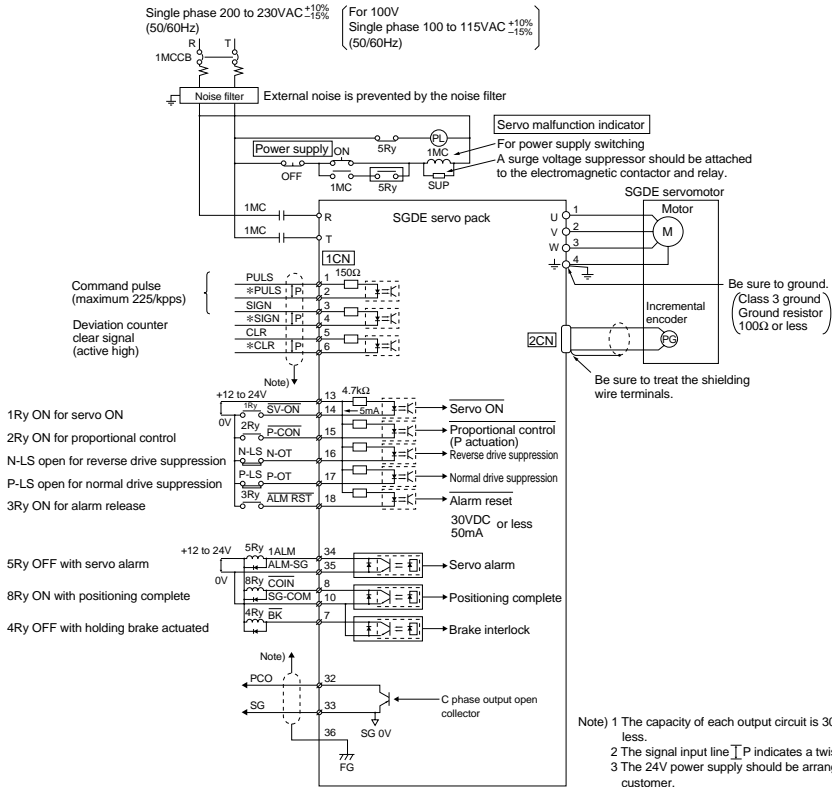
For LX

Driver model	A	B
SGDE-A3BP	50	55
SGDE-A3AP	50	55

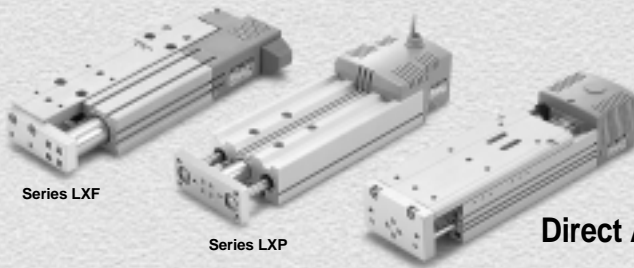
Driver input/output signal list (CN-1/F connector)

Pin no.	Signal	Signal description	Pin no.	Signal	Signal description
1	PULS	Command pulse input	14	S-ON	Servo ON input
2	*PULS	Command pulse input	15	P-ON	P actuation input
3	SIGN	Command code input	16	P-OT	Normal rotation suppression input
4	*SIGN	Command code input	17	N-OT	Reverse rotation suppression input
5	CLR	Deviation counter clear input	18	ALMRST	Alarm reset input
6	*CLR	Deviation counter clear input	32	PCO	PG output C phase
7	BK	Brake interlock signal output	33	SG	0V
8	COIN	Positioning complete signal output	34	ALM	Servo alarm output
10	SG	0V	35	SG	0V
13	P-IN	External power supply input	36	FG	Frame ground

Example for driver connection between equipment



LJ1
LG1
LG1
LX
LC6D/LC6C Switches



Series LXF

Series LXP

Series LXS

Short Stroke
Electric Actuator

Series LX

Direct Acting Guide/Ball Bushing

Series	Motor type	Brake	Guide type	Model	Lead screw lead mm		Page
					Ball screw	Slide screw	
LXF	5 phase stepper	Without brake	Direct acting guide	LXFH5	2 5	6 12	210
LXP	2 phase stepper	Without brake	Ball bushing	LXPB2	2 5	6 12	218
		With brake			2 5	6 12	226
	5 phase stepper	Without brake		LXPB5	2 5	6 12	234
		With brake			2 5	6 12	242
LXS	2 phase stepper	Without brake	High rigidity direct acting guide	LXSH2	2 5	6 12	250
		With brake			2 5	6 12	258
	5 phase stepper	Without brake		LXSH5	2 5	6 12	266
		With brake			2 5	6 12	274

■ CE Marking _____ Page 282

■ Made to Order

• AC servomotor specification _____ 288

• Low particulate generation specification _____ 294

■ Construction _____ 296

■ Mounting _____ 299

■ Acceleration Time Guide _____ 302

■ Table Deflection _____ 304

Part Number Designations

LX S H 5 B C 100 S B F9N 1

Actuator configuration

F	Flat table type
P	Guide rod type
S	Slide table type

Guide type

H	Direct acting guide
B	Ball bushing

Motor type

2	2 phase stepper motor
5	5 phase stepper motor

Lead screw type

B	Ball screw
S	Slide screw

Lead screw lead

A	6mm
B	12mm
C	2mm
D	5mm

Stroke

Home position switch

Nil	None
S	With solid state switch (cable length 0.3m)

Brake

Nil	None
B	With brake

Number of auto switches/proximity switches

1	1 pc.
2	2 pcs.
:	:
6	6 pcs.

Auto switch/Proximity switch type

Auto switches	Without auto switch/proximity switch	Proximity switches	
F9N	D-F9N (lead wire length 0.5m)	GN	With sensor plate, without proximity switch
F9P	D-F9P (lead wire length 0.5m)	G	GXL-8F (lead wire length 1m)
F9G	D-F9G (lead wire length 0.5m)	GD	GXL-8FI (lead wire length 1m)
F9H	D-F9H (lead wire length 0.5m)	GB	GXL-8FB (lead wire length 1m)
F9GL	D-F9GL (lead wire length 3m)	GDB	GXL-8FIB (lead wire length 1m)
F9HL	D-F9HL (lead wire length 3m)	GU	GXL-8FU (lead wire length 1m)
F9B	D-F9B (lead wire length 0.5m)	GUB	GXL-8FUB (lead wire length 1m)
F9NL	D-F9NL (lead wire length 3m)		
F9PL	D-F9PL (lead wire length 3m)		
F9BL	D-F9BL (lead wire length 3m)		

The tables above show the definition for each symbol only and cannot be used for actual model selection.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

5 Phase Stepper Motor Low Profile Slide Table Type

Without Motor Brake

Series LXF

Direct Acting Guide

Ball Screw
ø8mm/2mm lead

How to Order

LXFH5 **BC** — **Stroke** **S** — **GD** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Proximity switch type

Nil	None
-----	------

Refer to the table on the right for proximity switch part numbers.

Number of proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN	With sensor rail and sensor plate without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Standard stroke		mm	25	50	75	100
Performance	Body weight	kg	0.8	1.0	1.1	1.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	3 (2) horizontal <small>Note 1)</small>			
	Speed	mm/s	to 30 <small>Note 2)</small>			
	Positioning repeatability	mm	±0.03			
Main parts	Motor	5 phase stepper motor (without brake)				
	Lead screw	Ball screw ø8mm, 2mm lead				
	Guide	Direct acting guide				
Home position switch	Model	Photo micro sensor EE-SX672				
Driver	Model	LC6D-507AD (Refer to page 306 for details.)				

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

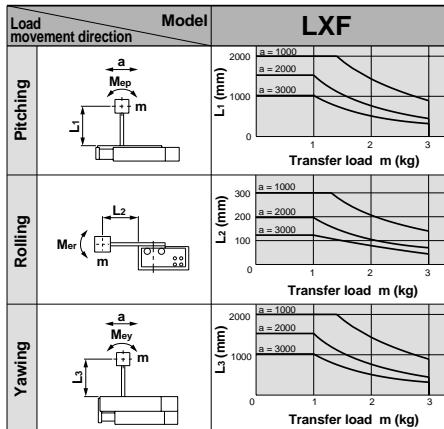
Allowable Moment (N·m)

Allowable static moment

Pitching	4
Rolling	3
Yawing	4

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

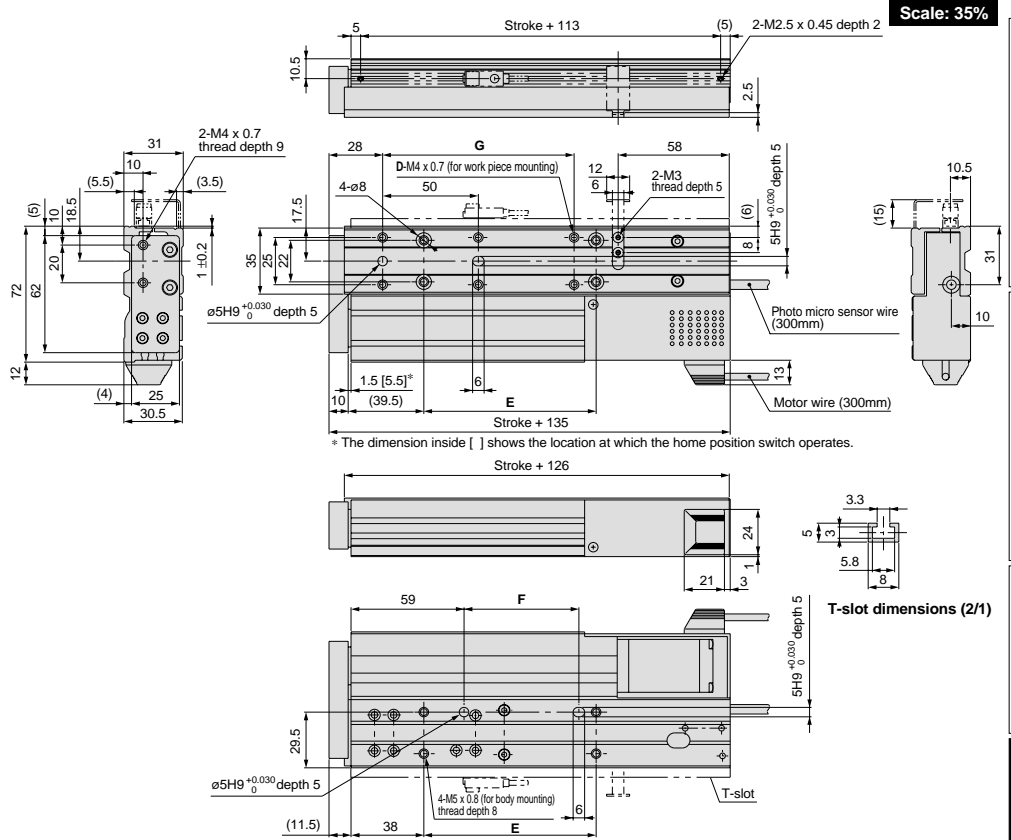
Allowable dynamic moment



Refer to page 304 for deflection data.

5 Phase Stepper Motor/Without Motor Brake *Series LXF*

Dimensions/LXFH5BC



Model	D	E	F	G
LXFH5BC-25	4	60	30	(50)
LXFH5BC-50	4	90	60	(50)
LXFH5BC-75	6	90	60	100
LXFH5BC-100	6	90	60	100

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	
	20	0.1	0.6	2.6	5.1	
	30	0.1	0.4	1.7	3.4	

For transfer load of 2kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	
	20	0.1	0.6	2.6	5.1	
	30	0.1	0.4	1.7	3.4	

For transfer load of 1kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	
	20	0.1	0.6	2.6	5.1	
	30	0.1	0.4	1.7	3.4	

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	
	20	0.1	0.6	2.6	5.1	
	30	0.1	0.4	1.7	3.4	

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

Low Profile Slide Table Type

Without Motor Brake

Series LXF

Direct Acting Guide

Ball Screw

∅8mm/5mm lead

How to Order

LXFH5 **BD** — **Stroke** **S** — **GD** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Proximity switch type

Nil	None
-----	------

Refer to the table on the right for proximity switch part numbers.

Number of proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN	With sensor rail and sensor plate without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	25	50	75	100
Performance	Body weight	kg		0.8	1.0	1.1	1.2
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	3 (2) horizontal <small>Note 1</small>				
	Speed	mm/s	to 80 <small>Note 2</small>				
	Positioning repeatability	mm	±0.03				
Main parts	Motor	5 phase stepper motor (without brake)					
	Lead screw	Ball screw ∅8mm, 5mm lead					
	Guide	Direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX672					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Allowable Moment (N·m)

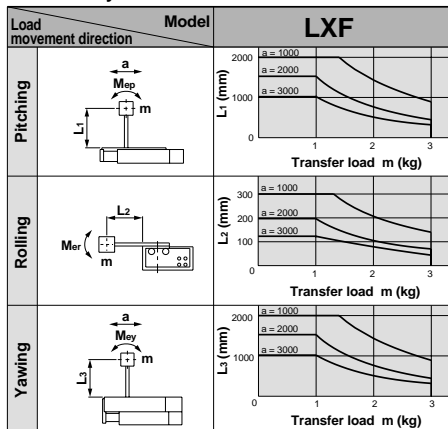
Allowable static moment

Pitching	4
Rolling	3
Yawing	4

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)

Me : Dynamic moment

Allowable dynamic moment



Refer to page 304 for deflection data.

5 Phase Stepper Motor

Low Profile Slide Table Type

Without Motor Brake

Series LXF

Direct Acting Guide

Slide Screw
ø8mm/6mm lead

How to Order

LXFH5 SA Stroke S F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail and sensor plate without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	25	50	75	100
Performance	Body weight	kg	0.8	1.0	1.1	1.2	
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	3 (2) horizontal (Note 1)				
	Speed	mm/s	to 100 (Note 2)				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	5 phase stepper motor (without brake)					
	Lead screw	Ball screw ø8mm, 6mm lead					
	Guide	Direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX672					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

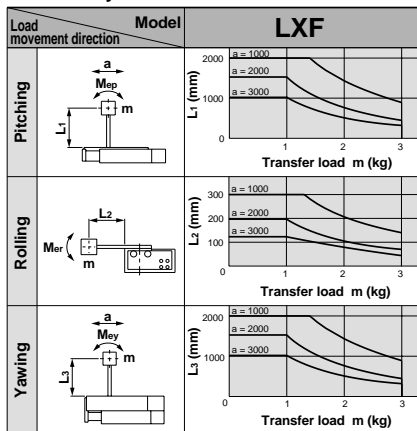
Allowable Moment (N·m)

Allowable static moment

Pitching	4
Rolling	3
Yawing	4

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

Allowable dynamic moment



Refer to page 304 for deflection data.

5 Phase Stepper Motor

Low Profile Slide Table Type

Without Motor Brake

Series LXF

Direct Acting Guide

Slide Screw
ø8mm/12mm lead

How to Order

LXFH5 **SB** — **Stroke** **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Specifications

	Standard stroke	mm	25	50	75	100
Performance	Body weight	kg	0.8	1.0	1.1	1.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	2 (2) horizontal Note 1)			
	Speed	mm/s	to 200 Note 2)			
	Positioning repeatability	mm	±0.05			
Main parts	Motor	5 phase stepper motor (without brake)				
	Lead screw	Slide screw ø8mm, 12mm lead				
	Guide	Direct acting guide				
Home position switch	Model	Photo micro sensor EE-SX672				
Driver	Model	LC6D-507AD (Refer to page 306 for details.)				

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail and sensor plate without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

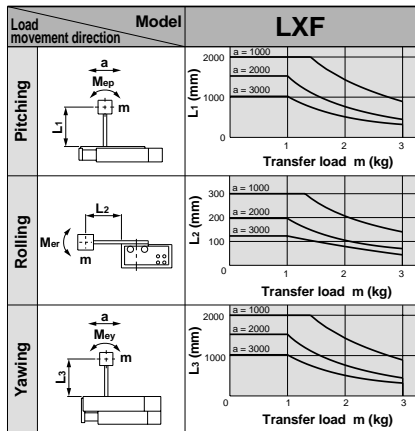
Allowable Moment (N·m)

Allowable static moment

Pitching	4
Rolling	3
Yawing	4

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

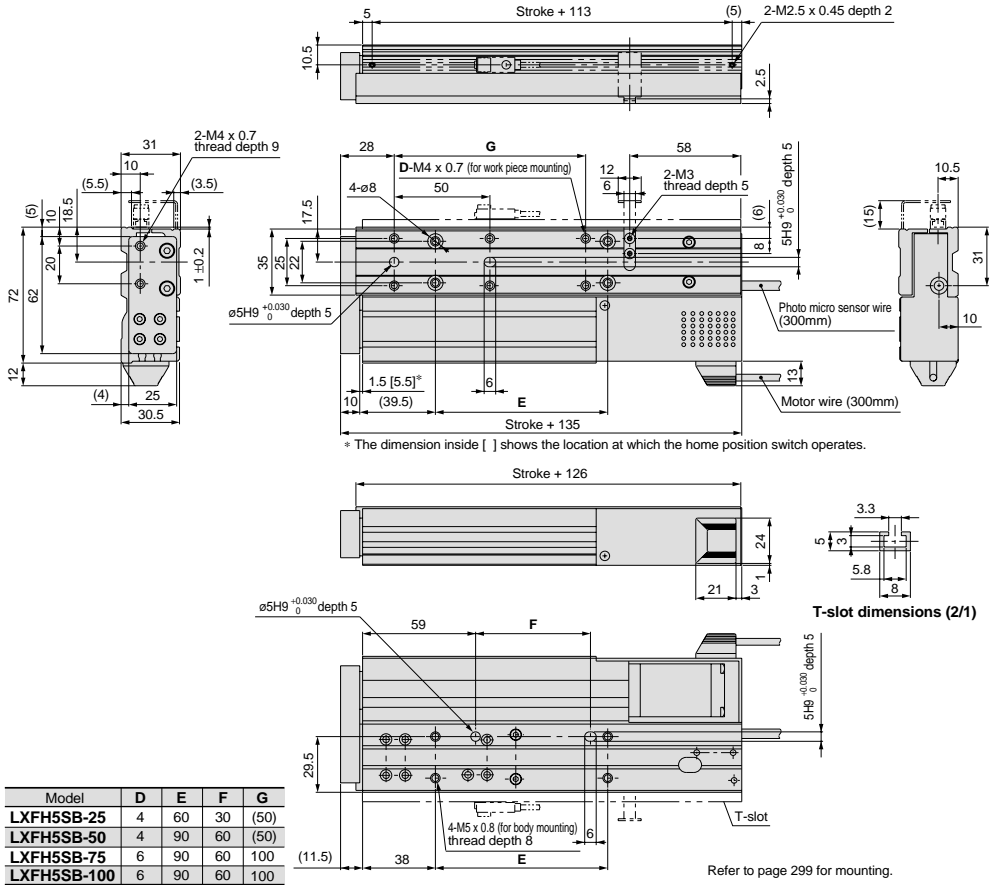
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXFH5SB

Scale: 35%



Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

		Positioning time (sec)			
		1	10	50	100
Speed (mm/s)	50	0.1	0.3	1.1	2.1
	100	0.1	0.2	0.6	1.1
	200	0.1	0.2	0.4	0.6

For transfer load of 2kg

		Positioning time (sec)			
		1	10	50	100
Speed (mm/s)	50	0.1	0.3	1.1	2.1
	100	0.1	0.2	0.6	1.1
	200	0.1	0.2	0.5	0.7

For transfer load of 1kg

		Positioning time (sec)			
		1	10	50	100
Speed (mm/s)	50	0.1	0.3	1.1	2.1
	100	0.1	0.2	0.6	1.1
	200	0.1	0.2	0.4	0.7

Refer to page 302 for acceleration time.

2 Phase Stepper Motor

Without Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
 $\varnothing 8\text{mm}/2\text{mm}$ lead

How to Order

LXPB2 **BC** - Stroke **S** - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

		Standard stroke	mm	50	75	100	125	150	175	200
Performance	Body weight	kg		2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	6 horizontal/5 vertical <small>Note 1)</small>							
	Speed	mm/s	to 30 <small>Note 2)</small>							
	Positioning repeatability	mm	±0.03							
Main parts	Motor	2 phase stepper motor (without brake)								
	Lead screw	Ball screw $\varnothing 8\text{mm}$, 2mm lead								
	Guide	Ball bushing								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-220AD (Refer to page 306 for details.)								
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

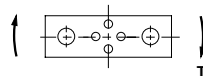
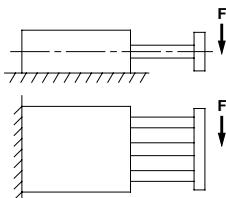
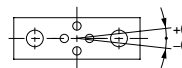
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N.m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°

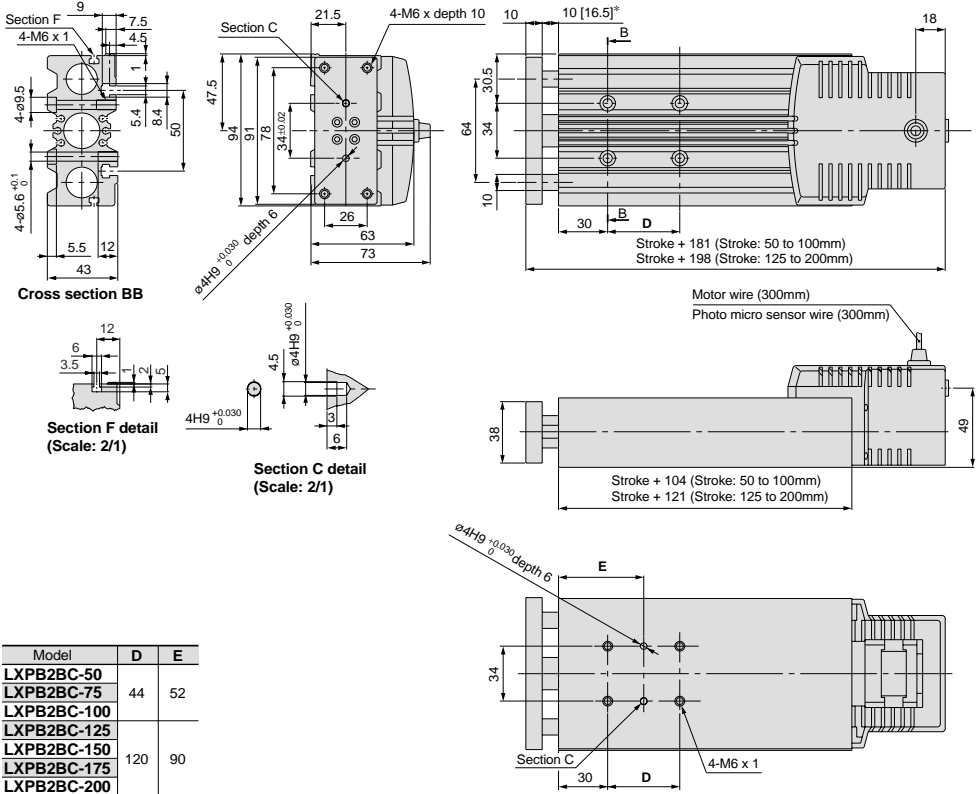


Refer to page 304 for deflection data.

Dimensions/LXPB2BC

Scale: 30%

* The dimension inside [] shows the location at which the home position switch operates.



Model	D	E
LXPB2BC-50	44	52
LXPB2BC-75		
LXPB2BC-100		
LXPB2BC-125	120	90
LXPB2BC-150		
LXPB2BC-175		
LXPB2BC-200		

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 6kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.7	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

Refer to page 303 for acceleration time.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

2 Phase Stepper Motor

Without Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
 $\varnothing 8\text{mm}/5\text{mm lead}$

How to Order

LXPB2 **BD** - Stroke **S** - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

Standard stroke		mm	50	75	100	125	150	175	200
Performance	Body weight	kg	2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6 horizontal/5 vertical <small>Note 1)</small>						
	Speed	mm/s	to 80 <small>Note 2)</small>						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	2 phase stepper motor (without brake)							
	Lead screw	Ball screw $\varnothing 8\text{mm}$, 5mm lead							
	Guide	Ball bushing							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-220AD (Refer to page 306 for details.)							
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

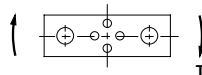
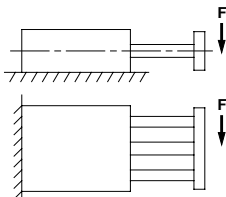
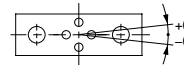
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

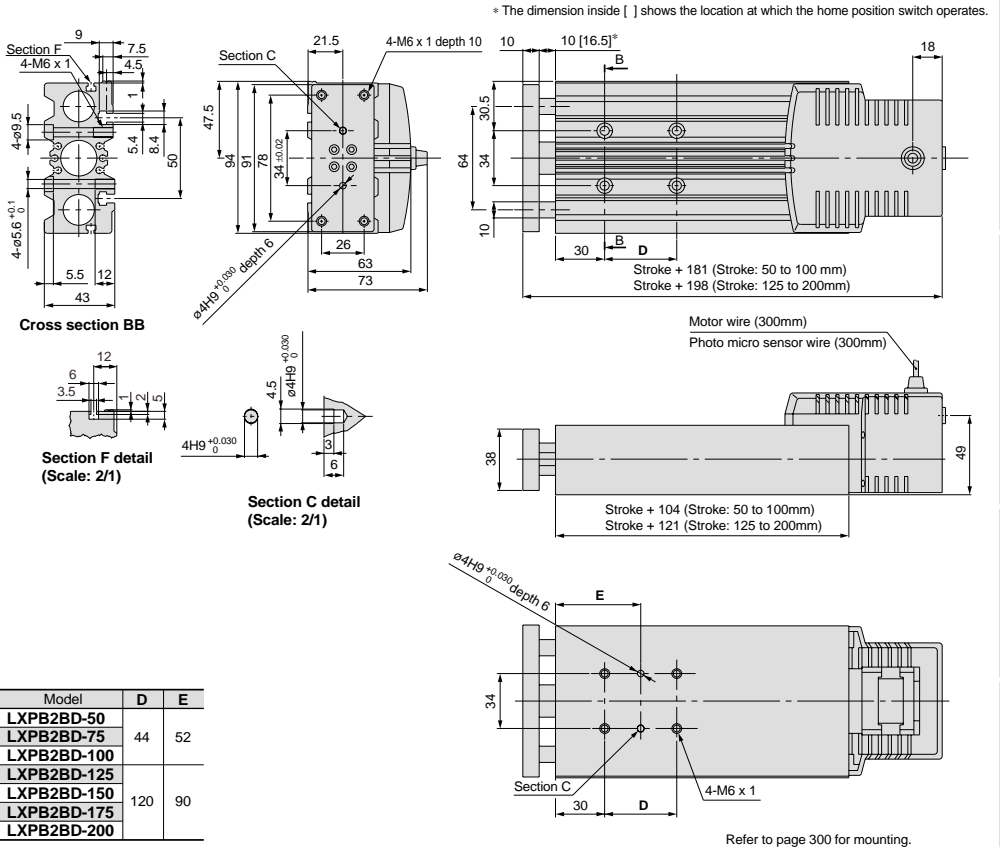
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

Dimensions/LXPB2BD

Scale: 30%



Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 6kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

Refer to page 303 for acceleration time.

2 Phase Stepper Motor

Low Profile Slide Table Type

Without Motor Brake

Series LXP

Ball Bushing

Slide Screw

∅8mm/6mm lead

How to Order

LXPB2 SA — Stroke **S** — **F9N 1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

Standard stroke		mm	50	75	100	125	150	175	200
Performance	Body weight	kg	2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6 horizontal/5 vertical (Note 1)						
	Speed	mm/s	to 100 (Note 2)						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	2 phase stepper motor (without brake)							
	Lead screw	Slide screw ∅8mm, 6mm lead							
	Guide	Ball bushing							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-220AD (Refer to page 306 for details.)							
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

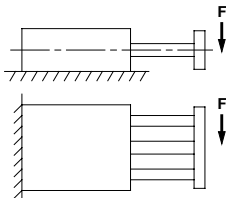
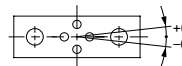
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

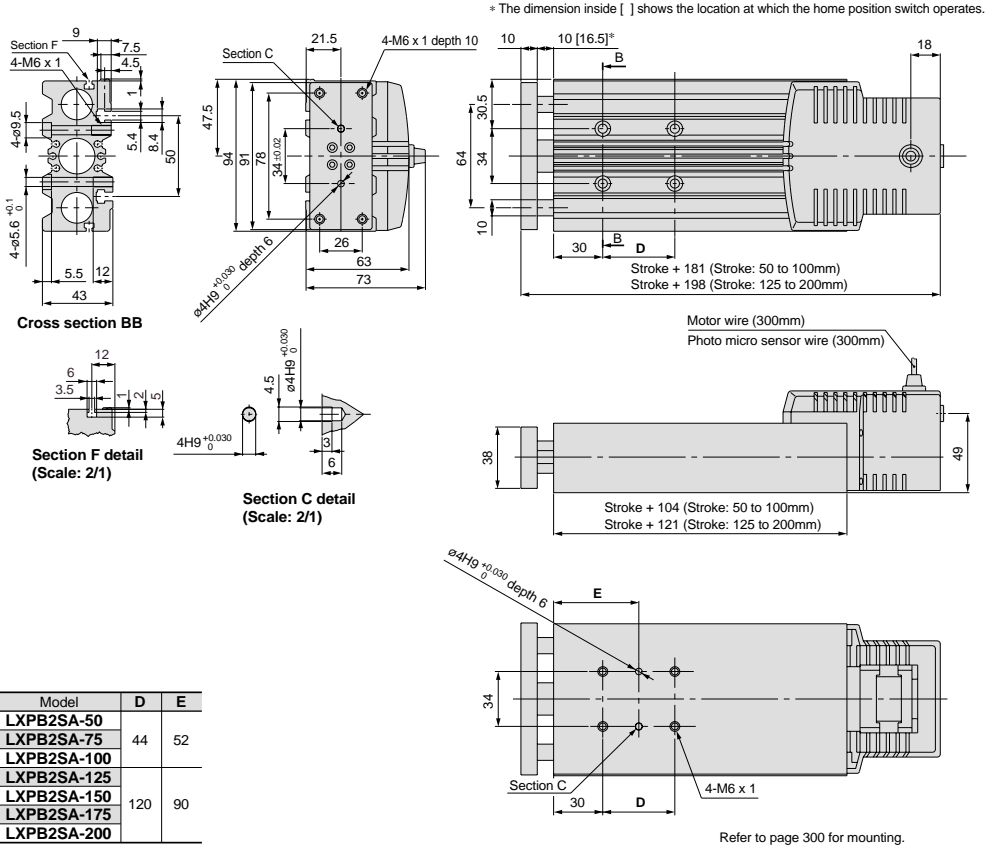
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

Dimensions/LXPB2SA

Scale: 30%



Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

For transfer load of 3kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

Refer to page 302 for acceleration time.

For transfer load of 6kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.1	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

2 Phase Stepper Motor

Without Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Slide Screw
ø8mm/12mm lead

How to Order

LXPB2 **SB** - Stroke **S** - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

		Standard stroke	mm	50	75	100	125	150	175	200
Performance	Body weight	kg		2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	3 horizontal/3 vertical <small>Note 1)</small>							
	Speed	mm/s	to 200 <small>Note 2)</small>							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	2 phase stepper motor (without brake)								
	Lead screw	Slide screw ø8mm, 12mm lead								
	Guide	Ball bushing								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-220AD (Refer to page 306 for details.)								
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

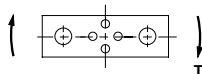
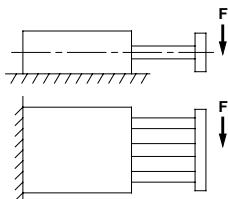
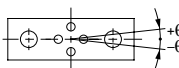
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N.m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

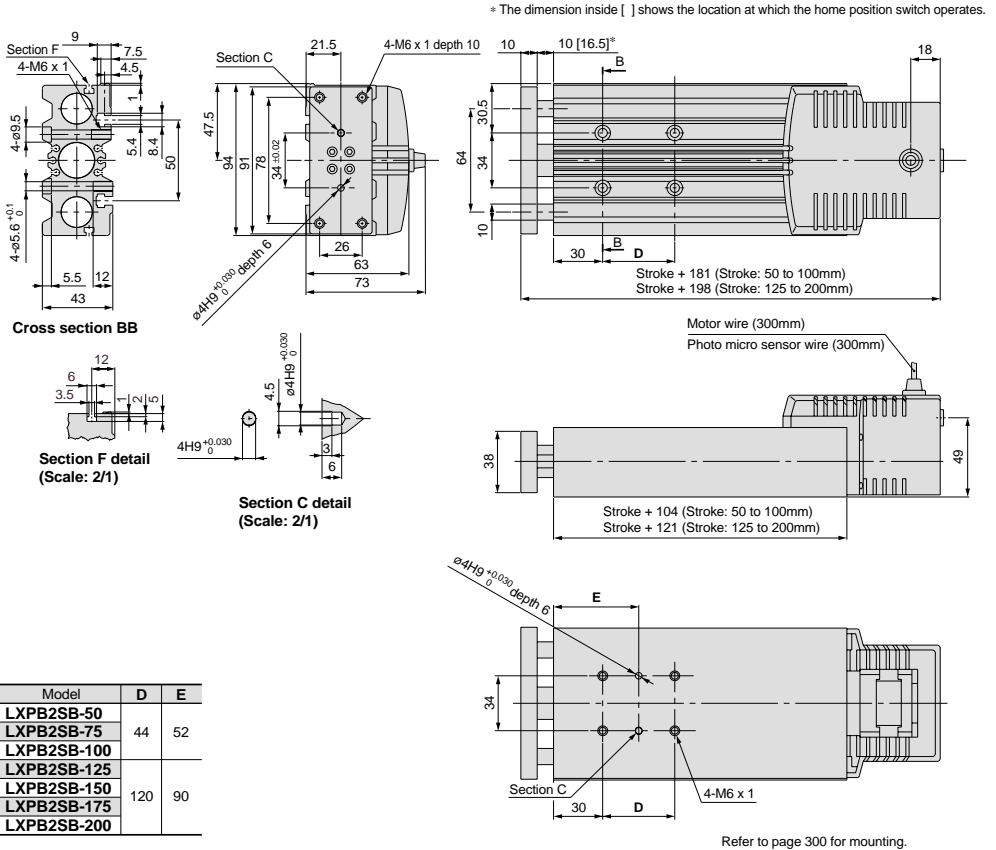
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

Dimensions/LXPB2SB

Scale: 30%



Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.2
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

For transfer load of 1.5kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

Refer to page 302 for acceleration time.

For transfer load of 3kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

2 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
ø8mm/2mm lead

How to Order

LXPB2 **BC** - Stroke **S** B - **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

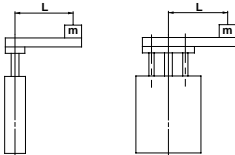
Standard stroke		mm	50	75	100	125	150	175	200	
Performance	Body weight	kg	2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	6 horizontal/5 vertical (Note 1)							
	Speed	mm/s	to 30 (Note 2)							
	Positioning repeatability	mm	±0.03							
Main parts	Motor	2 phase stepper motor (with brake)								
	Lead screw	Ball screw ø8mm, 2mm lead								
	Guide	Ball bushing								
	Electromagnetic brake	Model	De-energized operating type							
		Static torque	0.1N·m or more							
Rated voltage		24VDC ±5%								
	Power consumption	5W								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-220AD (Refer to page 306 for details.)								
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

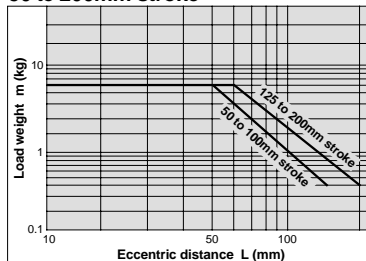
Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



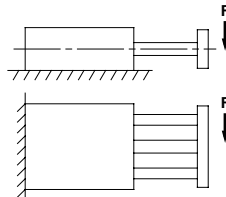
50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17



Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

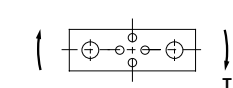
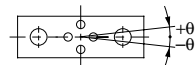


Plate non-rotating accuracy (θ)

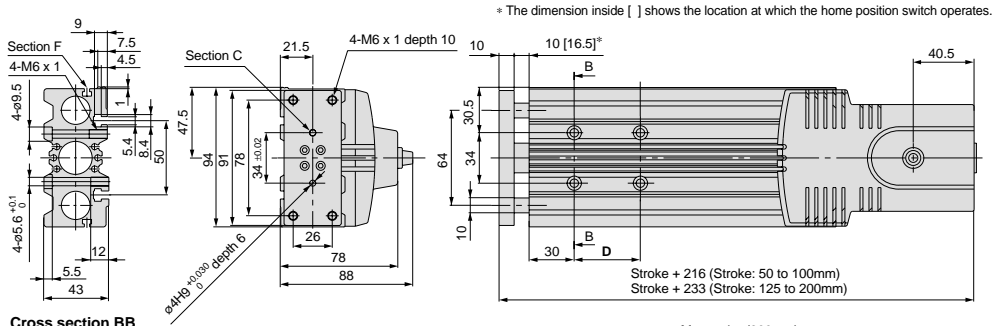
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

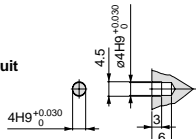
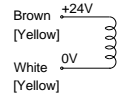
Dimensions/LXPB2BC

Scale: 30%



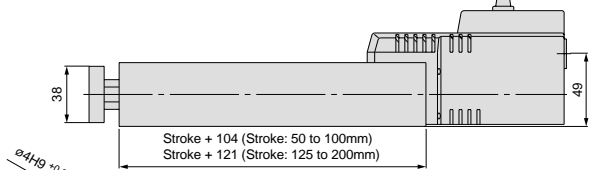
Cross section BB

Brake electrical circuit



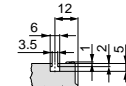
Section C detail (Scale: 2/1)

Motor wire (300mm)
Brake wire (300mm)
Photo micro sensor wire (300mm)

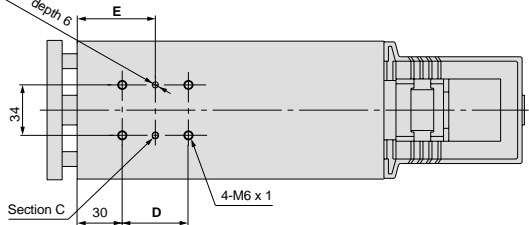


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB2BC-50	44	52
LXPB2BC-75		
LXPB2BC-100		
LXPB2BC-125		
LXPB2BC-150	120	90
LXPB2BC-175		
LXPB2BC-200		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)	Positioning time (sec)					
	1	10	50	100	200	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 5kg

Positioning distance (mm)	Positioning time (sec)					
	1	10	50	100	200	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 2.5kg

Positioning distance (mm)	Positioning time (sec)					
	1	10	50	100	200	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

Refer to page 303 for acceleration time.

2 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
ø8mm/5mm lead

How to Order

LXPB2 **BD** — Stroke **S** B — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

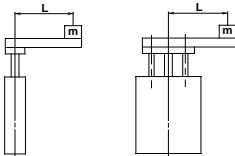
Standard stroke		mm	50	75	100	125	150	175	200
Performance	Body weight	kg	2.2	2.4	2.5	2.8	3.0	3.1	3.3
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6 horizontal/5 vertical (Note 1)						
	Speed	mm/s	to 80 (Note 2)						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	2 phase stepper motor (with brake)							
	Lead screw	Ball screw ø8mm, 5mm lead							
	Guide	Ball bushing							
	Electromagnetic brake	Model	De-energized operating type						
		Static torque	0.1N·m or more						
Rated voltage		24VDC ±5%							
	Power consumption	5W							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-220AD (Refer to page 306 for details.)							
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

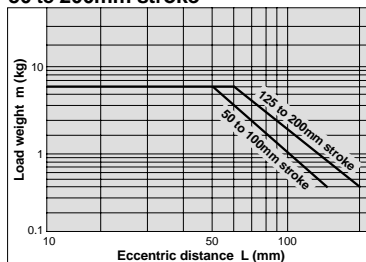
Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

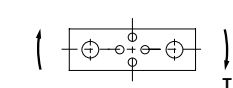
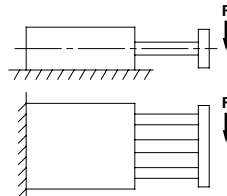
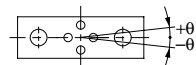


Plate non-rotating accuracy (θ)

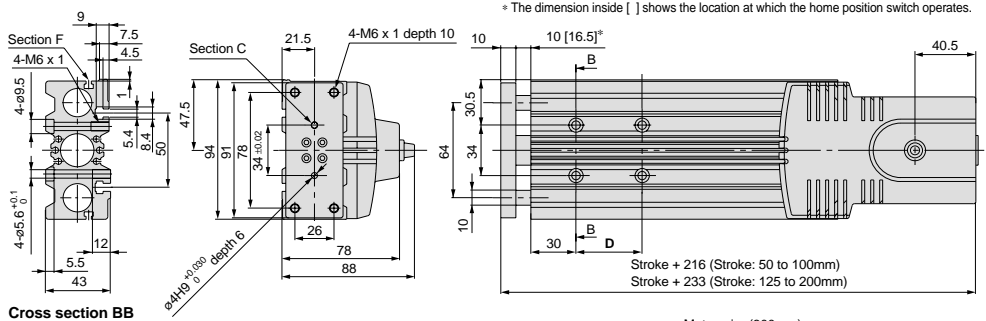
Non-rotating accuracy (θ)
±0.09°



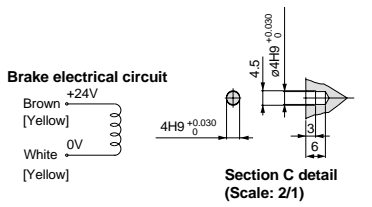
Refer to page 304 for deflection data.

Dimensions/LXPB2BD

Scale: 30%

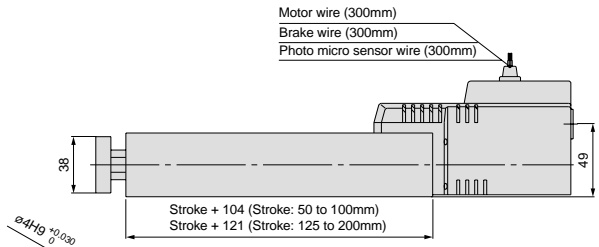


Cross section BB



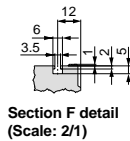
Brake electrical circuit

Section C detail (Scale: 2/1)

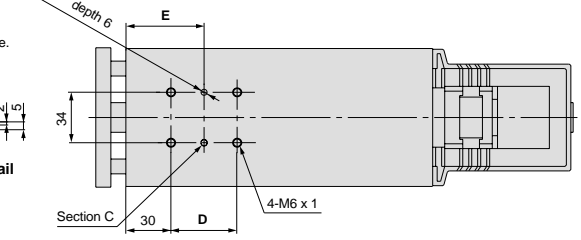


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB2BD-50	44	52
LXPB2BD-75		
LXPB2BD-100		
LXPB2BD-125	120	90
LXPB2BD-150		
LXPB2BD-175		
LXPB2BD-200		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 2.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

Refer to page 303 for acceleration time.

2 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Slide Screw
ø8mm/6mm lead

How to Order

LXPB2 SA Stroke SB F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

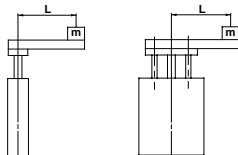
Standard stroke		mm	50	75	100	125	150	175	200	
Performance	Body weight	kg	2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	6 horizontal/5 vertical (Note 1)							
	Speed	mm/s	to 100 (Note 2)							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	2 phase stepper motor (with brake)								
	Lead screw	Slide screw ø8mm, 6mm lead								
	Guide	Ball bushing								
	Electromagnetic brake	Model	De-energized operating type							
		Static torque	0.1N·m or more							
		Rated voltage	24VDC ±5%							
Power consumption	5W									
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-220AD (Refer to page 306 for details.)								
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

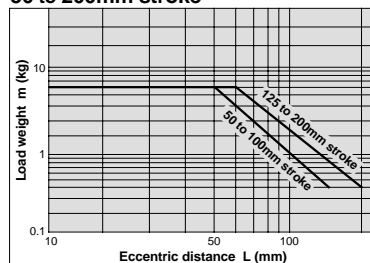
Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

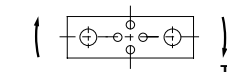
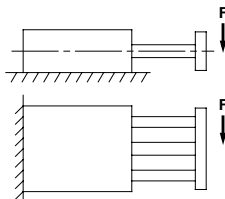
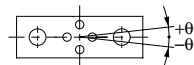


Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

2 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Slide Screw

ø8mm/12mm lead

How to Order

LXPB2 **SB** — Stroke **S** B — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

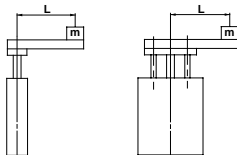
Standard stroke		mm	50	75	100	125	150	175	200	
Performance	Body weight	kg	2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	3 horizontal/3 vertical (Note 1)							
	Speed	mm/s	to 200 (Note 2)							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	2 phase stepper motor (with brake)								
	Lead screw	Slide screw ø8mm, 12mm lead								
	Guide	Ball bushing								
	Electromagnetic brake	Model	De-energized operating type							
		Static torque	0.1N·m or more							
Rated voltage		24VDC ±5%								
	Power consumption	5 W								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-220AD (Refer to page 306 for details.)								
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

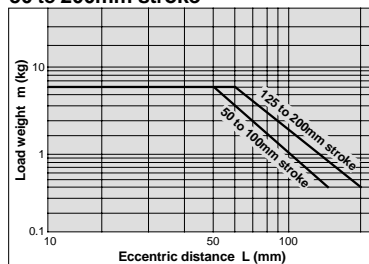
Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

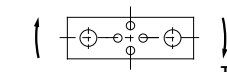
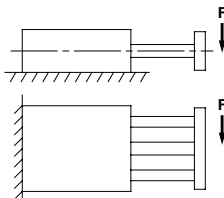
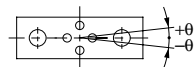


Plate non-rotating accuracy (θ)

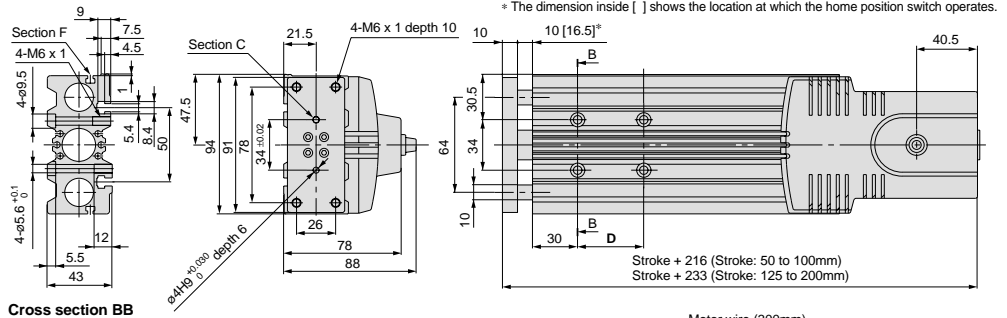
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

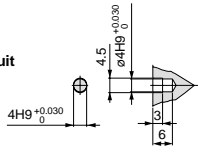
Dimensions/LXPB2SB

Scale: 30%



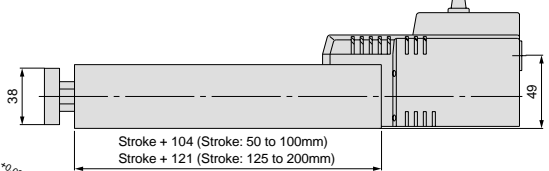
Cross section BB

Brake electrical circuit



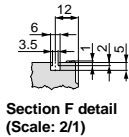
Section C detail (Scale: 2/1)

Motor wire (300mm)
Brake wire (300mm)
Photo micro sensor wire (300mm)

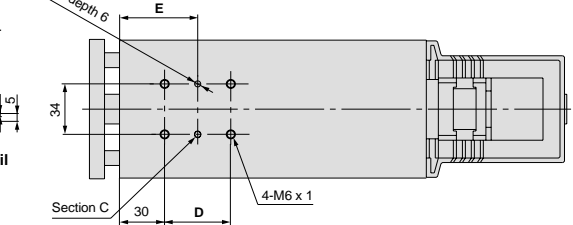


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB2SB-50	44	52
LXPB2SB-75		
LXPB2SB-100		
LXPB2SB-125	120	90
LXPB2SB-150		
LXPB2SB-175		
LXPB2SB-200		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.2	0.5	0.7	1.2

For transfer load of 1.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

Refer to page 302 for acceleration time.

5 Phase Stepper Motor

Guide Rod Type

Without Motor Brake

Series LXP

Ball Bushing

Ball Screw

∅8mm/2mm lead

How to Order

LXPB5 **BC** — Stroke **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

Standard stroke		mm	50	75	100	125	150	175	200
Performance	Body weight	kg	2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6 horizontal/5 vertical <small>Note 1)</small>						
	Speed	mm/s	to 30 <small>Note 2)</small>						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	5 phase stepper motor (without brake)							
	Lead screw	Ball screw ∅8mm, 2mm lead							
	Guide	Ball bushing							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-507AD (Refer to page 306 details.)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

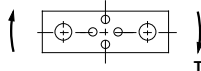
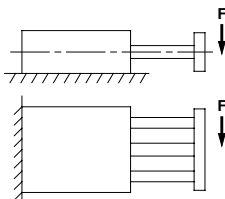
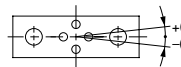
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°

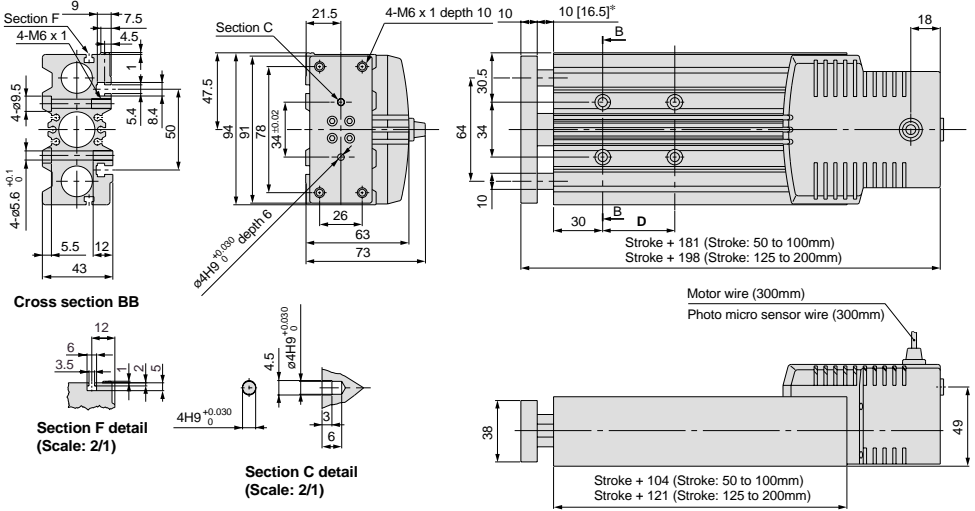


Refer to page 304 for deflection data.

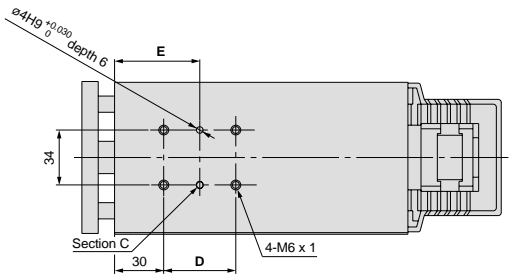
Dimensions/LXPB5BC

Scale: 30%

* The dimension inside [] shows the location at which the home position switch operates.



Model	D	E
LXPB5BC-50	44	52
LXPB5BC-75		
LXPB5BC-100		
LXPB5BC-125	120	90
LXPB5BC-150		
LXPB5BC-175		
LXPB5BC-200		



Refer to page 300 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 6kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

Guide Rod Type

Without Motor Brake

Series LXP

Ball Bushing

Ball Screw
∅8mm/5mm lead

How to Order

LXPB5 **BD** - Stroke **S** - F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Without auto switch				
Nil				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

Standard stroke		mm	50	75	100	125	150	175	200
Performance	Body weight	kg	2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6 horizontal/5 vertical <small>Note 1)</small>						
	Speed	mm/s	to 80 <small>Note 2)</small>						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	5 phase stepper motor (without brake)							
	Lead screw	Ball screw ∅8mm, 5mm lead							
	Guide	Ball bushing							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-507AD (Refer to page 306 for details.)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

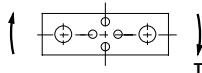
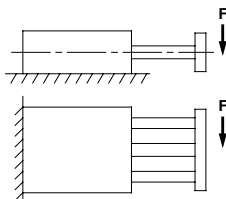
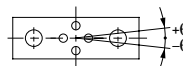
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°

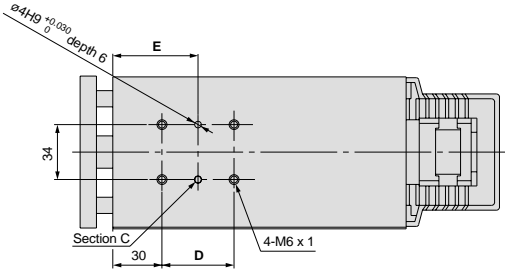
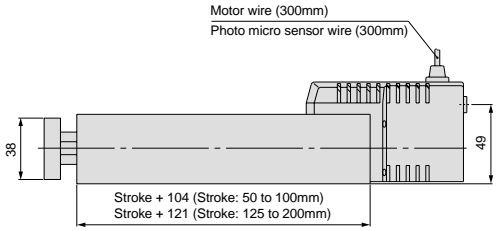
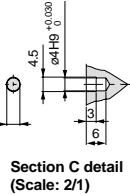
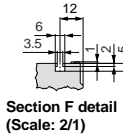
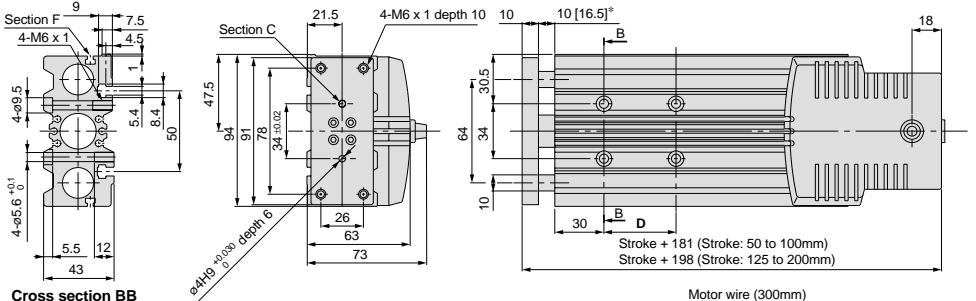


Refer to page 304 for deflection data.

Dimensions/LXPB5BD

Scale: 30%

* The dimension inside [] shows the location at which the home position switch operates.



Refer to page 300 for mounting.

Model	D	E
LXPB5BD-50	44	52
LXPB5BD-75		
LXPB5BD-100		
LXPB5BD-125	120	90
LXPB5BD-150		
LXPB5BD-175		
LXPB5BD-200		

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 6kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

Refer to page 303 for acceleration time.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

5 Phase Stepper Motor**Guide Rod Type****Without Motor Brake****Series LXP****Ball Bushing****Slide Screw****∅8mm/6mm lead****How to Order****LXPB5 SA Stroke S F9N 1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

		Standard stroke	mm	50	75	100	125	150	175	200
Performance	Body weight	kg		2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	4 horizontal/4 vertical <small>Note 1)</small>							
	Speed	mm/s	to 100 <small>Note 2)</small>							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	5 phase stepper motor (without brake)								
	Lead screw	Slide screw ∅8mm, 6mm lead								
	Guide	Ball bushing								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-507AD (Refer to page 306 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Operating Conditions**Allowable lateral load (F)**

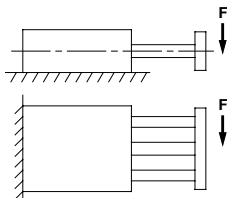
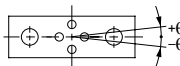
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°

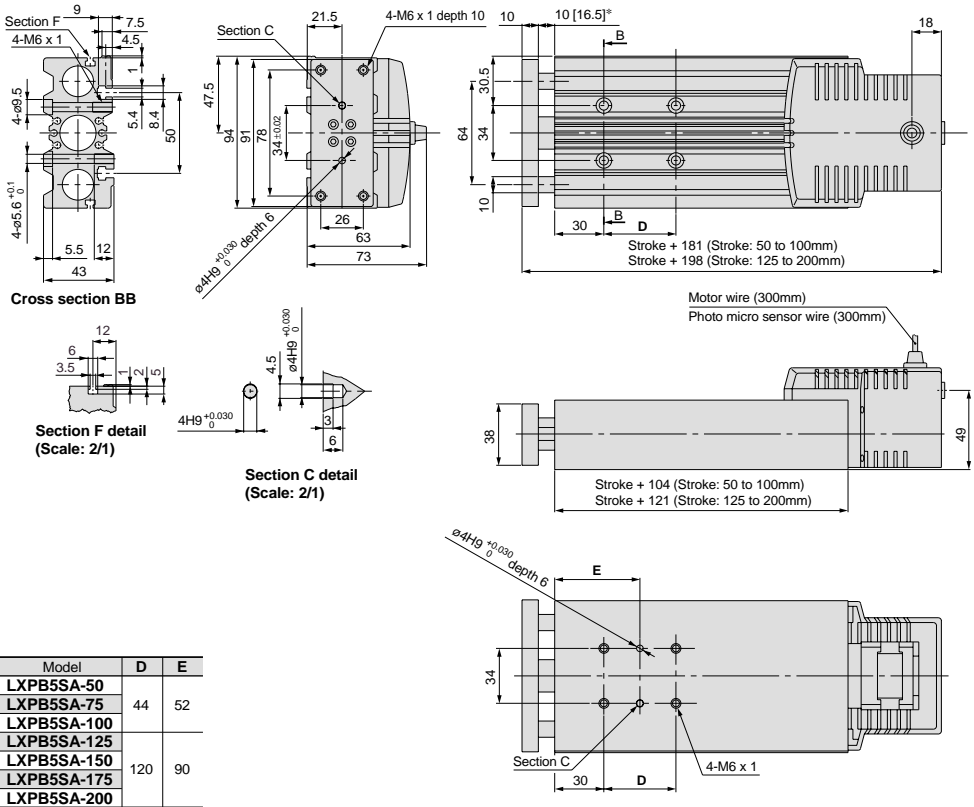


Refer to page 304 for deflection data.

Dimensions/LXPB5SA

Scale: 30%

* The dimension inside [] shows the location at which the home position switch operates.



Refer to page 300 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

For transfer load of 4kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

For transfer load of 2kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

Refer to page 302 for acceleration time.

5 Phase Stepper Motor Without Motor Brake

Guide Rod Type

Series LXP

Ball
Bushing

Slide Screw
ø8mm/12mm lead

How to Order

LXPB5 **SB** - Stroke **S** - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

		Standard stroke	mm	50	75	100	125	150	175	200
Performance	Body weight	kg		2.0	2.2	2.3	2.6	2.8	2.9	3.1
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	2 horizontal/2 vertical <small>Note 1)</small>							
	Speed	mm/s	to 200 <small>Note 2)</small>							
	Positioning repeatability	mm	±0.05							
Main parts	Motor	5 phase stepper motor (without brake)								
	Lead screw	Slide screw ø8mm, 12mm lead								
	Guide	Ball bushing								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-507AD (Refer to page 306 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Operating Conditions

Allowable lateral load (F)

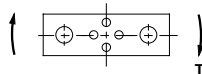
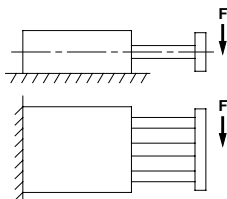
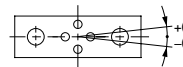
Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

Plate non-rotating accuracy (θ)

Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

5 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
 $\varnothing 8\text{mm}/2\text{mm lead}$

How to Order

LXPB5 **BC** - Stroke **S** B - **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Without auto switch				
Nil				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

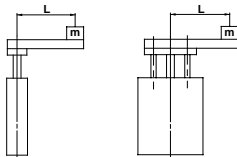
		Standard stroke	mm	50	75	100	125	150	175	200	
Performance	Body weight	kg		2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C		5 to 40 (with no condensation)							
	Work load	kg		6 horizontal/5 vertical <small>Note 1</small>							
	Speed	mm/s		to 30 <small>Note 2</small>							
	Positioning repeatability	mm		±0.03							
Main parts	Motor			5 phase stepper motor (with brake)							
	Lead screw			Ball screw $\varnothing 8\text{mm}$, 2mm lead							
	Guide			Ball bushing							
	Electromagnetic brake	Model			De-energized operating type						
		Static torque			0.1N·m or more						
Rated voltage				24VDC ±5%							
	Power consumption			5W							
Home position switch	Model			Photo micro sensor EE-SX673							
Driver	Model			LC6D-507AD (Details on page 306)							

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

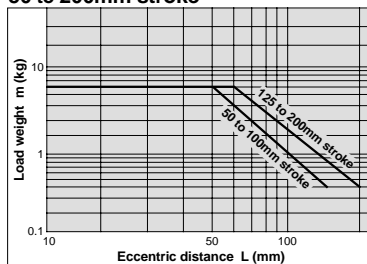
Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

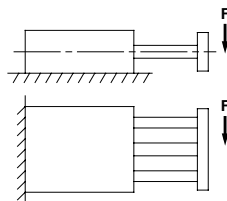
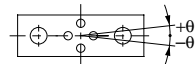


Plate non-rotating accuracy (θ)

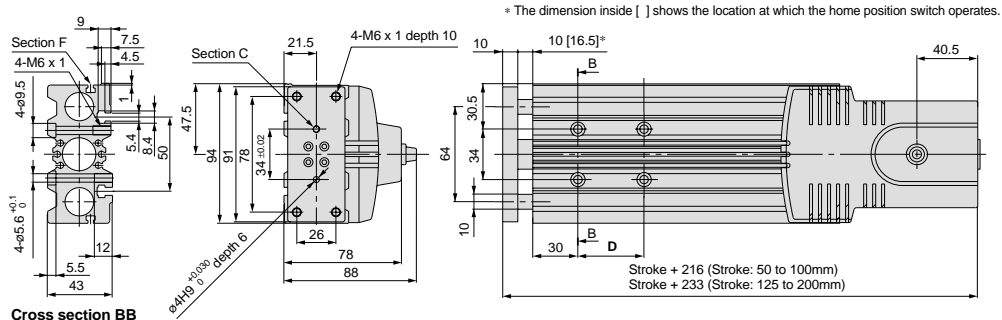
Non-rotating accuracy (θ)
 $\pm 0.09^\circ$



Refer to page 304 for deflection data.

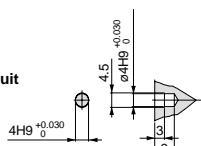
Dimensions/LXPB5BC

Scale: 30%

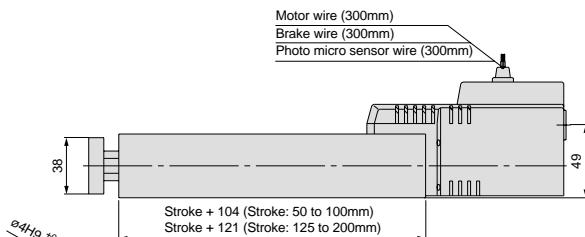


Cross section BB

Brake electrical circuit

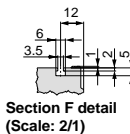


Section C detail (Scale: 2/1)

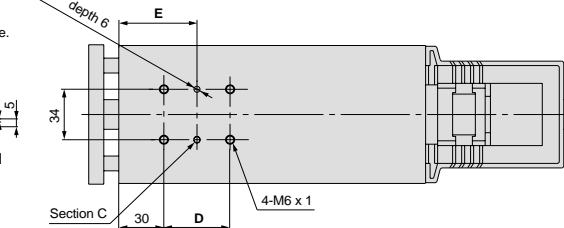


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB5BC-50□B	44	52
LXPB5BC-75□B		
LXPB5BC-100□B		
LXPB5BC-125□B		
LXPB5BC-150□B	120	90
LXPB5BC-175□B		
LXPB5BC-200□B		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

For transfer load of 2.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

Refer to page 303 for acceleration time.

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	20	0.1	0.6	2.6	5.1	10.1
	30	0.1	0.4	1.7	3.4	6.7

5 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Ball Screw
ø8mm/5mm lead

How to Order

LXPB5 **BD** — Stroke **S** B — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

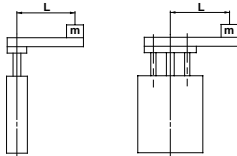
Standard stroke		mm	50	75	100	125	150	175	200	
Performance	Body weight	kg	2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)							
	Work load	kg	6 horizontal/5 vertical (Note 1)							
	Speed	mm/s	to 80 (Note 2)							
	Positioning repeatability	mm	±0.03							
Main parts	Motor	5 phase stepper motor (with brake)								
	Lead screw	Ball screw ø8mm, 5mm lead								
	Guide	Ball bushing								
	Electromagnetic brake	Model	De-energized operating type							
		Static torque	0.1N·m or more							
Rated voltage		24VDC ±5%								
	Power consumption	5W								
Home position switch	Model	Photo micro sensor EE-SX673								
Driver	Model	LC6D-507AD (Refer to page 306 for details.)								

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

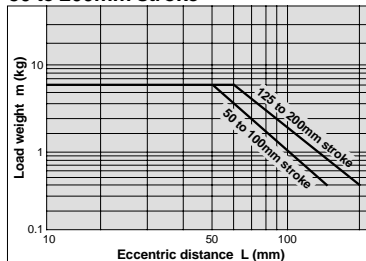
Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

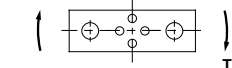
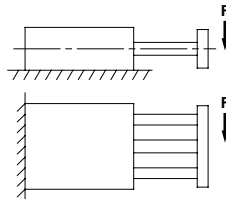
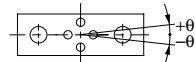


Plate non-rotating accuracy (θ)

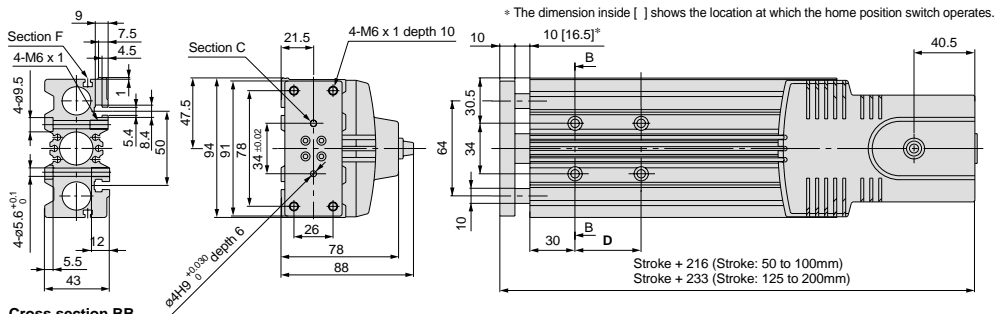
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

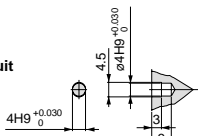
Dimensions/LXPB5BD

Scale: 30%



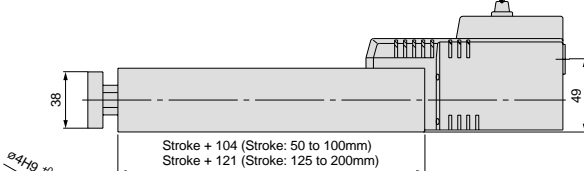
Cross section BB

Brake electrical circuit



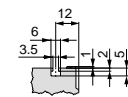
Section C detail (Scale: 2/1)

Motor wire (300mm)
Brake wire (300mm)
Photo micro sensor wire (300mm)

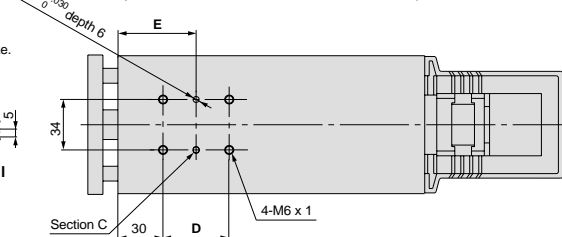


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB5BD-50□B	44	52
LXPB5BD-75□B		
LXPB5BD-100□B		
LXPB5BD-125□B	120	90
LXPB5BD-150□B		
LXPB5BD-175□B		
LXPB5BD-200□B		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 5kg

		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 2.5kg

		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series LXP

Ball Bushing

Slide Screw
ø8mm/6mm lead

How to Order

LXPB5 SA — Stroke **S** B — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Refer to the table on the right for auto switch part numbers.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

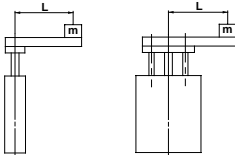
		Standard stroke	mm	50	75	100	125	150	175	200	
Performance	Body weight	kg		2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)								
	Work load	kg	4 horizontal/4 vertical Note 1)								
	Speed	mm/s	to 100 Note 2)								
	Positioning repeatability	mm	±0.05								
Main parts	Motor	5 phase stepper motor (with brake)									
	Lead screw	Slide screw ø8mm, 6mm lead									
	Guide	Ball bushing									
	Electromagnetic brake	Model	De-energized operating type								
		Static torque	0.1N·m or more								
Rated voltage		24VDC ±5%									
Power consumption	5W										
Home position switch	Model	Photo micro sensor EE-SX673									
Driver	Model	LC6D-507AD (Refer to page 306 for details.)									

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

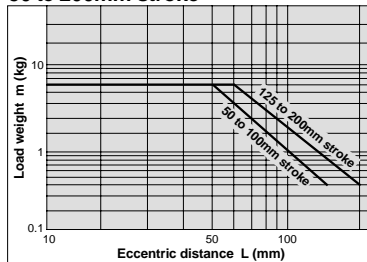
Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

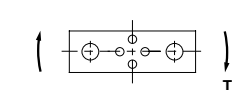
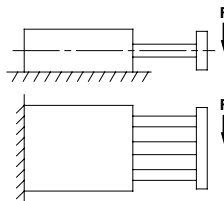
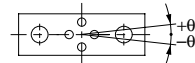


Plate non-rotating accuracy (θ)

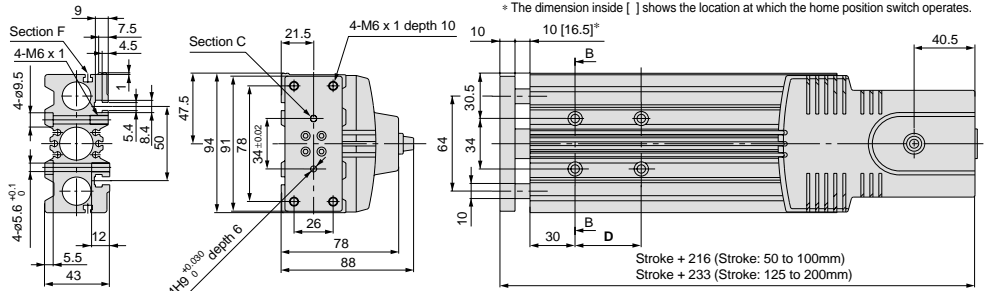
Non-rotating accuracy (θ)
±0.09°



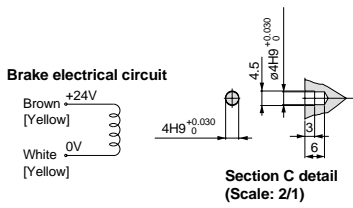
Refer to page 304 for deflection data.

Dimensions/LXPB5SA

Scale: 30%

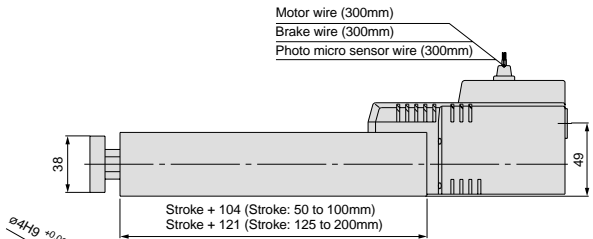


Cross section BB



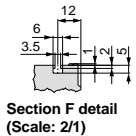
Brake electrical circuit

Section C detail (Scale: 2/1)

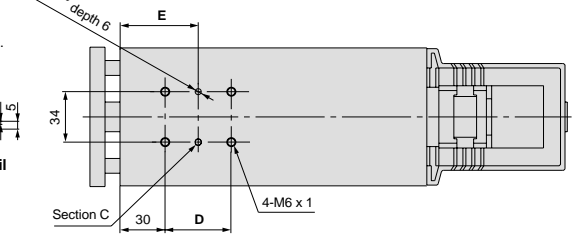


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB5SA-50□B	44	52
LXPB5SA-75□B		
LXPB5SA-100□B		
LXPB5SA-125□B	120	90
LXPB5SA-150□B		
LXPB5SA-175□B		
LXPB5SA-200□B		



Section F detail (Scale: 2/1)



Refer to page 300 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

For transfer load of 4kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.3	0.7	1.2	2.2

For transfer load of 2kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	20.1
	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1

Refer to page 302 for acceleration time.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

5 Phase Stepper Motor

With Motor Brake

Guide Rod Type

Series **LXP**

Ball Bushing

Slide Screw

∅8mm/12mm lead

How to Order

LXPB5 SB — Stroke **S** **B** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch type

Nil	None
-----	------

Refer to the table on the right for auto switch part numbers.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Specifications

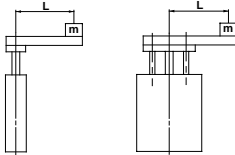
		Standard stroke	mm	50	75	100	125	150	175	200	
Performance	Body weight	kg		2.2	2.4	2.5	2.8	3.0	3.1	3.3	
	Operating temperature range	°C	5 to 40 (with no condensation)								
	Work load	kg	2 horizontal/2 vertical <small>Note 1)</small>								
	Speed	mm/s	to 200 <small>Note 2)</small>								
	Positioning repeatability	mm	±0.05								
Main parts	Motor	5 phase stepper motor (with brake)									
	Lead screw	Slide screw ∅8mm, 12mm lead									
	Guide	Ball bushing									
	Electromagnetic brake	Model	De-energized operating type								
		Static torque	0.1N·m or more								
Rated voltage		24VDC ±5%									
	Power consumption	5W									
Home position switch	Model	Photo micro sensor EE-SX673									
Driver	Model	LC6D-507AD (Refer to page 306 for details.)									

Note 1) Based on the operating conditions, establish a separate guide when exceeding the maximum allowable lateral load.

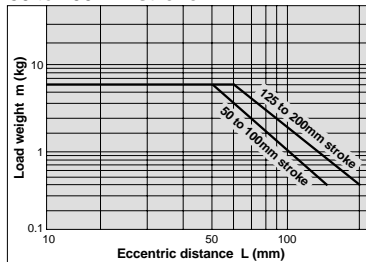
Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

Lifter Operation Range

This is the operating range for ball bushings. Use within the allowable thrust range.



50 to 200mm stroke



Operating Conditions

Allowable lateral load (F)

Stroke	Load (N)
50	42
75	42
100	40
125	42
150	32
175	24
200	17

Allowable plate rotation torque (T)

Stroke	Torque (N·m)
50	2.87
75	2.47
100	2.17
125	2.38
150	2.16
175	1.98
200	1.82

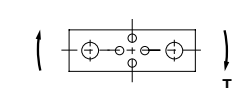
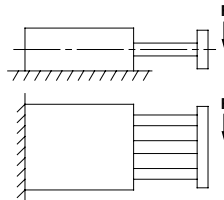
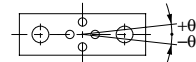


Plate non-rotating accuracy (θ)

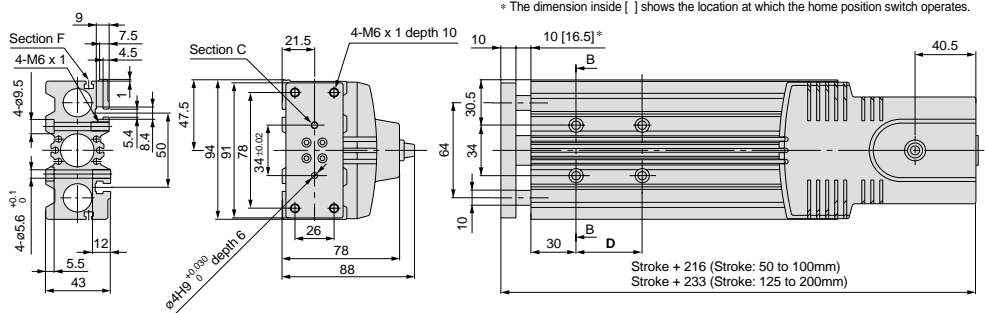
Non-rotating accuracy (θ)
±0.09°



Refer to page 304 for deflection data.

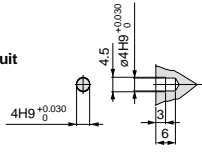
Dimensions/LXPB5SB

Scale: 30%



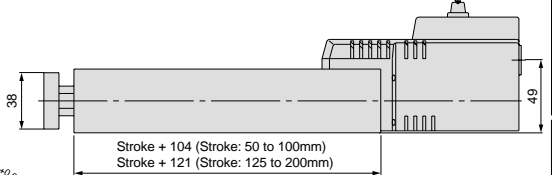
Cross section BB

Brake electrical circuit



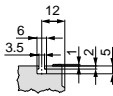
Section C detail (Scale: 2/1)

Motor wire (300mm)
Brake wire (300mm)
Photo micro sensor wire (300mm)

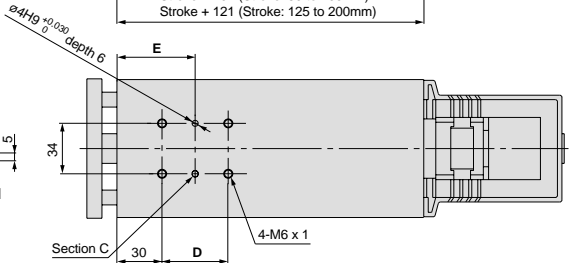


Note) A contact protection circuit is required when connecting a brake.

Model	D	E
LXPB5SB-50□B	44	52
LXPB5SB-75□B		
LXPB5SB-100□B		
LXPB5SB-125□B	120	90
LXPB5SB-150□B		
LXPB5SB-175□B		
LXPB5SB-200□B		



Section F detail (Scale: 2/1)



Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

For transfer load of 2kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.2	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.2	0.4	0.6	1.1

For transfer load of 1kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1
	100	0.1	0.2	0.6	1.1	2.1
	200	0.1	0.1	0.3	0.6	1.1

Refer to page 302 for acceleration time.

2 Phase Stepper Motor

High Rigidity Slide Table Type

Without Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Ball Screw
ø8mm/2mm lead

How to Order

LXSH2 **BC** **Stroke** **S** **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN	With sensor rail, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Performance	Standard stroke	mm	50	75	100	125	150
	Body weight	kg	1.9	2.1	2.3	2.5	2.7
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	10 (4) horizontal/5 (4) vertical (Note 1)				
	Speed	mm/s	to 30 (Note 2)				
Main parts	Motor	2 phase stepper motor (without brake)					
	Lead screw	Ball screw ø8mm, 2mm lead					
	Guide	High rigidity direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-220AD (Refer to page 306 for details.)					
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

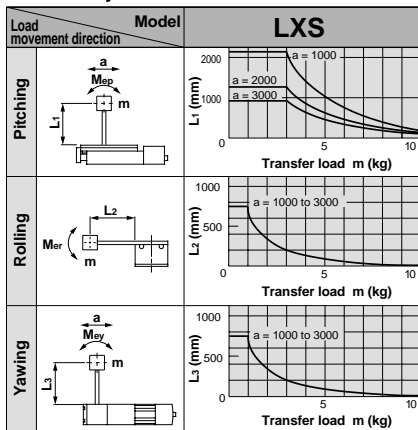
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

Allowable dynamic moment



Refer to page 304 for deflection data.

2 Phase Stepper Motor

High Rigidity Slide Table Type

Without Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Ball Screw

∅8mm/5mm lead

How to Order

LXSH2 **BD** — **Stroke** **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil				
Without auto switch				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN				
With sensor rail, without proximity switch				
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7	
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10 (4) horizontal/5 (4) vertical (Note 1)					
	Speed	mm/s	to 80 (Note 2)					
	Positioning repeatability	mm	±0.03					
Main parts	Motor	2 phase stepper motor (without brake)						
	Lead screw	Ball screw ∅8mm, 5mm lead						
	Guide	High rigidity direct acting guide						
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-220AD (Refer to page 306 for details.)						
Positioning driver	Model	LC6C-220AD (Refer to page 309 details.)						

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

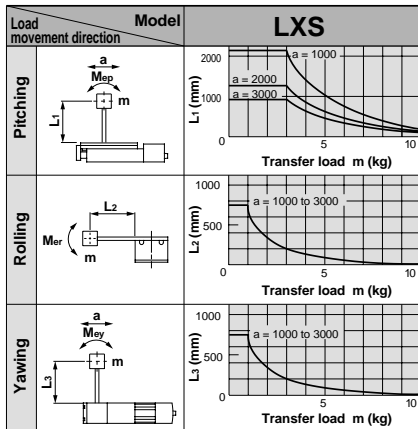
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

Allowable dynamic moment



Refer to page 304 for deflection data.

2 Phase Stepper Motor

High Rigidity Slide Table Type

High Rigidity
Direct Acting
Guide

Slide Screw

∅8mm/6mm lead

Without Motor Brake

Series LXS

How to Order

LXSH2 SA Stroke S F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.

Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7	
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	9 (4) horizontal/4 (4) vertical (Note 1)					
	Speed	mm/s	to 100 (Note 2)					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	2 phase stepper motor (without brake)						
	Lead screw	Slide screw ∅8mm, 6mm lead						
	Guide	High rigidity direct acting guide						
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-220AD (Refer to page 306 for details.)						
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)						

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

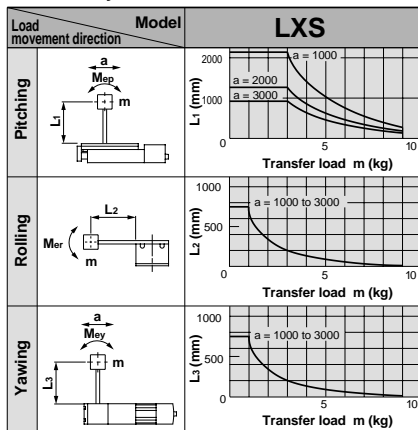
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

- m : Transfer load (kg)
- L : Overhang to work piece center of gravity (mm)
- a : Work piece acceleration (mm/sec²)
- Me : Dynamic moment

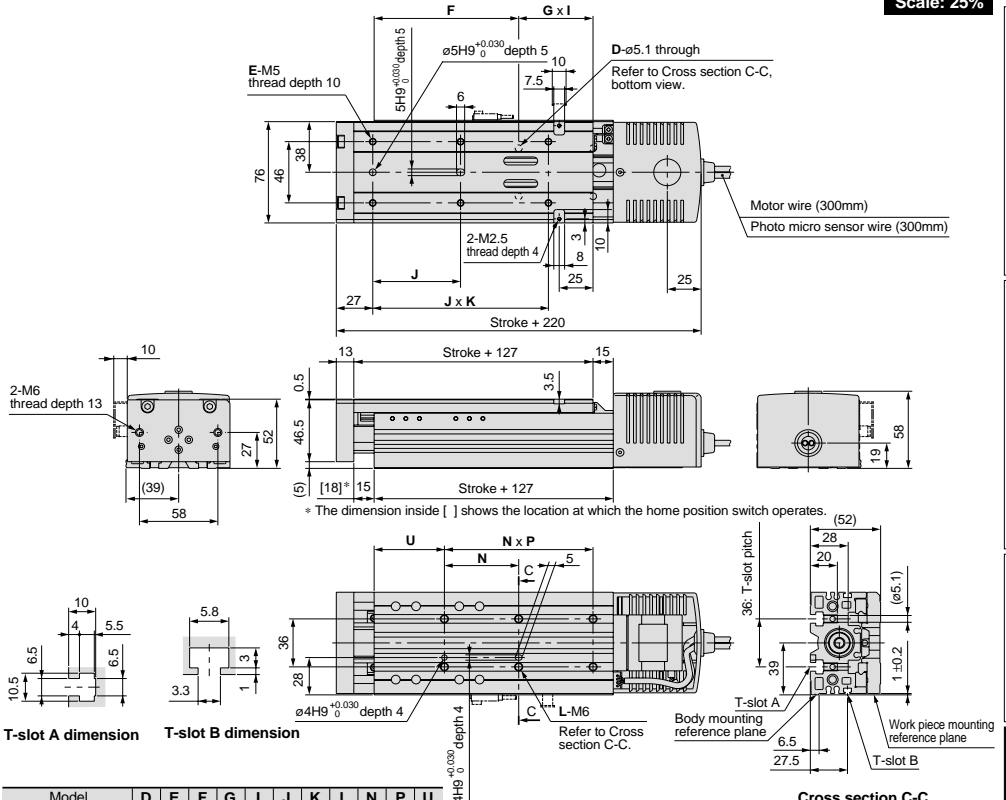
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH2SA

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2SA-50	4	6	107	55	1	65	2	6	55	2	52
LXSH2SA-75	4	6	112	65	1	75	2	6	65	2	47
LXSH2SA-100	4	8	122	75	1	65	3	6	75	2	47
LXSH2SA-125	4	8	132	85	1	70	3	6	85	2	47
LXSH2SA-150	6	8	112	65	2	75	3	8	65	3	47

Cross section C-C

Refer to page 301 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

For transfer load of 9kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

For transfer load of 4.5kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

Refer to page 302 for acceleration time.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

2 Phase Stepper Motor

High Rigidity Slide Table Type

Without Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Slide Screw

∅8mm/12mm lead

How to Order

LXSH2 **SB** — **Stroke** **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Specifications

	Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	4.5 (4) horizontal/2 (2) vertical (Note 1)				
	Speed	mm/s	to 200 (Note 2)				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	2 phase stepper motor (without brake)					
	Lead screw	Slide screw ∅8mm, 12mm lead					
	Guide	High rigidity direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-220AD (Refer to page 306 for details.)					
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)					

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

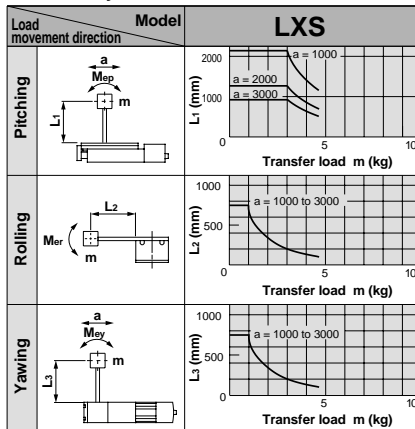
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

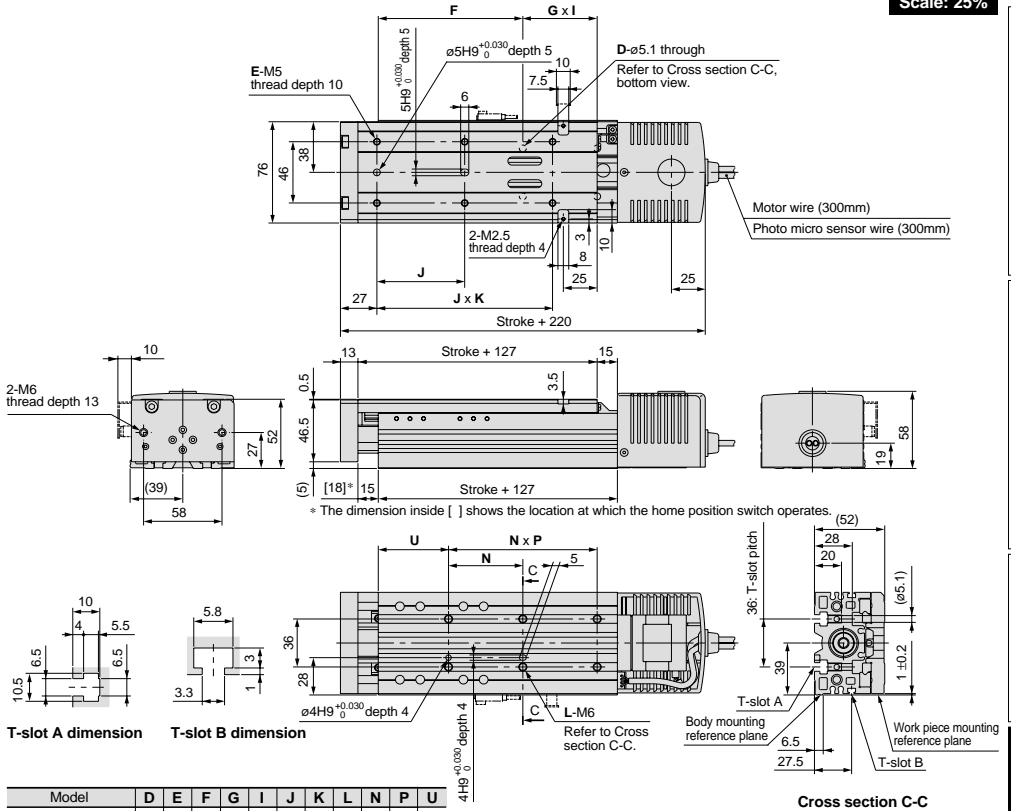
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH2SB

Scale: 25%



Cross section C-C

Refer to page 301 for mounting.

Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2SB-50	4	6	107	55	1	65	2	6	55	2	52
LXSH2SB-75	4	6	112	65	1	75	2	6	65	2	47
LXSH2SB-100	4	8	122	75	1	65	3	6	75	2	47
LXSH2SB-125	4	8	132	85	1	70	3	6	85	2	47
LXSH2SB-150	6	8	112	65	2	75	3	8	65	3	47

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

For transfer load of 2.5kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

Refer to page 302 for acceleration time.

For transfer load of 4.5kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.2	0.4	0.6	0.9

2 Phase Stepper Motor

High Rigidity Slide Table Type

With Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Ball Screw
ø8mm/2mm lead

How to Order

LXSH2 **BC** — Stroke **S** **B** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg		2.1	2.3	2.5	2.7	2.9
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10 (4) horizontal/5 (4) vertical ^{Note 1)}					
	Speed	mm/s	to 30 ^{Note 2)}					
	Positioning repeatability	mm	±0.03					
Main parts	Motor	2 phase stepper motor (with brake)						
	Lead screw	Ball screw ø8mm, 2mm lead						
	Guide	High rigidity direct acting guide						
	Electromagnetic brake	Model	De-energized operating type					
		Static torque	0.1N·m or more					
Rated voltage		24VDC ±5%						
	Power consumption	5W						
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-220AD (Refer to page 306 for details.)						
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)						

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

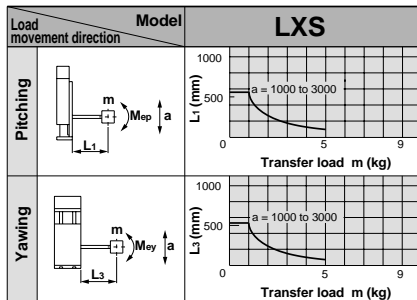
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

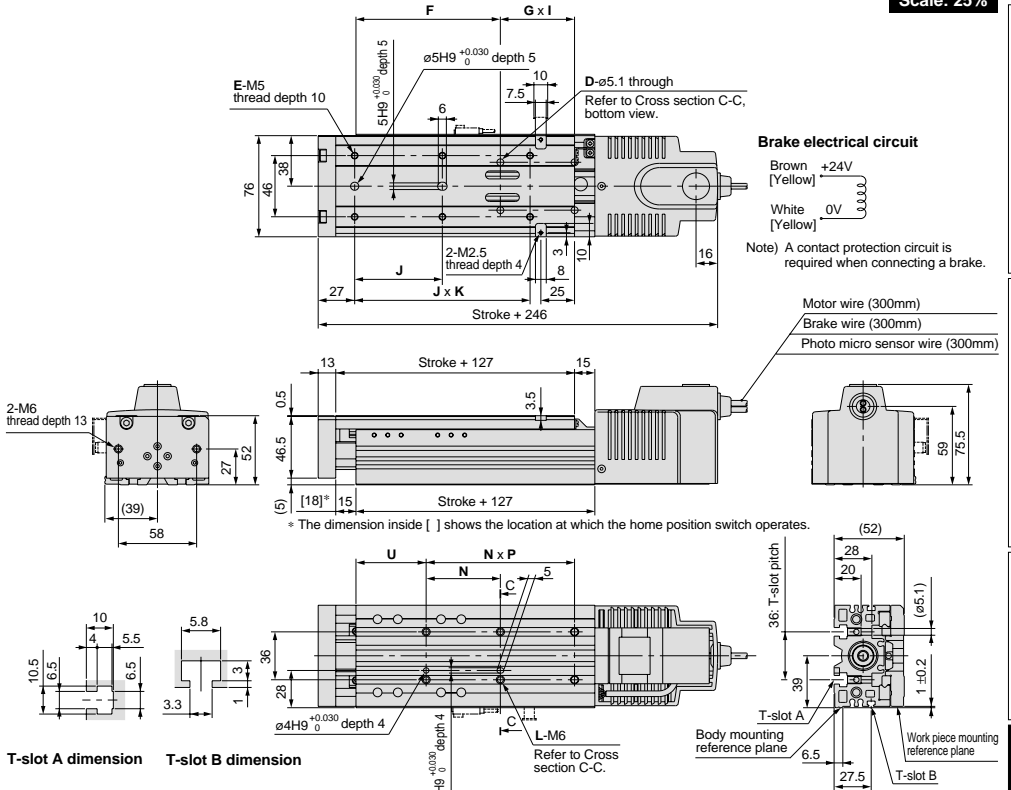
m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

Allowable dynamic moment



Dimensions/LXSH2BC

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2BC-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH2BC-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH2BC-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH2BC-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH2BC-150□B	6	8	112	65	2	75	3	8	65	3	47

Cross section C-C

Refer to page 301 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 2.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

Refer to page 303 for acceleration time.

2 Phase Stepper Motor

High Rigidity Slide Table Type

With Motor Brake

Series LX_S

High Rigidity
Direct Acting
Guide

Ball Screw

∅8mm/5mm lead

How to Order

LXSH2 **BD** - Stroke **S** B - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Without auto switch				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
With sensor rail, without proximity switch				
GN				
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/PNP	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/PNP	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg		2.1	2.3	2.5	2.7	2.9
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	10 (4) horizontal/5 (4) vertical <small>Note 1</small>					
	Speed	mm/s	to 80 <small>Note 2</small>					
	Positioning repeatability	mm	±0.03					
Main parts	Motor	2 phase stepper motor (with brake)						
	Lead screw	Ball screw ∅8mm, 5mm lead						
	Guide	High rigidity direct acting guide						
	Electromagnetic brake	Model	De-energized operating type					
		Static torque	0.1N·m or more					
Rated voltage		24VDC ±5%						
	Power consumption	5 W						
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-220AD (Refer to page 306 for details.)						
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)						

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

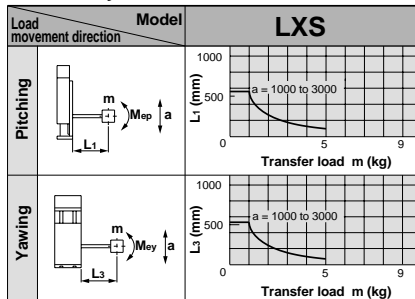
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

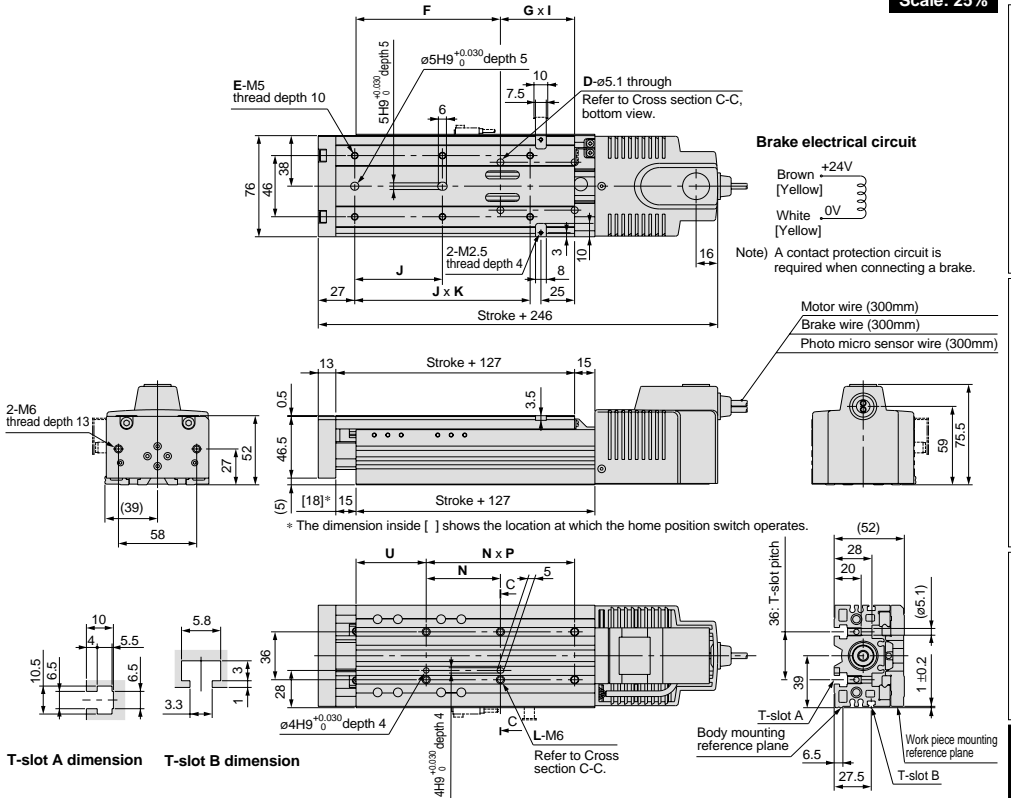
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH2BD

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2BD-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH2BD-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH2BD-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH2BD-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH2BD-150□B	6	8	112	65	2	75	3	8	65	3	47

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	40	0.1	0.3	1.3	2.6	3.8
	80	0.1	0.2	0.7	1.3	1.9

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	200
Speed (mm/s)	10	0.1	1	5	10	20
	40	0.1	0.3	1.3	2.6	5.1
	80	0.1	0.2	0.7	1.3	2.6

For transfer load of 2.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	100
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	40	0.1	0.3	1.3	2.6	3.8
	80	0.1	0.2	0.7	1.3	2.0

Refer to page 303 for acceleration time.

2 Phase Stepper Motor

High Rigidity Slide Table Type

With Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Slide Screw
ø8mm/6mm lead

How to Order

LXSH2 **SA** - Stroke **S** **B** - **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil				
Without auto switch				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN				
With sensor rail, without proximity switch				
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150	
Performance	Body weight	kg		2.1	2.3	2.5	2.7	2.9	
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	9 (4) horizontal/4 (4) vertical (Note 1)						
	Speed	mm/s	to 100 (Note 2)						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	2 phase stepper motor (with brake)							
	Lead screw	Slide screw ø8mm, 6mm lead							
	Guide	High rigidity direct acting guide							
	Electromagnetic brake	Model	De-energized operating type						
		Static torque	0.1N·m or more						
		Rated voltage	24VDC ±5%						
Power consumption		5W							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-220AD (Refer to page 306 for details.)							
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)							

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

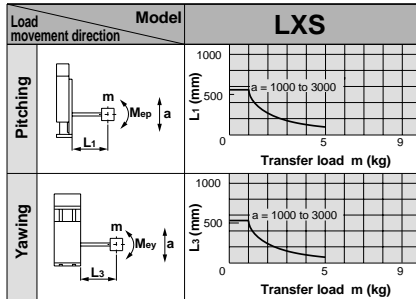
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

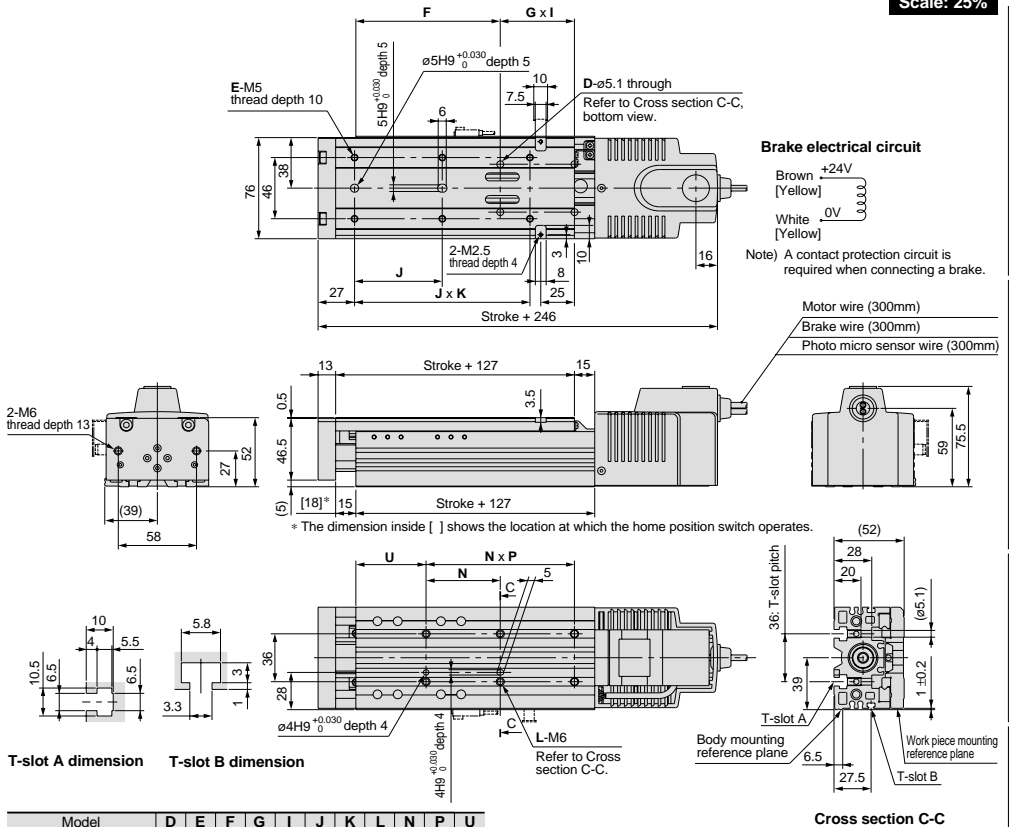
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH2SA

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2SA-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH2SA-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH2SA-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH2SA-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH2SA-150□B	6	8	112	65	2	75	3	8	65	3	47

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

For transfer load of 4kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

For transfer load of 2kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	50	0.1	0.3	1.1	2.1	3.1	
	100	0.1	0.2	0.6	1.1	1.6	

Refer to page 302 for acceleration time.

2 Phase Stepper Motor

High Rigidity Slide Table Type

With Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Slide Screw

ø8mm/12mm lead

How to Order

LXSH2 **SB** - Stroke **S** **B** - **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Without auto switch				
Nil				
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
With sensor rail, without proximity switch				
GN				
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg		2.1	2.3	2.5	2.7	2.9
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	4.5 (4) horizontal/2 (2) vertical <small>Note 1</small>					
	Speed	mm/s	to 200 <small>Note 2</small>					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	2 phase stepper motor (with brake)						
	Lead screw	Slide screw ø8mm, 12mm lead						
	Guide	High rigidity direct acting guide						
	Electromagnetic brake	Model	De-energized operating type					
		Static torque	0.1N·m or more					
Rated voltage		24VDC ±5%						
Power consumption	5W							
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-220AD (Refer to page 306 for details.)						
Positioning driver	Model	LC6C-220AD (Refer to page 309 for details.)						

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

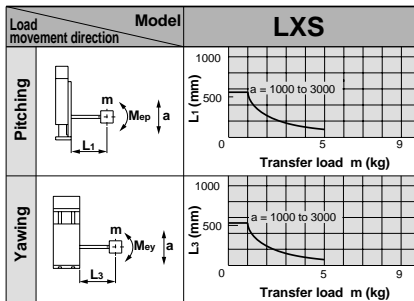
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

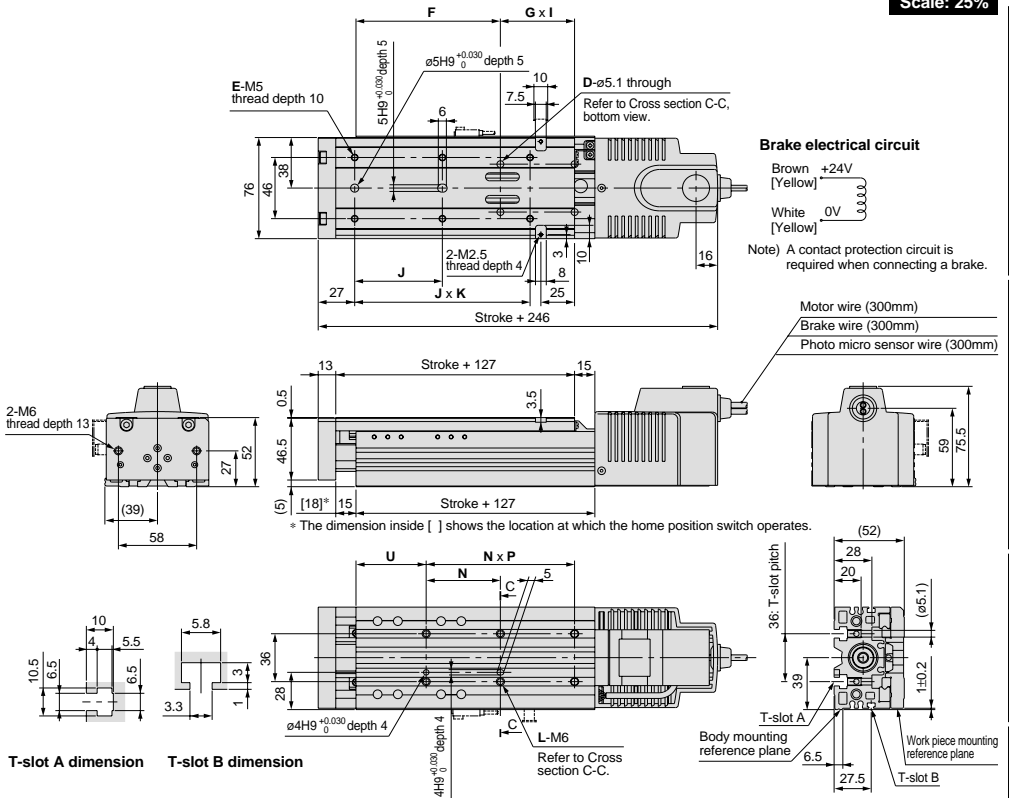
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH2SB

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH2SB-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH2SB-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH2SB-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH2SB-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH2SB-150□B	6	8	112	65	2	75	3	8	65	3	47

Cross section C-C

Refer to page 301 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1	
	100	0.1	0.2	0.6	1.1	2.1	
	200	0.1	0.1	0.3	0.6	1.1	

For transfer load of 2kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1	
	100	0.1	0.2	0.6	1.1	2.1	
	200	0.1	0.2	0.4	0.6	1.1	

For transfer load of 1kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	50	0.1	0.3	1.1	2.1	4.1	
	100	0.1	0.2	0.6	1.1	2.1	
	200	0.1	0.1	0.3	0.6	1.1	

Refer to page 302 for acceleration time.

How to Order

LXSH5 **BC** — **Stroke** **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
:	:
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Standard stroke		mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7
	Operating temperature range °C		5 to 40 (with no condensation)				
	Work load	kg	10 (4) horizontal/5 (4) vertical Note 1)				
	Speed	mm/s	to 30 Note 2)				
	Positioning repeatability	mm	±0.03				
Main parts	Motor	5 phase stepper motor (without brake)					
	Lead screw	Ball screw ø8mm, 2mm lead					
	Guide	High rigidity direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 2mm/s or more as a guide for speed.

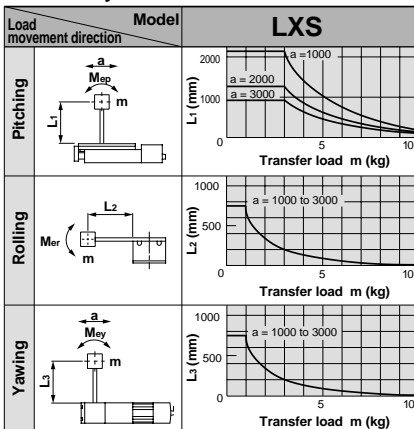
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

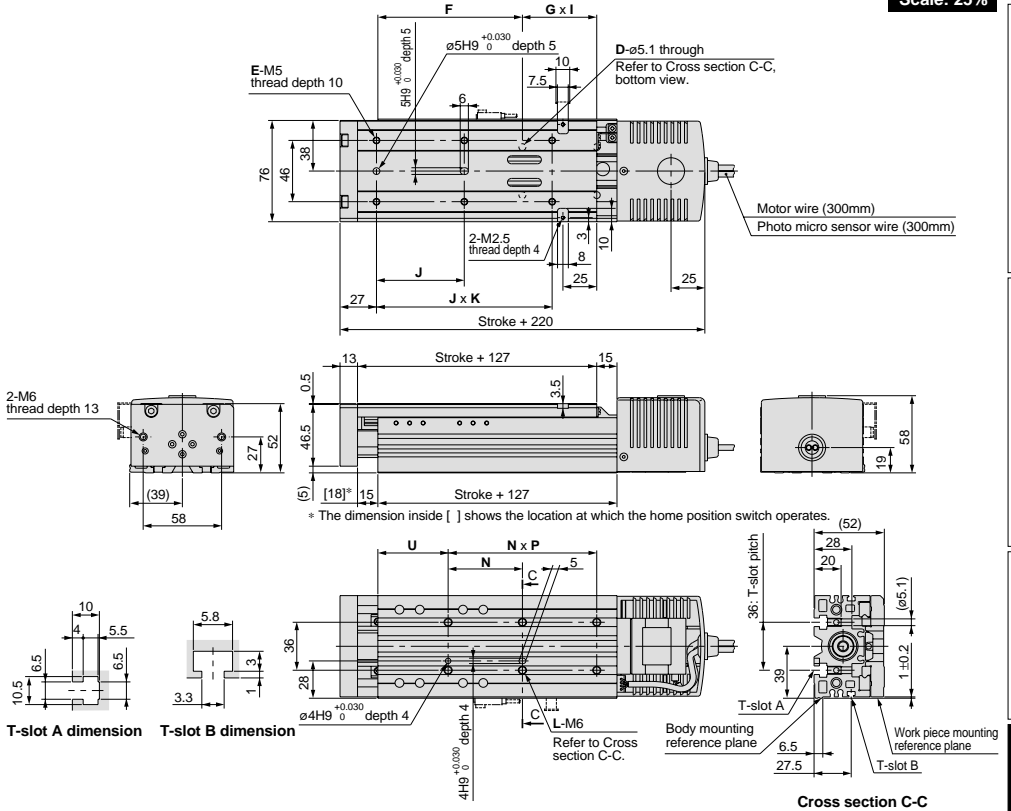
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5BC

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5BC-50	4	6	107	55	1	65	2	6	55	2	52
LXSH5BC-75	4	6	112	65	1	75	2	6	65	2	47
LXSH5BC-100	4	8	122	75	1	65	3	6	75	2	47
LXSH5BC-125	4	8	132	85	1	70	3	6	85	2	47
LXSH5BC-150	6	8	112	65	2	75	3	8	65	3	47

Refer to page 301 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 10kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

Refer to page 303 for acceleration time.

How to Order

LXSH5 **BD** - Stroke **S** - F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Standard stroke		mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	10 (4) horizontal/5 (4) vertical <small>Note 1</small>				
	Speed	mm/s	to 80 <small>Note 2</small>				
	Positioning repeatability	mm	±0.03				
Main parts	Motor	5 phase stepper motor (without brake)					
	Lead screw	Ball screw ∅8mm, 5mm lead					
	Guide	High rigidity direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 5mm/s or more as a guide for speed.

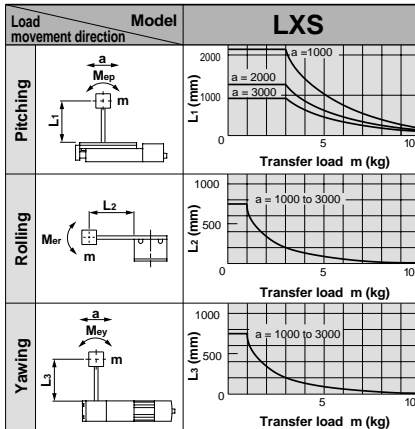
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

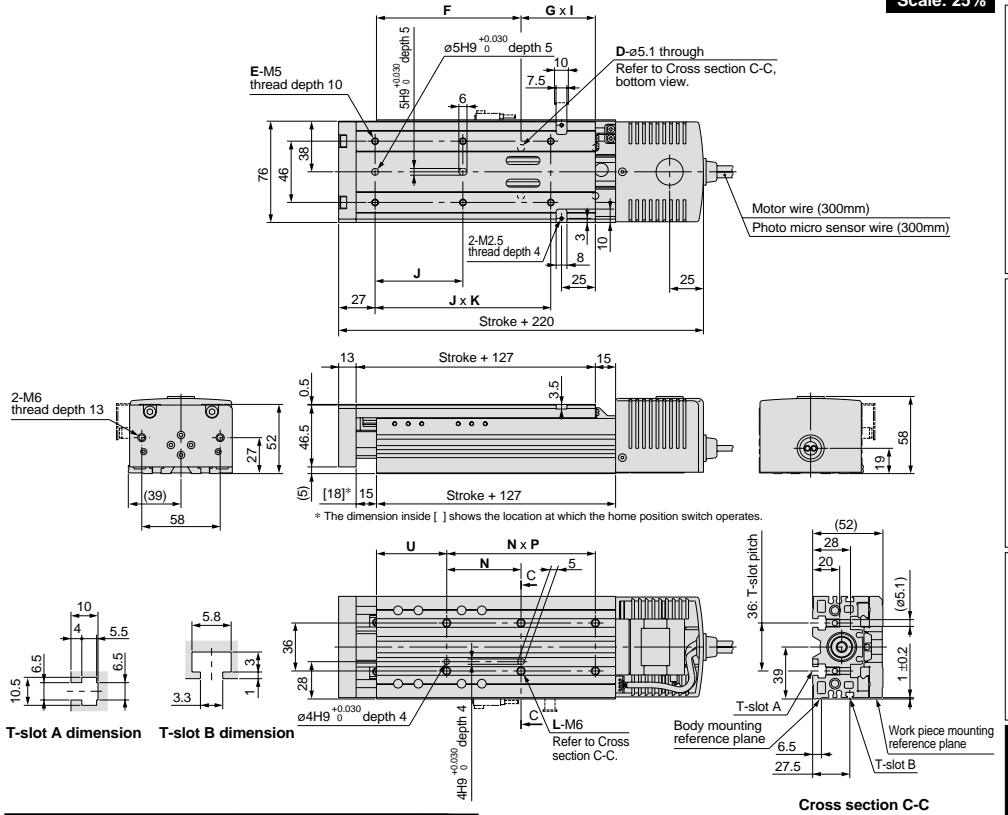
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5BD

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5BD-50	4	6	107	55	1	65	2	6	55	2	52
LXSH5BD-75	4	6	112	65	1	75	2	6	65	2	47
LXSH5BD-100	4	8	122	75	1	65	3	6	75	2	47
LXSH5BD-125	4	8	132	85	1	70	3	6	85	2	47
LXSH5BD-150	6	8	112	65	2	75	3	8	65	3	47

Cross section C-C

Refer to page 301 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

		Positioning time (sec)					
Positioning distance (mm)		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	1.9	

For transfer load of 10kg

		Positioning time (sec)					
Positioning distance (mm)		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	2.0	

For transfer load of 5kg

		Positioning time (sec)					
Positioning distance (mm)		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	2.0	

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

High Rigidity Slide Table Type

High Rigidity
Direct Acting
Guide

Slide Screw

∅8mm/6mm lead

Without Motor Brake

Series LXS

How to Order

LXSH5 SA Stroke S F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

Specifications

Standard stroke		mm	50	75	100	125	150
Performance	Body weight	kg	1.9	2.1	2.3	2.5	2.7
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	6 (4) horizontal/2 (2) vertical (Note 1)				
	Speed	mm/s	to 100 (Note 2)				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	5 phase stepper motor (without brake)					
	Lead screw	Slide screw ∅8mm, 6mm lead					
	Guide	High rigidity direct acting guide					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

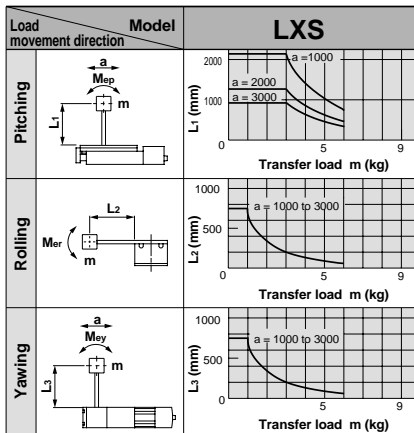
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

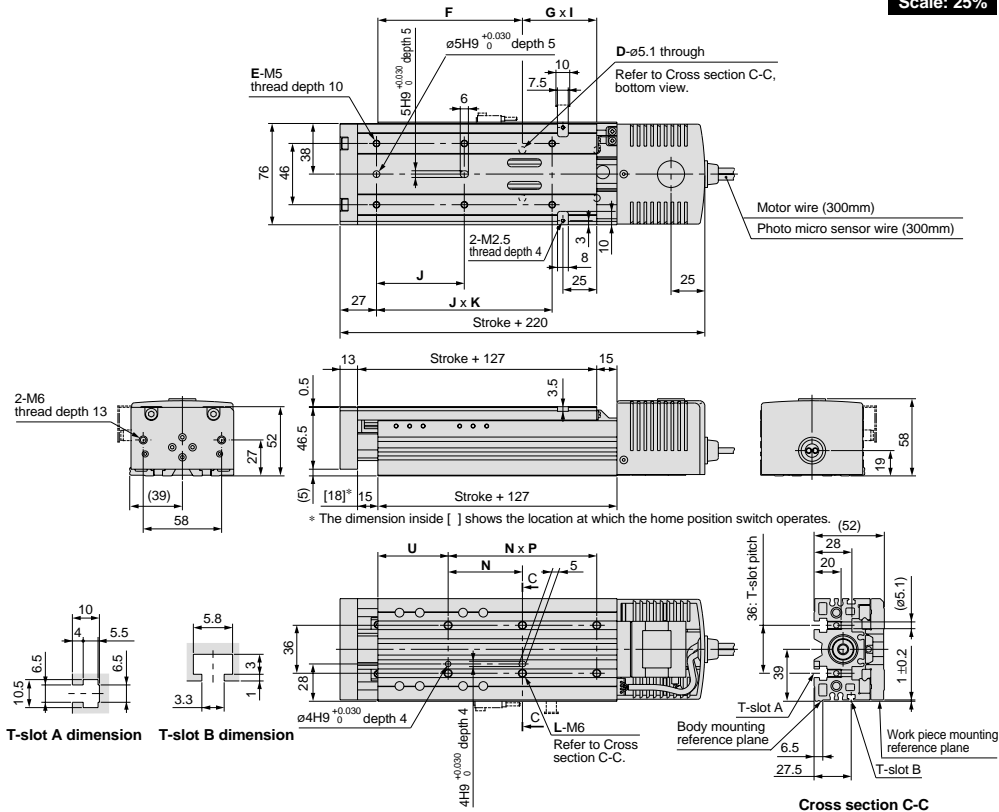
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5SA

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5SA-50	4	6	107	55	1	65	2	6	55	2	52
LXSH5SA-75	4	6	112	65	1	75	2	6	65	2	47
LXSH5SA-100	4	8	122	75	1	65	3	6	75	2	47
LXSH5SA-125	4	8	132	85	1	70	3	6	85	2	47
LXSH5SA-150	6	8	112	65	2	75	3	8	65	3	47

Refer to page 301 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

For transfer load of 6kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

Refer to page 302 for acceleration time.

5 Phase Stepper Motor Without Motor Brake

High Rigidity Slide Table Type

Series LXS

High Rigidity
Direct Acting
Guide

Slide Screw
ø8mm/12mm lead

How to Order

LXSH5 SB — **Stroke** **S** — **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) **F9N1G2**

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FBI	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150
Performance	Body weight	kg		1.9	2.1	2.3	2.5	2.7
	Operating temperature range	°C	5 to 40 (with no condensation)					
	Work load	kg	3 (3) horizontal/1 (1) vertical ^{Note 1)}					
	Speed	mm/s	to 200 ^{Note 2)}					
	Positioning repeatability	mm	±0.05					
Main parts	Motor	5 phase stepper motor (without brake)						
	Lead screw	Slide screw ø8mm, 12mm lead						
	Guide	High rigidity direct acting guide						
Home position switch	Model	Photo micro sensor EE-SX673						
Driver	Model	LC6D-507AD (Refer to page 306 for details.)						

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

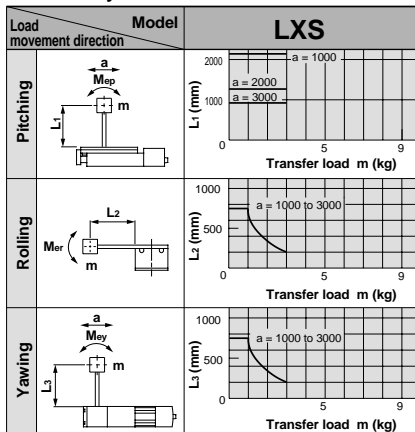
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Rolling	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

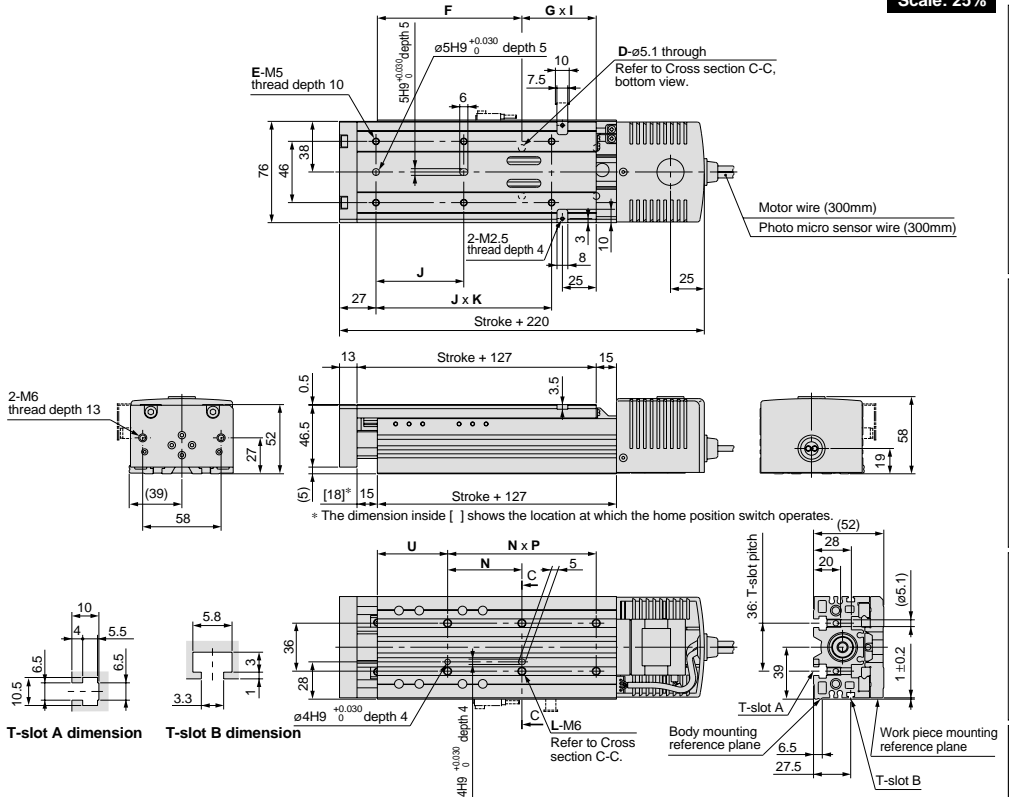
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5SB

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5SB-50	4	6	107	55	1	65	2	6	55	2	52
LXSH5SB-75	4	6	112	65	1	75	2	6	65	2	47
LXSH5SB-100	4	8	122	75	1	65	3	6	75	2	47
LXSH5SB-125	4	8	132	85	1	70	3	6	85	2	47
LXSH5SB-150	6	8	112	65	2	75	3	8	65	3	47

Cross section C-C

Refer to page 301 for mounting.

Positioning Time Guide (for Horizontal Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

For transfer load of 3kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.2	0.4	0.6	0.9

For transfer load of 1.5kg

Positioning distance (mm)		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

Refer to page 302 for acceleration time.

5 Phase Stepper Motor

High Rigidity Slide Table Type

High Rigidity
Direct Acting
Guide

Ball Screw

∅8mm/2mm lead

With Motor Brake

Series LXS

How to Order

LXSH5 **BC** - Stroke **S** B - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example: F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150	
Performance	Body weight	kg	2.1	2.3	2.5	2.7	2.9		
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	10 (4) horizontal/5 (4) vertical (Note 1)						
	Speed	mm/s	to 30 (Note 2)						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	5 phase stepper motor (with brake)							
	Lead screw	Ball screw ∅8mm, 2mm lead							
	Guide	High rigidity direct acting guide							
	Electromagnetic brake	Model	De-energized operating type						
		Static torque	0.1N·m or more						
Rated voltage		24VDC ±5%							
	Power consumption	5 W							
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-507AD (Refer to page 306 for details.)							

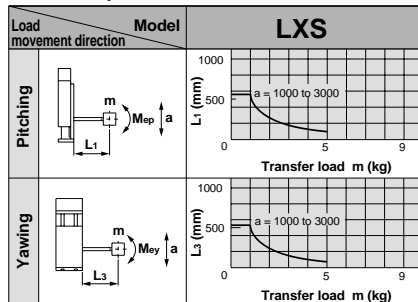
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me : Dynamic moment

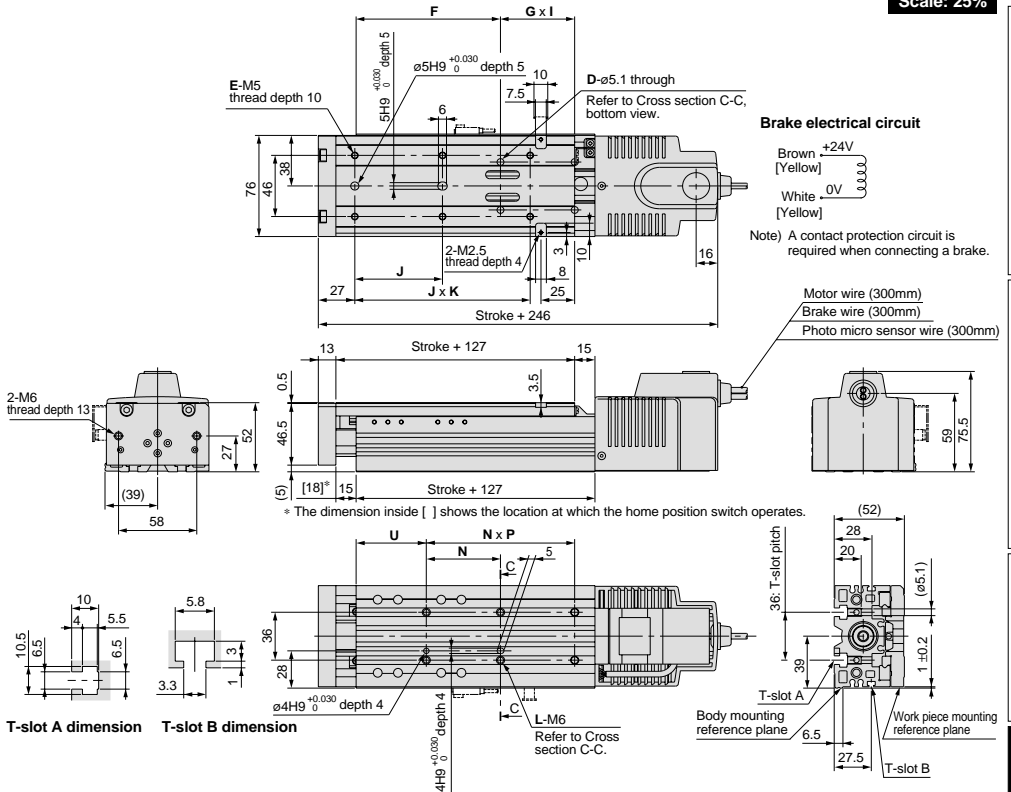
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5BC

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5BC-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH5BC-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH5BC-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH5BC-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH5BC-150□B	6	8	112	65	2	75	3	8	65	3	47

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 5kg

		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

For transfer load of 2.5kg

		Positioning time (sec)				
		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	20	0.1	0.6	2.6	5.1	7.6
	30	0.1	0.4	1.7	3.4	5.1

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

High Rigidity Slide Table Type

High Rigidity
Direct Acting
Guide

Ball Screw

∅8mm/5mm lead

With Motor Brake

Series LXS

How to Order

LXSH5 **BD** - Stroke **S** **B** - F9N **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

		Standard stroke	mm	50	75	100	125	150	
Performance	Body weight	kg	2.1	2.3	2.5	2.7	2.9		
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	10 (4) horizontal/5 (4) vertical <small>Note 1)</small>						
	Speed	mm/s	to 80 <small>Note 2)</small>						
	Positioning repeatability	mm	±0.03						
Main parts	Motor	5 phase stepper motor (with brake)							
	Lead screw	Ball screw ∅8mm, 5mm lead							
	Guide	High rigidity direct acting guide							
	Electromagnetic brake	Model	De-energized operating type						
		Static torque	0.1N·m or more						
		Rated voltage	24VDC ±5%						
Power consumption	5W								
Home position switch	Model	Photo micro sensor EE-SX673							
Driver	Model	LC6D-507AD (Refer to page 306 for details.)							

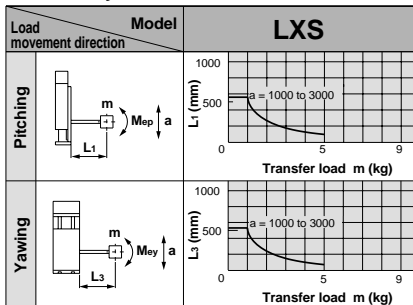
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

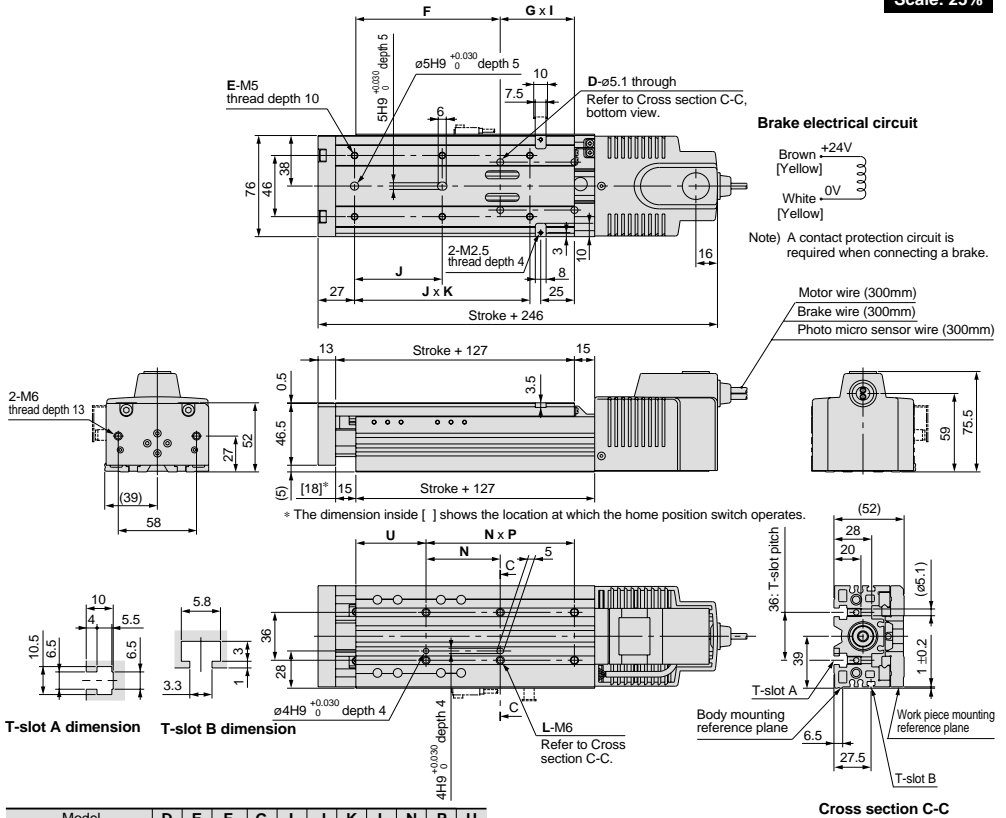
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5BD

Scale: 25%



Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5BD-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH5BD-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH5BD-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH5BD-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH5BD-150□B	6	8	112	65	2	75	3	8	65	3	47

Refer to page 301 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	1.9	

For transfer load of 5kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	2.0	

For transfer load of 2.5kg

Positioning distance (mm)		Positioning time (sec)					
		1	10	50	100	150	
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1	
	40	0.1	0.3	1.3	2.6	3.8	
	80	0.1	0.2	0.7	1.3	2.0	

Refer to page 303 for acceleration time.

5 Phase Stepper Motor

High Rigidity Slide Table Type

With Motor Brake

Series LXS

High Rigidity
Direct Acting
Guide

Slide Screw
ø8mm/6mm lead

How to Order

LXSH5 SA Stroke SB F9N 1

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/PNP	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/PNP	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Standard stroke		mm	50	75	100	125	150
Performance	Body weight	kg	2.1	2.3	2.5	2.7	2.9
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	6 (4) horizontal/2 (2) vertical (Note 1)				
	Speed	mm/s	to 100 (Note 2)				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	5 phase stepper motor (with brake)					
	Lead screw	Slide screw ø8mm, 6mm lead					
	Guide	High rigidity direct acting guide					
	Electromagnetic brake	Model	De-energized operating type				
		Static torque	0.1N·m or more				
Rated voltage		24VDC ±5%					
Power consumption		5W					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-507AD (Refer to page 306 for details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 6mm/s or more as a guide for speed.

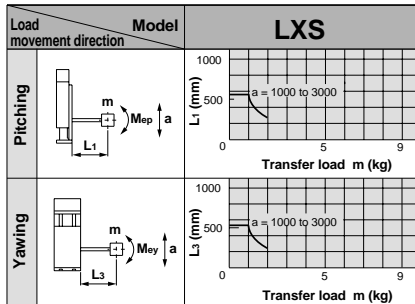
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

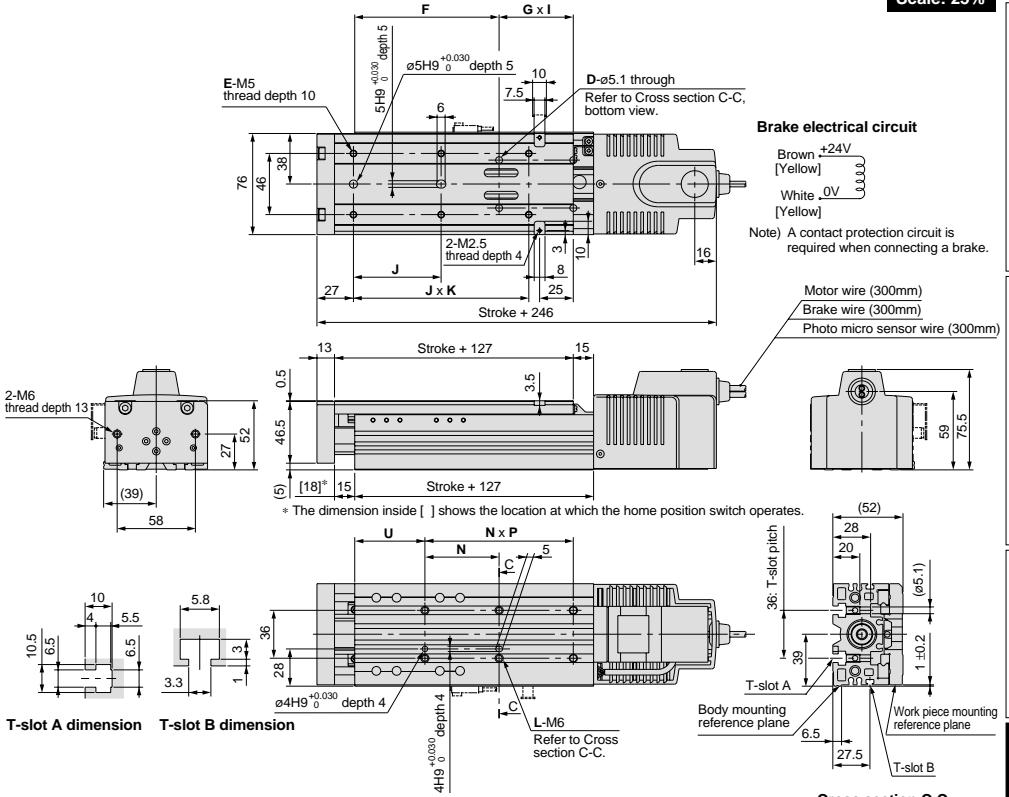
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5SA

Scale: 25%



T-slot A dimension

T-slot B dimension

Cross section C-C

Model	D	E	F	G	I	J	K	L	N	P	U
LXSH5SA-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH5SA-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH5SA-100□B	4	8	122	75	1	85	3	6	75	2	47
LXSH5SA-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH5SA-150□B	6	8	112	65	2	75	3	8	65	3	47

Refer to page 301 for mounting.

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

For transfer load of 2kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

For transfer load of 1kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	10	0.2	1.1	5.1	10.1	15.1
	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6

Refer to page 302 for acceleration time.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

5 Phase Stepper Motor

High Rigidity Slide Table Type

High Rigidity
Direct Acting
Guide

Slide Screw

ø8mm/12mm lead

With Motor Brake

Series LXS

How to Order

LXSH5 **SB** - Stroke **S** B - **F9N** **1**

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto/Proximity switch type

Nil	None
-----	------

Refer to the table on the right for auto/proximity switch part numbers.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number.
Example) F9N1G2

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Specifications

Standard stroke		mm	50	75	100	125	150
Performance	Body weight	kg	2.1	2.3	2.5	2.7	2.9
	Operating temperature range	°C	5 to 40 (with no condensation)				
	Work load	kg	3 (3) horizontal/1 (1) vertical (Note 1)				
	Speed	mm/s	to 200 (Note 2)				
	Positioning repeatability	mm	±0.05				
Main parts	Motor	5 phase stepper motor (with brake)					
	Lead screw	Slide screw ø8mm, 12mm lead					
	Guide	High rigidity direct acting guide					
	Electromagnetic brake	Model	De-energized operating type				
		Static torque	0.1N·m or more				
Rated voltage		24VDC ±5%					
Power consumption		5W					
Home position switch	Model	Photo micro sensor EE-SX673					
Driver	Model	LC6D-507AD (Refer to page 306 details.)					

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Note 2) Since vibration may increase with low speed operation, use 12mm/s or more as a guide for speed.

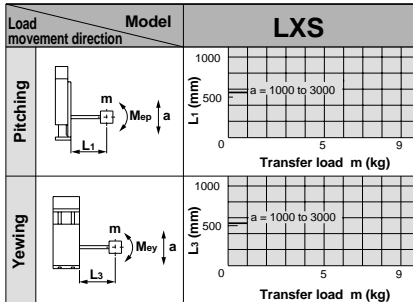
Allowable Moment (N·m)

Allowable static moment

Pitching	15.7
Yawing	7.84

m : Transfer load (kg)
L : Overhang to work piece center of gravity (mm)
a : Work piece acceleration (mm/sec²)
Me: Dynamic moment

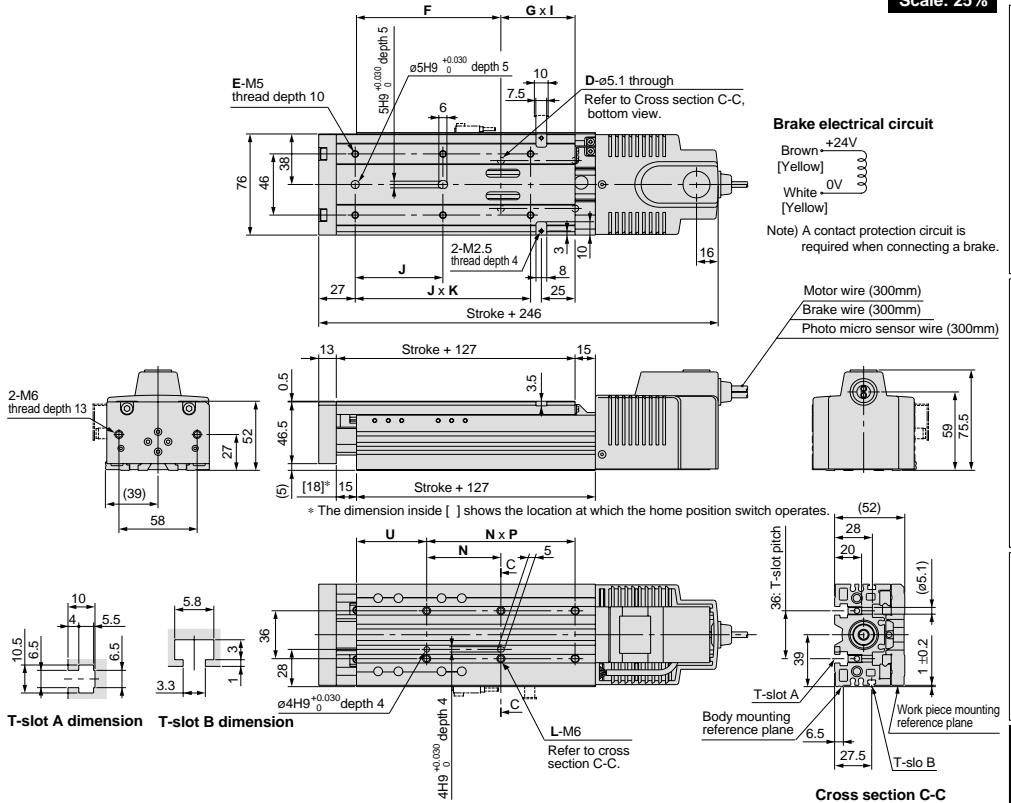
Allowable dynamic moment



Refer to page 304 for deflection data.

Dimensions/LXSH5SB

Scale: 25%



	D	E	F	G	I	J	K	L	N	P	U
LXSH5SB-50□B	4	6	107	55	1	65	2	6	55	2	52
LXSH5SB-75□B	4	6	112	65	1	75	2	6	65	2	47
LXSH5SB-100□B	4	8	122	75	1	65	3	6	75	2	47
LXSH5SB-125□B	4	8	132	85	1	70	3	6	85	2	47
LXSH5SB-150□B	6	8	112	65	2	75	3	8	65	3	47

Positioning Time Guide (for Vertical Mount)

For transfer load of 0kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

For transfer load of 1kg

		Positioning time (sec)				
Positioning distance (mm)		1	10	50	100	150
Speed (mm/s)	50	0.1	0.3	1.1	2.1	3.1
	100	0.1	0.2	0.6	1.1	1.6
	200	0.1	0.1	0.3	0.6	0.8

Refer to page 302 for acceleration time.

How to Order

LXFH5S B 50 S F9N 1 Q

Actuator configuration
F Flat table type

Guide type
H Direct acting guide

Motor type
5 5 phase stepper motor

Lead screw type
S Slide screw

Lead screw lead

A	6mm
B	12mm

Stroke

25	25mm
50	50mm
75	75mm
100	100mm

Use a driver with CE marking.

CE marking

Number of auto switches

1	1 pc.
2	2 pcs.
:	:
6	6 pcs.

Auto switch type

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Specifications

Motor	5 phase stepper motor (without brake)	
Lead screw	Slide screw \varnothing 8mm	
Positioning repeatability	\pm 0.05mm	
Lead	6 mm	12 mm
Speed ^{Note 1)}	3 to 100mm/s	6 to 200mm/s
Work load ^{Note 2)}	Horizontal	3 (2)kg / 2 (2)kg
Guide type	Direct acting guide	
Operating temperature range	5° to 40°C (with no condensation)	
Home position switch	Photo micro sensor EE-SX672 (Refer to page 319 for details.)	
Applicable driver	LC6D-507AD-Q (Refer to page 306 for details.)	
CE marking accessories	Holding plate: MB1(1 pc.), Phillips countersunk head screw M3 x 6/(1 pc.) Phillips binding head screw: M3 x 4/(2 pcs.), Toothed lock washer M3 (2 pcs.) Binding band: T18S (1 pc.)	

Note 1) Since vibration may increase with low speed operation, use 6mm/s or more for 6mm lead, and 12mm/s or more for 12mm lead as a guide for speed.

Note 2) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Weights

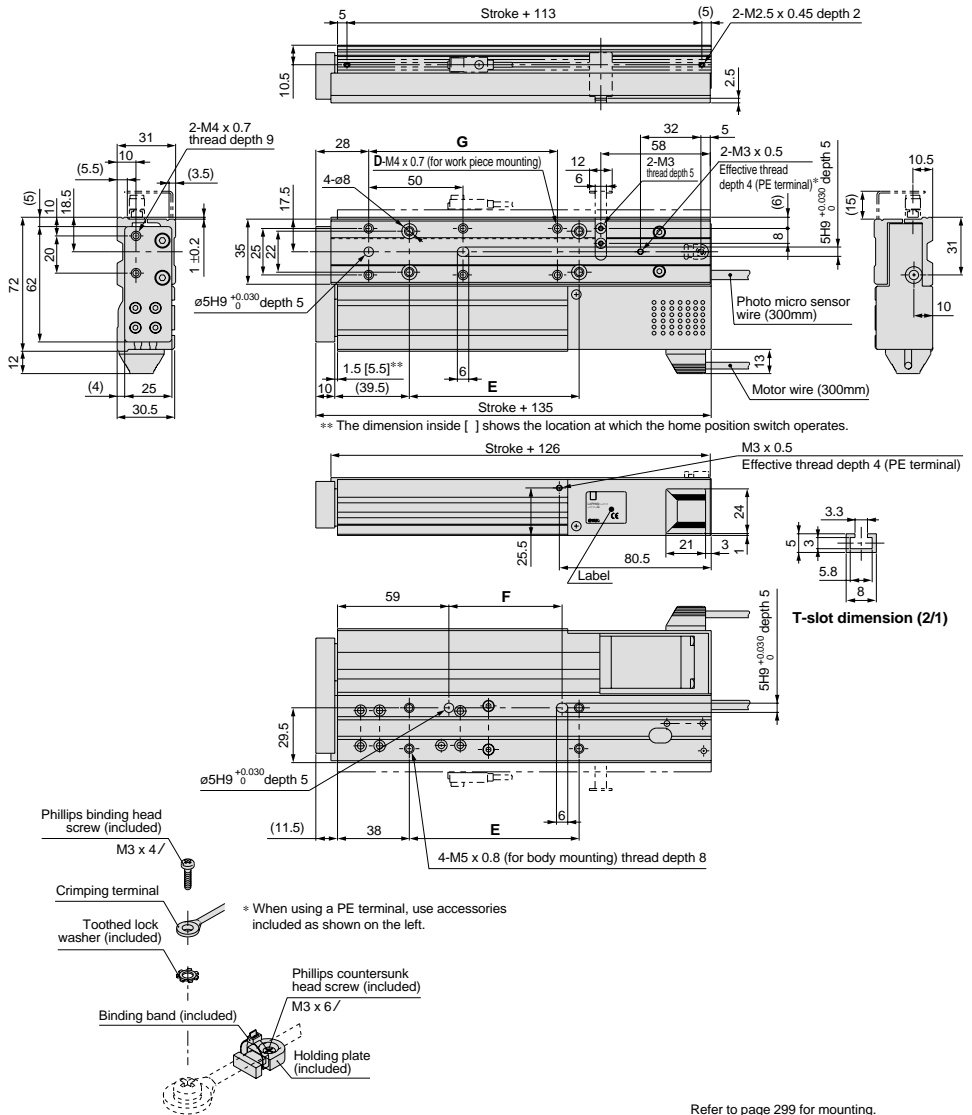
Model	Standard stroke (mm)			
	25	50	75	100
LXFH5S	0.8	1.0	1.1	1.2

(kg)

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

Dimensions/LXFH5S

Scale: 35%



Refer to page 299 for mounting.

Model	D	E	F	G
LXFH5S□-25	4	60	30	(50)
LXFH5S□-50	4	90	60	(50)
LXFH5S□-75	6	90	60	100
LXFH5S□-100	6	90	60	100

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Guide Rod Type

With Motor Brake/Without Motor Brake

Series LXP

CE Marking

How to Order

LXPB2SB-100SB-F9N1-Q

Actuator configuration

P	Guide rod type
---	----------------

Guide type

B	Ball bushing
---	--------------

Motor type

2	2 phase stepper motor
5	5 phase stepper motor

Lead screw type

S	Slide screw
---	-------------

Lead screw lead

A	6mm
B	12mm

Stroke

50	50mm
75	75mm
100	100mm
125	125mm
150	150mm
170	170mm
200	200mm

Use a driver with CE marking.

CE marking

Number of auto switches

1	1 pc.
2	2 pcs.
:	:
6	6 pcs.

Auto switch type

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	0.5	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	3	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Brake

Nil	Without brake
B	With brake

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Specifications

Motor	2 phase stepper motor (with/without brake)		5 phase stepper motor (with/without brake)	
Lead screw	Slide screw ø8mm			
Positioning repeatability	±0.05mm			
Lead	6mm	12mm	6mm	12mm
Speed ^{Note 1)}	3 to 100mm/s		6 to 200mm/s	
Work load	Horizontal	6kg	3kg	4kg
	Vertical	5kg	3kg	4kg
Guide type	Ball bushing			
Operating temperature range	5° to 40°C (with no condensation)			
Home position switch	Photo micro sensor EE-SX673 (Refer to page 319 for details.)			
Brake specifications	Model	De-energized operating type		
	Static torque	0.1 N·m		
	Rated voltage	24VDC ±5%		
	Power consumption	5W (at 75°C)		
Applicable driver	LC6D-220AD-Q (Refer to page 306 details.)		LC6D-507AD-Q (Refer to page 306 for details.)	
CE marking accessories	Holding plate: MB1 (1 pc.), Phillips countersunk head screw M3 x 6 / (1 pc.) Phillips binding head screw: M3 x 4 / (2 pcs.), Toothed lock washer M3 (2 pcs.) Binding band: T18S (1 pc.)			

Note 1) Since vibration may increase with low speed operation, use 6mm/s or more for 6mm lead, and 12mm/s or more for 12mm lead as a guide for speed.

Weights

Model	Standard stroke (mm)							Additional weight with motor (kg)
	50	75	100	125	150	175	200	
LXPB ₂ S	2.0	2.2	2.3	2.6	2.8	2.9	3.1	0.2

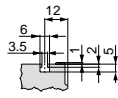
For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

Dimensions/LXPB $\frac{2}{5}$ S

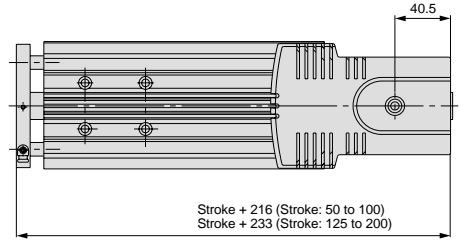
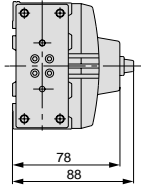
When two dimensions are shown, the top dimension is for 50 to 75 and 100mm strokes, and the bottom dimension is for 125, 150, 175, and 200mm strokes.

Scale: 25%

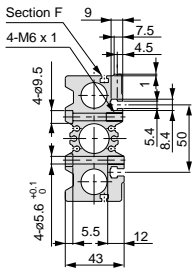
With brake



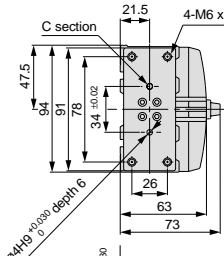
Section F detail
(Scale: 2/1)



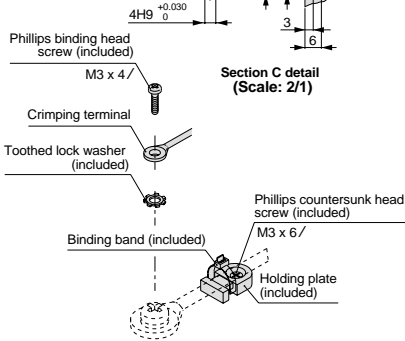
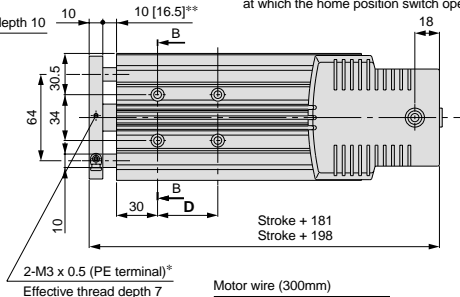
Without brake



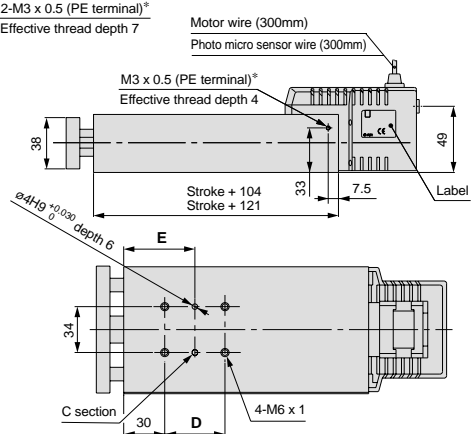
Cross section BB



** The dimension inside [] shows the location at which the home position switch operates.



* When using a PE terminal, use accessories included as shown above.



Model	(mm)	
	D	E
LXPB□S□- 50	44	52
LXPB□S□- 75		
LXPB□S□-100		
LXPB□S□-125	120	90
LXPB□S□-150		
LXPB□S□-175		
LXPB□S□-200		

Refer to page 300 for mounting.

How to Order

LX S H 2 S B 100 S B F9N 1 Q

Actuator configuration

S Slide table type

Guide type

H Direct acting guide

Motor type

2	2 phase stepper motor
5	5 phase stepper motor

Lead screw type

S Slide screw

Lead screw lead

A	6mm
B	12mm

Stroke

50	50mm
75	75mm
100	100mm
125	125mm
150	150mm

Use a driver with CE marking.

CE marking

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

CE marking

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	0.5	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Brake

Nil	Without brake
B	With brake

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Specifications

Motor	2 phase stepper motor (with/without brake)		5 phase stepper motor (with/without brake)	
Lead screw	Slide screw ø8mm			
Positioning repeatability	±0.05mm			
Lead	6mm	12mm	6mm	12mm
Speed ^{Note 1)}	3 to 100mm/s	6 to 200mm/s	3 to 100mm/s	6 to 200mm/s
Work load ^{Note 2)}	Horizontal	9 (4)kg	4.5 (4)kg	6 (4)kg
	Vertical	4 (4)kg	2 (2)kg	1 (1)kg
Guide type	High rigidity direct acting guide			
Operating temperature range	5° to 40°C (with no condensation)			
Home position switch (optional)	Photo micro sensor EE-SX673 (Refer to page 319 for details.)			
Brake specifications	Model	De-energized operating type		
	Static torque	0.1N·m		
	Rated voltage	24VDC ±5%		
	Power consumption	5W (at 75°C)		
Applicable driver	LC6D-220AD-Q (Refer to page 306 for details.)		LC6D-507AD-Q (Refer to page 306 for details.)	
Positioning repeatability	±0.05mm			
CE marking accessories	Holding plate: MB1 (1 pc.), Phillips countersunk head screw: M3 x 6/(1 pc.) Phillips binding head screw: M3 x 4/(2 pcs.), Toothed lock washer M3 (2 pcs.) Binding band: T18S (1 pc.)			

Note 1) Since vibration may increase with low speed operation, use 6mm/s or more for 6mm lead, and 12mm/s or more for 12mm lead as a guide for speed.

Note 2) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Weights

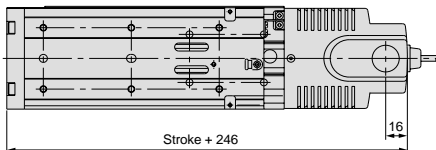
Model	Standard stroke (mm)					Additional weight with motor (kg)
	50	75	100	125	150	
LXSH ₂ S	1.9	2.1	2.3	2.5	2.7	0.2

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

Dimensions/LXSH $\frac{2}{5}$ S

Scale: 25%

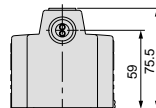
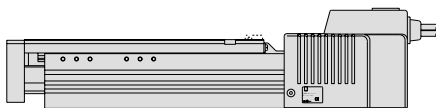
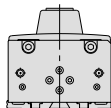
With brake



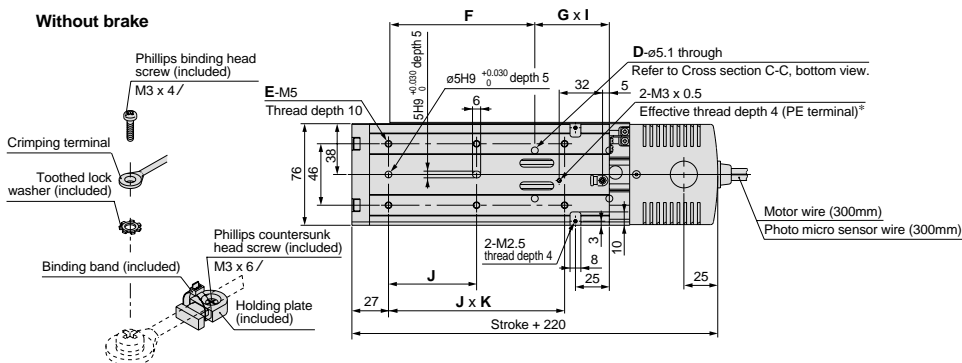
Brake electrical circuit



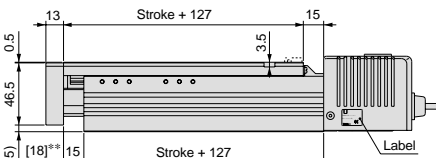
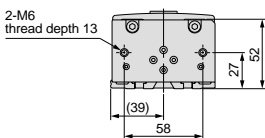
Note) A contact protection circuit is required when connecting a brake.



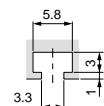
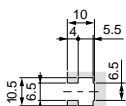
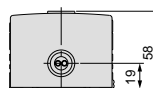
Without brake



* When using a PE terminal, use accessories included as shown above.

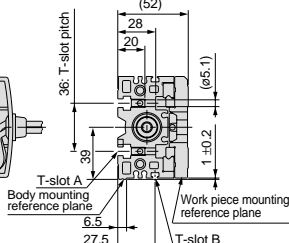
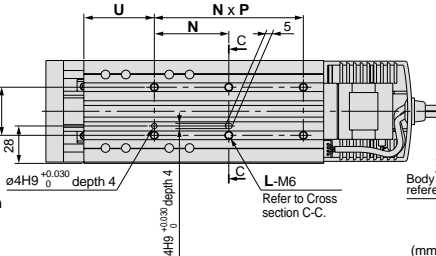


** The dimension inside [] shows the location at which the home position switch operates.



T-slot A dimension

T-slot B dimension



Cross Section C-C

Refer to page 301 for mounting.

Model	D	E	F	G	I	J	K	L	N	P	U
LXSH□S□- 50□	4	6	107	55	1	65	2	6	55	2	52
LXSH□S□- 75□	4	6	112	65	1	75	2	6	65	2	47
LXSH□S□-100□	4	8	122	75	1	65	3	6	75	2	47
LXSH□S□-125□	4	8	132	85	1	70	3	6	85	2	47
LXSH□S□-150□	6	8	112	65	2	75	3	8	65	3	47

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LXFHABD-50SB-GN1-X20

Actuator configuration

F	Flat table type
---	-----------------

Guide type

H	Direct acting guide
---	---------------------

Motor type

A	AC servomotor
---	---------------

Lead screw type

B	Ball screw
---	------------

Lead screw lead

C	2mm
D	5mm

Stroke

25	25mm
50	50mm
75	75mm
100	100mm

Mitsubishi Electric Corporation AC servomotor specification

Number of proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Proximity switch type

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)
GU	GXL-8FU	2 wire/solid state	1	N.O. (A contact)
GUB	GXL-8FUB	2 wire/solid state	1	N.C. (B contact)

* Refer to page 318 for detailed specifications of proximity switches.

Brake

Nil	Without brake
B	With brake

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Specifications

Motor	AC servomotor (30w)	
Lead screw	Ball screw ø8mm	
Positioning repeatability	±0.03mm	
Lead	2mm	5mm
Maximum speed	40mm/s	100mm/s
Work load <small>Note 1)</small>	Horizontal	3 (2)kg
	Vertical	2kg
Guide type	Direct acting guide	
Operating temperature range	5° to 40°C (with no condensation)	
Home position switch	Photo micro sensor EE-SX674 (Refer to page 319 for details.)	

* Contact motor manufacturers for brake specifications.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

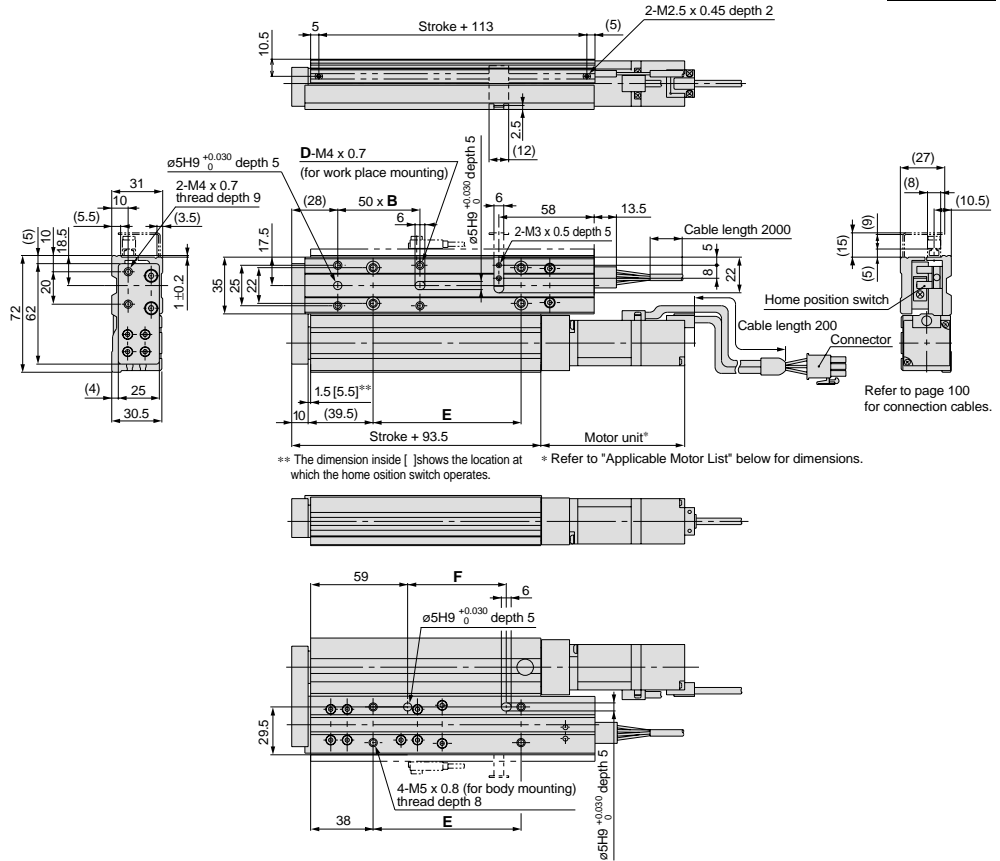
Weights

Model	Standard stroke (mm)				Additional weight with brake (kg)
	25	50	75	100	
LXFHAB□-X20	0.9	1.1	1.2	1.3	0.3

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

Dimensions/LXFHAB

Scale: 30%



Model	B	D	E	F	G
LXFHAB□- 25□-□□□□-X□□	1	4	60	30	60
LXFHAB□- 50□-□□□□-X□□	1	4	90	60	90
LXFHAB□- 75□-□□□□-X□□	2	6	90	60	90
LXFHAB□-100□-□□□□-X□□	2	6	90	60	90

Refer to page 299 for mounting.

Note) The overall length of an actuator is Stroke + 105.5 + Motor dimension.

Applicable Motor List

Symbol	Manufacturer	Motor output	Power supply voltage	Brake	Motor model	Applicable driver model ^{Note)}	Motor dimension (mm)	
							Without brake	With brake
X20	Mitsubishi Electric Corporation	30W	24VDC	Without brake	HC-AQ335D	MR-J2-03A5	85	112
				With brake	HC-AQ335BD	MR-J2-03A5		

Note) Refer to pages starting with 205 for driver dimensions. Contact motor manufacturers for each motor's detailed specifications, etc. A driver is included, however, the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

How to Order

LXPBABD-100SB-F9N1-X12

Actuator configuration

P Guide rod type

Guide type

B Ball bushing

Motor type

A AC servomotor

Lead screw type

B Ball screw

Lead screw lead

C Note 1)	2mm
D	5mm

Stroke

50	50mm
75	75mm
100	100mm
125	125mm
150	150mm
175	175mm
200	200mm

Home position switch Note 2)

Nil	None
S	Yes (cable length 0.3m)

AC servomotor specification
Refer to the applicable motor list on the next page.

Number of auto switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto switch type Note 2)

Symbol	Model	Wiring/ Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)
F9GL	D-F9GL	3 wire/NPN	0.5	N.C. (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)
F9B	D-F9B	2 wire	3	N.O. (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)
F9BL	D-F9BL	2 wire	3	N.O. (A contact)

Brake

Nil	Without brake
B	With brake

Note 1) When Tamagawa Seiki Co., Ltd. motors (X12, X13) are selected, a 2mm lead is applicable only when using the Windows-based setting software for the dedicated controller.

Note 2) For Tamagawa Seiki Co., Ltd. motors (X12, X13), only "Yes" is applicable for the home position switch setting. Also, auto switch F9N (1 pc.) is always attached for this specification. When using another switch in addition, list its part number next.

Example) LXPBABC-100SB-F9N1F9G1-X12

Specifications

Motor	AC servomotor (30w)	
Lead screw	Ball screw ø8mm	
Positioning repeatability	±0.03mm	
Lead	2mm	5mm
Speed	50mm/s	100mm/s
Work load	Horizontal	6kg
	Vertical	5kg
Guide type	Ball bushing	
Operating temperature range	5° to 40°C (with no condensation)	
Home position switch	Photo micro sensor EE-SX673 [OMRON Corporation] (Refer to page 319 for details.)	

* Contact motor manufacturers for brake specifications.

Weights

Model	Standard stroke (mm)							Additional weight with motor (kg)
	50	75	100	125	150	175	200	
LXPBAB□-X12/X13	2.0	2.2	2.3	2.6	2.8	2.9	3.1	With brake 0.3
LXPBAB□-X15/X16	1.9	2.1	2.2	2.5	2.7	2.8	3.0	0.2
LXPBAB□-X18/X19	2.0	2.2	2.3	2.6	2.8	2.9	3.1	0.3
LXPBAB□-X21/X22	2.0	2.2	2.3	2.6	2.8	2.9	3.1	0.3

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

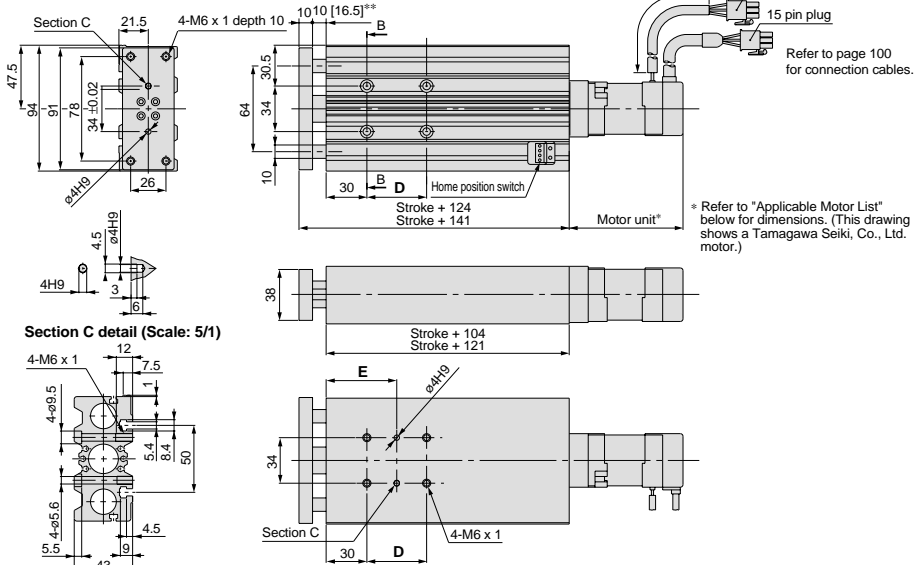
Dimensions/LXPBAB

Scale: 25%

When two dimensions are shown, the top dimension is for 50 and 100mm strokes, and the bottom dimension is for 125, 150, 175, and 200mm strokes.

** The dimension inside [] shows the location at which the home position switch operates.

Cable length 200 to 300mm



Refer to "Applicable Motor List" below for dimensions. (This drawing shows a Tamagawa Seiki, Co., Ltd. motor.)

Cross section BB

(mm)

Refer to page 300 for mounting.

Model	D	E
LXPBAB□- 50S□-□□□□-X□□	44	52
LXPBAB□- 75S□-□□□□-X□□		
LXPBAB□-100S□-□□□□-X□□		
LXPBAB□-125S□-□□□□-X□□		
LXPBAB□-150S□-□□□□-X□□	120	90
LXPBAB□-175S□-□□□□-X□□		
LXPBAB□-200S□-□□□□-X□□		

Note) The overall length of an actuator is Stroke + 124 (141) + Motor dimension.

Applicable Motor List

Symbol	Manufacturer	Motor output	Power supply voltage	Brake	Motor model	Applicable ^{Note)} driver model	Motor dimension (mm)	
							Without brake	With brake
X12	Tamagawa Seiki Co., Ltd.	30W	100/110VAC	Without brake	TS4501N	SMC controller Series LC1 (X233) Refer to page 189 for details.	80.5	111.5
				With brake	TS4501N			
X13			200/220VAC	Without brake	TS4501N			
				With brake	TS4501N			
X15	Matsushita Electric Industrial Co., Ltd.		100/115VAC	Without brake	MSM3AZP1A	MSD3A1P1E	91	123
				With brake	MSM3AZP1B	MSD3A1P1E		
X16			200VAC	Without brake	MSM3AZP1A	MSD3A3P1E		
				With brake	MSM3AZP1B	MSD3A3P1E		
X18	Mitsubishi Electric Corporation		100/115VAC	Without brake	HC-PQ033	MR-C10A1	87.5	111.5
				With brake	HC-PQ033B	MR-C10A1		
X19		200/230VAC	Without brake	HC-PQ033	MR-C10A			
			With brake	HC-PQ033B	MR-C10A			
X21	Yaskawa Electric Corporation	100/115VAC	Without brake	SGME-A3BF12	SGDE-A3BP	91.5	123	
			With brake	SGME-A3BF12B	SGDE-A3BP			
X22		200/230VAC	Without brake	SGME-A3BF12	SGDE-A3AP			
			With brake	SGME-A3BF12B	SGDE-A3AP			

Note) Refer to pages starting with 205 for driver dimensions. Contact motor manufacturers for each motor's detailed specifications, etc.

A driver is included with motors by Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corporation, and Yaskawa Electric Corporation. However, the cable that connects the motor and driver is optional. Refer to page 100 for part numbers.

How to Order

LXSHABD-100SB-F9N1-X12

Actuator configuration

S Slide table type

Guide type

H Direct acting guide

Motor type

A AC servomotor

Lead screw type

B Ball screw

Lead screw lead

C Note 1)	2mm
D	5mm

Stroke

50	50mm
75	75mm
100	100mm
125	125mm
150	150mm

Home position switch Note 2)

Nil	None
S	Yes (cable length 0.3m)

Brake

Nil	Without brake
B	With brake

AC servomotor specification
Refer to the applicable motor list on the next page.

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
:	:
6	6 pcs.

When using both auto and proximity switches, list the proximity switch part number after the auto switch part number. Example) **F9N1G2**

Auto switch type Note 2)

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
Nil	Without auto switch			
F9N	D-F9N	3 wire/NPN	0.5	N.O (A contact)
F9P	D-F9P	3 wire/PNP	0.5	N.O (A contact)
F9G	D-F9G	3 wire/NPN	0.5	N.C (B contact)
F9H	D-F9H	3 wire/PNP	0.5	N.C (B contact)
F9GL	D-F9GL	3 wire/NPN	3	N.C (B contact)
F9HL	D-F9HL	3 wire/PNP	3	N.C (B contact)
F9B	D-F9B	2 wire	0.5	N.O (A contact)
F9NL	D-F9NL	3 wire/NPN	3	N.O (A contact)
F9PL	D-F9PL	3 wire/PNP	3	N.O (A contact)
F9BL	D-F9BL	2 wire	3	N.O (A contact)

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact
GN	With sensor rail and sensor plate, without proximity switch			
G	GXL-8F	3 wire/NPN	1	N.O (A contact)
GD	GXL-8FI	3 wire/NPN	1	N.O (A contact)
GB	GXL-8FB	3 wire/NPN	1	N.C (B contact)
GDB	GXL-8FIB	3 wire/NPN	1	N.C (B contact)
GU	GXL-8FU	2 wire/Solid state	1	N.O (A contact)
GUB	GXL-8FUB	2 wire/Solid state	1	N.C (B contact)

Note 1) When Tamagawa Seiki Co., Ltd. motors (X12, X13) are selected, a 2mm lead is applicable only when using the Windows-based setting software for the dedicated controller.

Specifications

Motor	AC servomotor (30w)	
Lead screw	Ball screw ø8mm	
Positioning repeatability	±0.03mm	
Lead	2mm	5mm
Speed	50mm/s	100mm/s
Work load Note 1)	Horizontal	10 (4)kg
	Vertical	5 (4)kg
Guide type	High rigidity direct acting guide	
Operating temperature range	5° to 40°C (with no condensation)	
Home position switch	Photo micro sensor EE-SX673 [OMRON Corporation] (Refer to page 319 for details.)	

* Contact motor manufacturers for brake specifications.

Note 1) When mounting a work piece to the actuator's end plate, its weight should be within the value inside ().

Weights

Model	Standard stroke (mm)					Additional weight with motor (kg)
	50	75	100	125	150	
LXSHAB□-X12/X13	1.9	2.1	2.3	2.5	2.7	0.3
LXSHAB□-X15/X16	1.8	2.0	2.2	2.4	2.6	0.2
LXSHAB□-X18/X19	1.9	2.1	2.3	2.5	2.7	0.3
LXSHAB□-X21/X22	1.9	2.1	2.3	2.5	2.7	0.3

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

How to Order

Low Profile Slide Table Type **LXFH 5 B C 25** **GD 1 X60**

Guide Rod Type **LXPB 2 B C 50 B F9N 1 X60**

High Rigidity Slide Table Type **LXSH 2 B C 50 B F9N 1 X60**

Motor type

2	2 phase stepper motor
5	5 phase stepper motor

Lead screw type

B	Ball screw
---	------------

Lead screw lead

C	2mm
D	5mm

Stroke

Model	Stroke (mm)							
	25	50	75	100	125	150	175	200
LXF	●	●	●	●				
LXP		●	●	●	●	●	●	●
LXS		●	●	●	●	●		

Low particulate generation specification

Number of auto/proximity switches

1	1 pc.
2	2 pcs.
⋮	⋮
6	6 pcs.

Auto/Proximity switch type

Nil	None
-----	------

Refer to the tables below for auto/proximity switch part numbers.

Brake

Nil	Without brake
B	With brake

Home position switch

Nil	None
S	Yes (cable length 0.3m)

Auto switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact	Applicable actuator
F9N	D-F9N	3 wire/NPN	0.5	N.O. (A contact)	LXP LXS
F9P	D-F9P	3 wire/PNP	0.5	N.O. (A contact)	
F9G	D-F9G	3 wire/NPN	0.5	N.C. (B contact)	
F9H	D-F9H	3 wire/PNP	0.5	N.C. (B contact)	
F9GL	D-F9GL	3 wire/NPN	3	N.C. (B contact)	
F9HL	D-F9HL	3 wire/PNP	3	N.C. (B contact)	
F9B	D-F9B	2 wire	0.5	N.O. (A contact)	
F9NL	D-F9NL	3 wire/NPN	3	N.O. (A contact)	
F9PL	D-F9PL	3 wire/PNP	3	N.O. (A contact)	
F9BL	D-F9BL	2 wire	3	N.O. (A contact)	

* When using both auto and proximity switches, list the proximity switch part number after the auto switch part number. Example) **F9N1G2**

Proximity switch types

Symbol	Model	Wiring/Output type	Lead wire length (m)	Contact	Applicable actuator
GN	With sensor rail and sensor plate, without proximity switch				
G	GXL-8F	3 wire/NPN	1	N.O. (A contact)	LXF LXS
GD	GXL-8FI	3 wire/NPN	1	N.O. (A contact)	
GB	GXL-8FB	3 wire/NPN	1	N.C. (B contact)	
GDB	GXL-8FIB	3 wire/NPN	1	N.C. (B contact)	
GU	GXL-8FU	2 wire/Solid state	1	N.O. (A contact)	
GUB	GXL-8FUB	2 wire/Solid state	1	N.C. (B contact)	

* Refer to page 318 for detailed specifications of proximity switches.

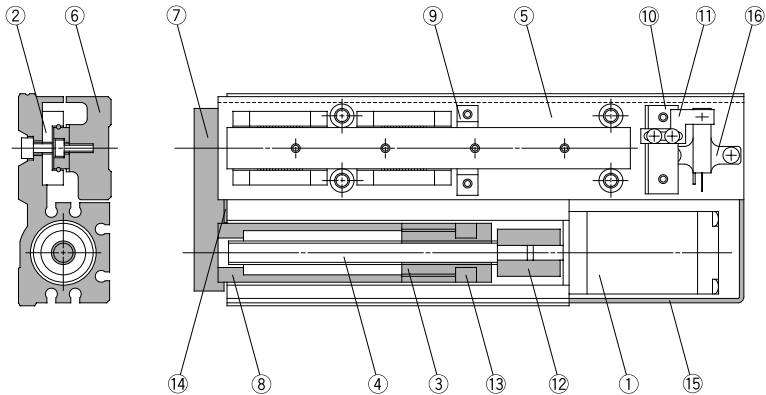
Specifications

Model	LXF	LXP	LXS
Guide type	Direct acting guide Stainless steel, With low particulate generating grease	Ball bushing Stainless steel, With low particulate generating grease	High rigidity direct acting guide Stainless steel, With low particulate generating grease
Lead screw	Ball screw \varnothing 8mm 2mm/5mm lead Black chrome coating + Special fluororesin coating, AFE grease (made by THK) applied		

For basic specifications such as allowable moment, refer to the "Standard" pages for equivalent products listed on Features pages 3 and 4.

Construction

Series LXF

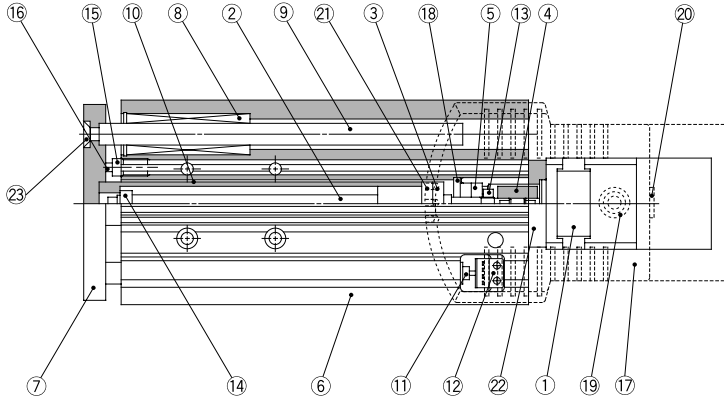


Parts list

No.	Description	Material	Note
1	Motor	—	
2	Direct acting guide	—	
3	Nut	Resin/Alloy steel	
4	Rolled screw	Alloy steel	
5	Body	Aluminum alloy	Anodized
6	Table	Aluminum alloy	Anodized
7	End plate	Aluminum alloy	Anodized
8	Tube	Aluminum alloy	Anodized
9	Stopper A	—	

Parts list

No.	Description	Material	Note
10	Stopper B	Aluminum alloy	
11	Sensor plate	Mild steel	Chromated
12	Coupling	Aluminum alloy	
13	Magnet	—	
14	Bumper	Rubber	
15	Motor cover	Resin	
16	Photo micro sensor	—	

Construction**Series LXP**

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Parts list

No.	Description	Material	Note
1	Motor	—	Stepper motor
2	Roller screw	Alloy steel	
3	Nut	Resin	
4	Coupling	—	
5	Bearing	—	
6	Body	Aluminum alloy	Anodized
7	Mounting plate	Mild steel	Nickel plated
8	Ball bushing	—	
9	Guide rod	Bearing steel	Chrome plated
10	Tube	Aluminum alloy	Anodized
11	Sensor pin	Stainless steel	

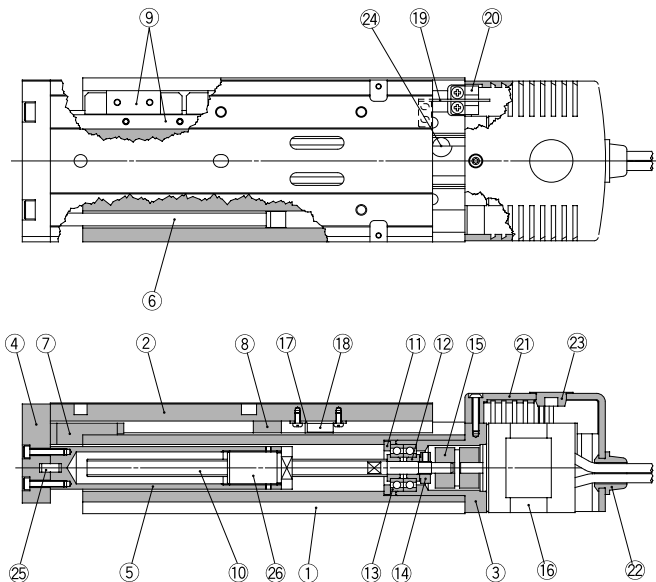
Parts list

No.	Description	Material	Note
12	Photo micro sensor	—	
13	Lock nut	Carbon steel	Black zinc chromated
14	Stopper nut	Aluminum alloy	
15	Bumper bolt	Bearing steel	Nickel plated
16	Bumper	Resin	
17	Motor cover	Resin	
18	Tension ring	Stainless steel	
19	Cable cap	—	
20	Plug	—	
21	Magnet	—	
22	Adaptor	Aluminum alloy	
23	Plate mounting bolt	Carbon steel	Nickel plated

Series LX

Construction

Series LXS



Parts list

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Table	Aluminum alloy	Anodized
3	Adaptor	Aluminum alloy	Anodized
4	Plate	Aluminum alloy	Anodized
5	Tube	Aluminum alloy	Anodized
6	Rod assembly	—	With magnet
7	Stopper A	—	With bumper
8	Stopper B	—	
9	Direct acting guide (block, rail)	—	
10	Rolled screw (shaft only)	Alloy steel	
11	Tension ring	Stainless steel	
12	Bearing retainer	Stainless steel	
13	Bearing	—	

Parts list

No.	Description	Material	Note
14	Lock nut	Carbon steel	Black zinc chromated
15	Coupling	—	
16	Motor	—	
17	Magnet holder	Resin	
18	Magnet	Rare earth magnet	
19	Sensor plate	Mild steel	With home position switch
20	Photo micro sensor	—	With home position switch
21	Motor cover	Resin	
22	Plug A		
23	Plug B		
24	Cap		
25	Parallel pin	Carbon steel	
26	Nut	Resin/Alloy steel	

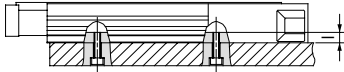
Mounting

Series LXF

Actuator mounting

An actuator can be mounted from two directions, which can be selected depending on the equipment or work piece.

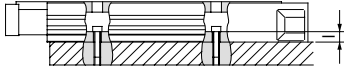
1. Tapped holes



Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXF	M5 x 0.8	4.4	8

Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.

2. Through holes

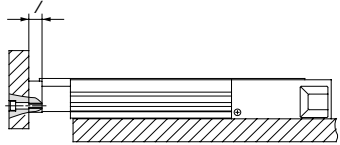


Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXF	M4 x 0.7	2.1	8

Work piece mounting

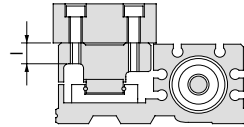
Work pieces can be mounted on two sides of the actuator.

1. Front mount type



Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXF	M4 x 0.7	2.1	10

2. Top mount type



Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXF	M4 x 0.7	2.1	8

Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.

LJ1

LG1

LC1

LX

LC6D/LC6C

Switches

Series LX

Mounting

Series LXP

Actuator mounting

1. Tapped holes			
Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXP	M6 x 1	7.4	12

2. Through holes			
Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXP	M5 x 0.8	4.4	37.5

3. T-slots			
Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXP	M5 x 0.8	7.4	8.5

Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.

Work piece mounting

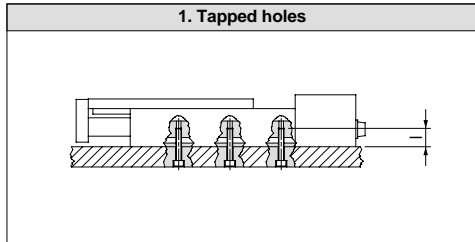
1. Front mount type			
Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXP	M6 x 1	7.4	10

Mounting

Series LXS

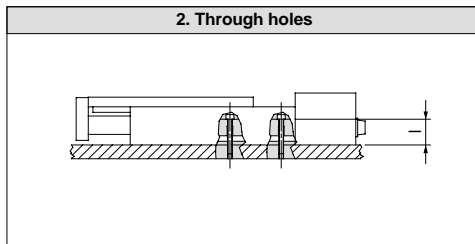
Actuator mounting

An actuator can be mounted from two directions, which can be selected depending on the equipment or work piece.

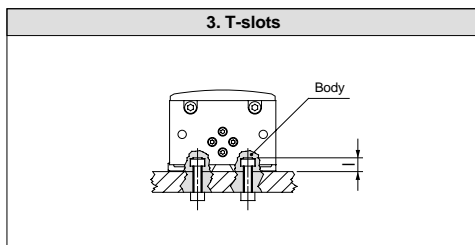


Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXS	M6 x 1	7.4	20

Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.



Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXS	M5 x 0.8	4.4	28

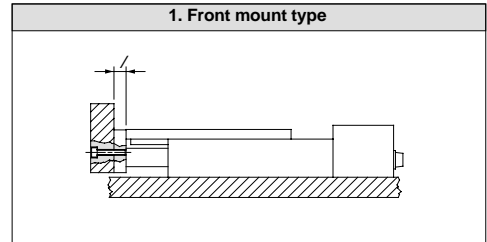


Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXS	M6 x 1	7.4	10

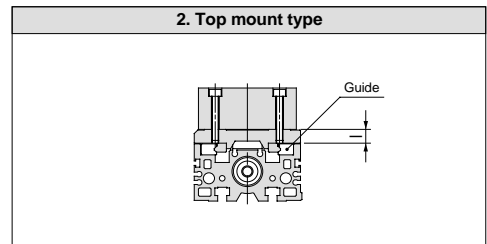
Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.

Work piece mounting

Work pieces can be mounted on two sides of the actuator.



Model	Bolt	Max. tightening torque N·m	Body thickness (/mm)
LXS	M6 x 1	7.4	13



Model	Bolt	Max. tightening torque N·m	Max. screw-in depth (/mm)
LXS	M5 x 0.8	4.4	10

Caution Use bolts at least 0.5mm shorter than the maximum screw-in depth, so they do not touch the body.

LJ1

LG1

LC1

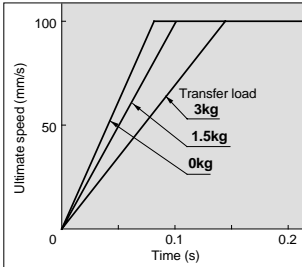
LX

LC6D/LC6C

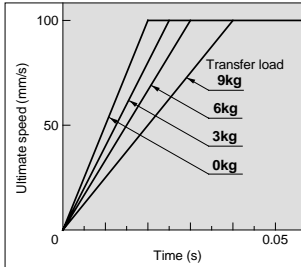
Switches

Acceleration Time Guide/Slide Screw Specification (Horizontal)

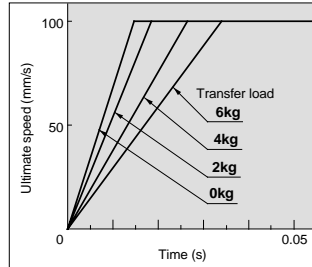
LXFH5SA



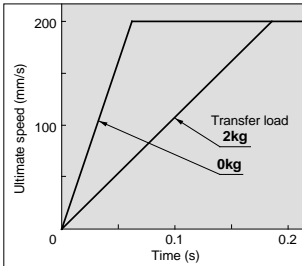
LXPB2SA/LXSH2SA



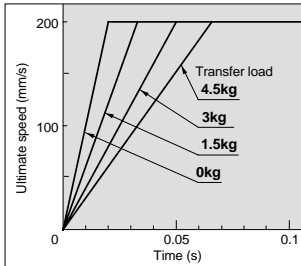
LXPB5SA/LXSH5SA



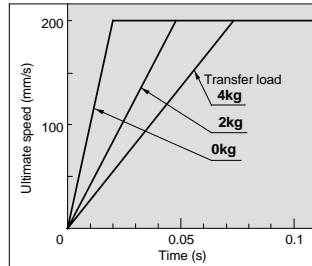
LXFH5SB



LXPB2SB/LXSH2SB

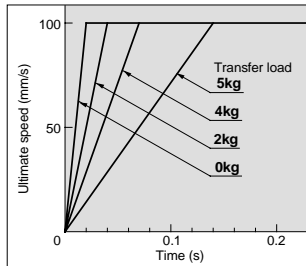


LXPB5SB/LXSH5SB

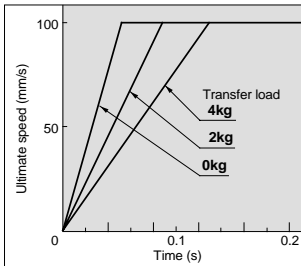


Acceleration Time Guide/Slide Screw Specification (Vertical)

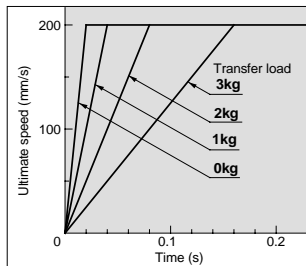
LXPB2SA/LXSH2SA



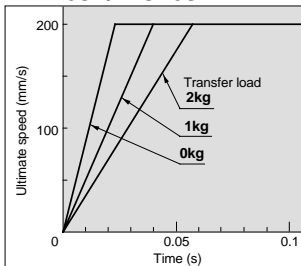
LXPB5SA/LXSH5SA



LXPB2SB/LXSH2SB



LXPB5SB/LXSH5SB

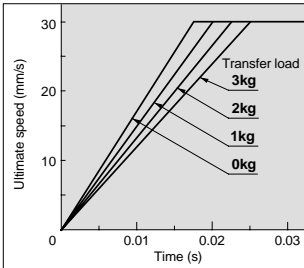


⚠ Caution

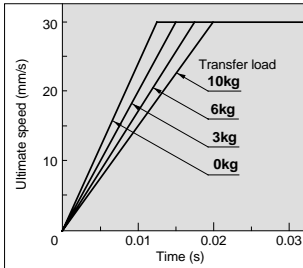
- Transfer loads should not exceed each model's work load specification.
- Determine the acceleration time based on the transfer load and ultimate speed.
- Operating over the graph ranges will cause loss of synchronism.
- The graphs are based on operation using an SMC DC power input type driver with halfstep energization.
- Data fluctuate depending on the operating conditions.

Acceleration Time Guide/Ball Screw Specification (Horizontal)

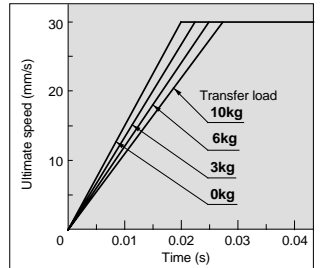
LXFH5BC



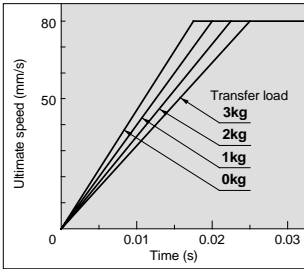
LXPB2BC/LXSH2BC



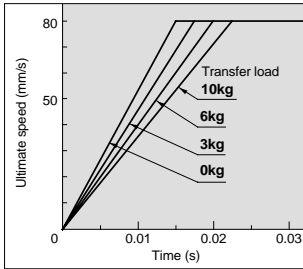
LXPB5BC/LXSH5BC



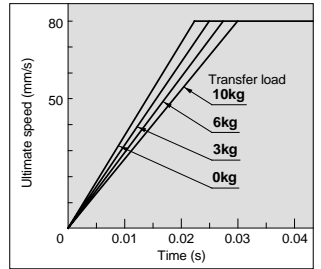
LXFH5BD



LXPB2BD/LXSH2BD

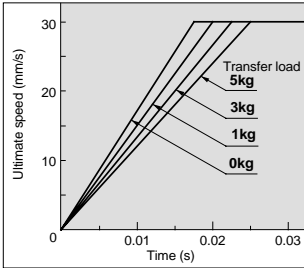


LXPB5BD/LXSH5BD

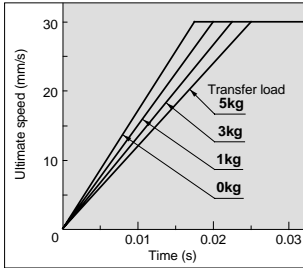


Acceleration Time Guide/Ball Screw Specification (Vertical)

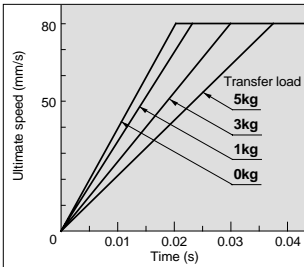
LXPB2BC/LXSH2BC



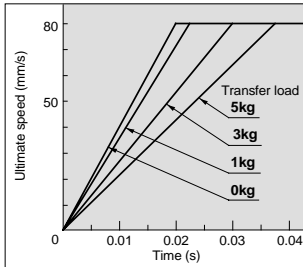
LXPB5BC/LXSH5BC



LXPB2BD/LXSH2BD



LXPB5BD/LXSH5BD



⚠ Caution

- Transfer loads should not exceed each model's work load specification.
- Determine the acceleration time based on the transfer load and ultimate speed.
- Operating over the graph ranges will cause loss of synchronism.
- The graphs are based on operation using an SMC DC power input type driver with halfstep energization.
- Data fluctuate depending on the operating conditions.

LJ1

LG1

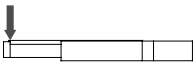

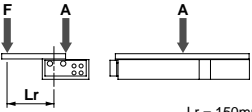
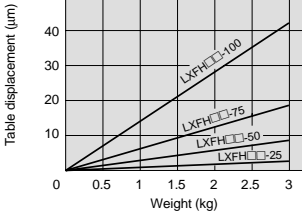
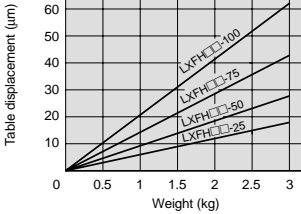
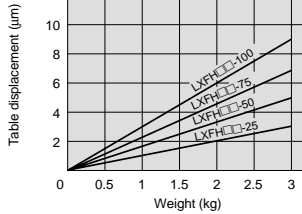
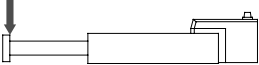
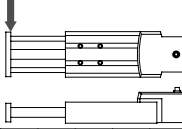
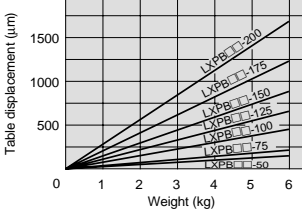
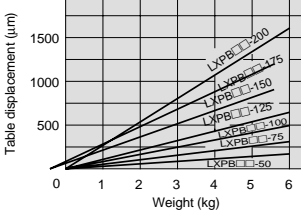
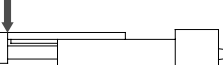

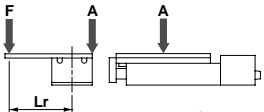
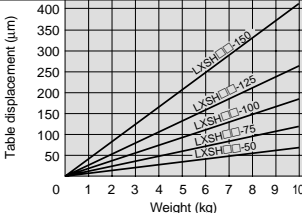
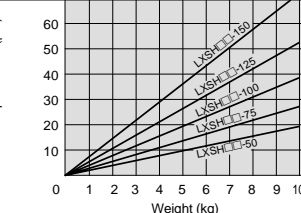
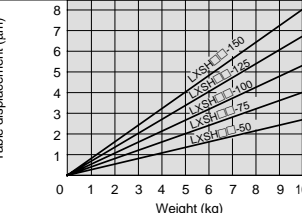
LC1

LX

LC6D/LC6C

Switches

Table Deflection

	Table displacement by pitch moment load	Table displacement by yaw moment load	Table displacement by roll moment load
LXF	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the slide table fully extended.</p> 	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the slide table fully extended.</p> 	<p>Displacement at "A" when a load is applied to "F" with the slide table retracted.</p>  <p style="text-align: right;">$L_r = 150\text{mm}$</p>
			
LXP	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the electric actuator fully extended.</p> 	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the electric actuator fully extended.</p> 	
			
LXS	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the slide table fully extended.</p> 	<p>Displacement at the section indicated by the arrow when a load is applied to this section with the slide table fully extended.</p> 	<p>Displacement at "A" when a load is applied to "F" with the slide table retracted.</p>  <p style="text-align: right;">$L_r = 200\text{mm}$</p>
			

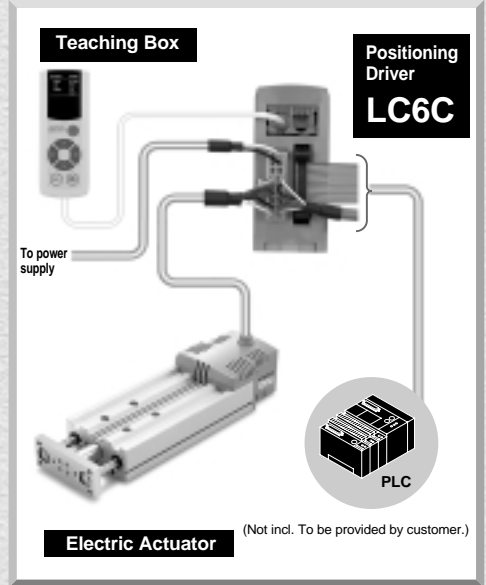
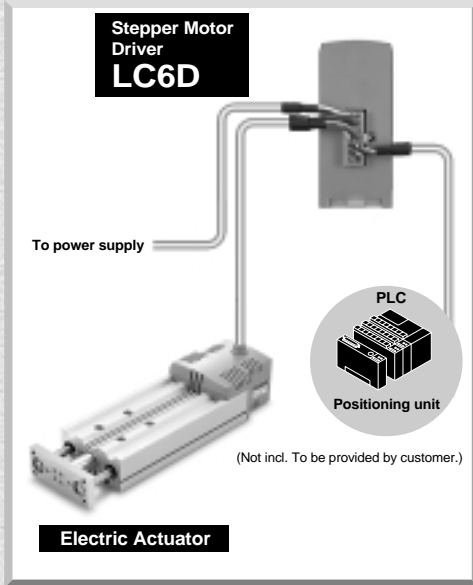


Series LC6D

Series LC6C

Series LX Dedicated Stepper Motor Driver and Positioning Driver

Series LC6D/LC6C



■ Stepper Motor Driver/LC6D	Page 306
■ Positioning Driver/LC6C	309
• LC6C dedicated teaching box	313
■ Options	315

LJ1

LG1

LC1

LX

LC6D/LC6C

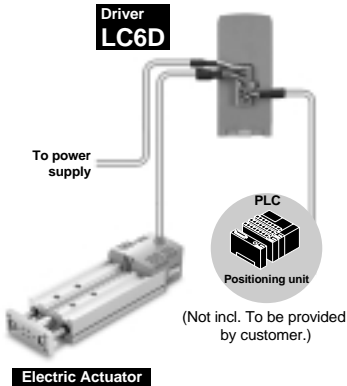
Switches

Stepper Motor Driver

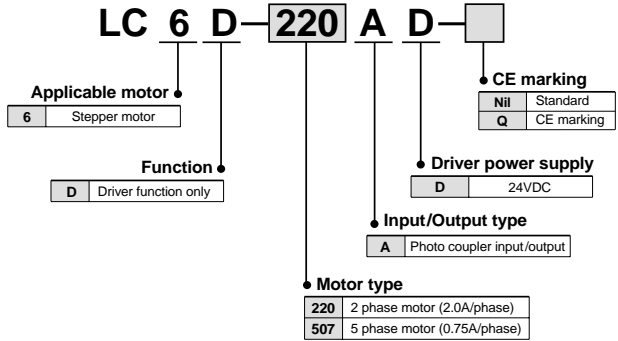
Series LC6D Series LX Dedicated



- Can be mounted on a DIN rail
- Driver position controlled by pulse signal
- Can be controlled by a general positioning unit or controller



How to Order



Applicable Actuators

Driver model	Applicable actuator	Motor type
LC6D-220AD	Guide rod type	LXPB2
	High rigidity slide table type	LXSH2
LC6D-507AD	Low profile slide table type	LXFH5
	High rigidity slide table type	LXSH5
	Guide rod type	LXPB5

Specifications

Part no.	LC6D-220AD	LC6D-507AD
Power supply	24VDC ±10%, 3A	24VDC ±10%, 2.5A
energization (Step angle °)	Full step (1.8°) Half step (0.9°)	Full step (0.72°) Half step (0.36°)
Motor current	2.0A/phase	0.75A/phase
Input signal	Photo coupler input (Input impedance 330Ω)	
Maximum input frequency (See caution below.)	10kHz for full step 20kHz for half step	
Function	Auto current down, Power down input	
Connection method	Connector	
Operating environment	5° to 40°C	
	35 to 85% (with no condensation)	
Accessories	Connectors (receptacle, female terminal) Cable should be arranged by customer.	

CE marking

1. The combination of Series LC6D and Series LX has been certified for CE marking.
When using Series LX with CE marking, use it in combination with Series LC6D with CE marking.
2. The combination of Series LC6D and Series LX has been certified for EMC conformity.

EMC changes depending on the customer's control panel configuration, and the relationship between other electrical equipment and wiring. Therefore, conformity cannot be certified for the customer's equipment in the actual operating environment. As a result, it is necessary for the customer to verify final EMC conformity for the machinery and equipment as a whole.

Caution

Maximum speeds of actuators vary depending on the type. Observe the maximum speed of the actuator in use.

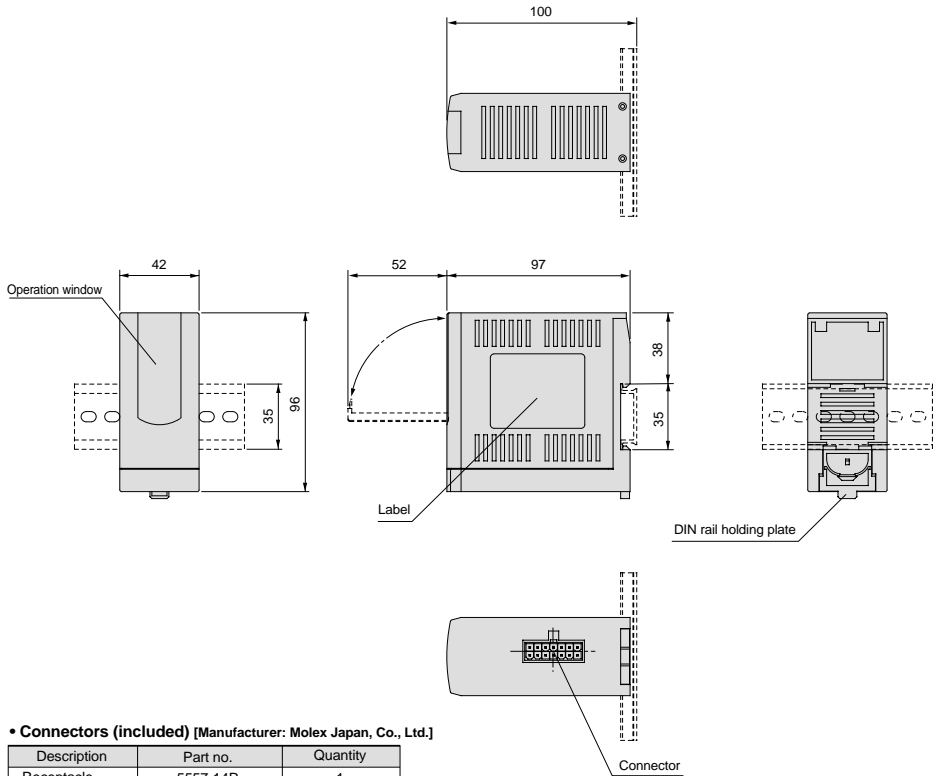
Pulse Signals

LC6D positioning is controlled by the number of pulse signal inputs to the CW and CCW terminals, and speed is controlled by pulse frequencies.

- Calculation for speed and pulse frequencies
Pulse frequency [pps] = (Speed [mm/s]/Lead [mm]) x Divisions per rotation
- Calculation for moving distance and pulse numbers
Pulse numbers = (Moving distance [mm]/Lead [mm]) x Divisions per rotation
- The divisions per rotation are as shown in the table below.

Driver	Energization type	Divisions per rotation
LC6D-220AD-□	Full step	200
	Half step	400
LC6D-507AD-□	Full step	500
	Half step	1000

Dimensions



• **Connectors (included)** [Manufacturer: Molex Japan, Co., Ltd.]

Description	Part no.	Quantity
Receptacle	5557-14R	1
Female terminal	5556PBTL	14

• **Wiring tools** [Manufacturer: Molex Japan Co., Ltd.]

Wiring tools should be arranged by the customer.

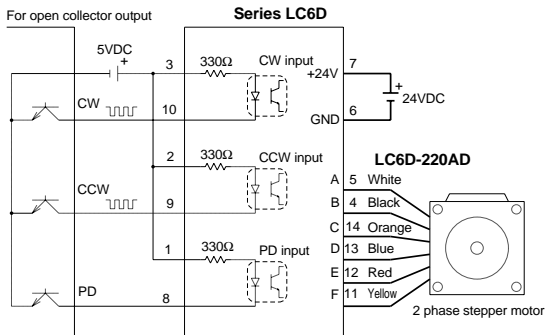
Description	Part no.
Crimping tool	57026-5000 (for UL1007) 57027-5000 (for UL1015)
Puller	57031-6000

Series LC6D

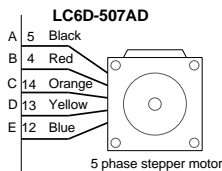
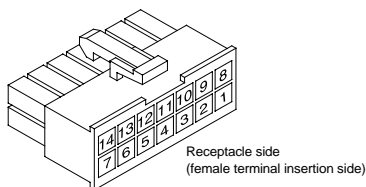
Connection Examples

• Electrical wires

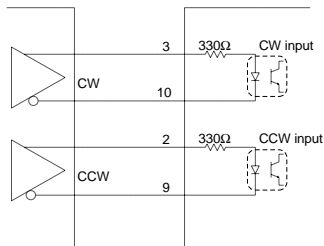
—— 0.5mm² or larger (AWG18 to 20)
 —— 0.2mm² or larger (shielding wire) (AWG18 to 24)



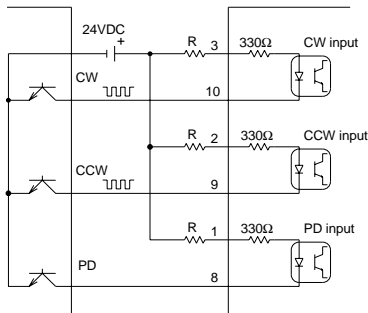
• Wiring numbers



For line driver output



For a signal power supply of 24VDC, connect an external resistor R (1.3kΩ 1/2W) in order to hold the current to 15mA or lower.



Signal description	Function	Pin no.
+24V	Driver power supply +24V	7
GND	Driver power supply GND	6
CW+	CW pulse input terminal (+)	3
CW-	CW pulse input terminal (-)	10
CCW+	CCW pulse input terminal (+)	2
CCW-	CCW pulse input terminal (-)	9
PD+	Power down input terminal (+)	1
PD-	Power down input terminal (-)	8
A	Motor drive output A	5
B	Motor drive output B	4
C	Motor drive output C	14
D	Motor drive output D	13
E	Motor drive output E	12
F	Motor drive output F (LC6D-2□□□□ only)	11

Functions

• Function change-over switch

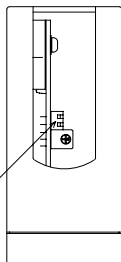
Use the function change-over switch to set each function. It is set as follows when shipped.



- ON Energization type: Half step
- OFF ... Auto current down function

	ON	OFF
1	Half step	Full step
2	Release	Set

Function change-over switch



• Input signal terminal

• CW pulse input terminal

By applying the pulse input, the actuator moves from the motor side to the end side.

• CCW pulse input terminal

By applying the pulse input, the actuator moves from the end side to the motor side.

• Power down input terminal

By applying the "H" level input, the motor current is shut off and the motor becomes de-energized.

• Functions

• Auto current down

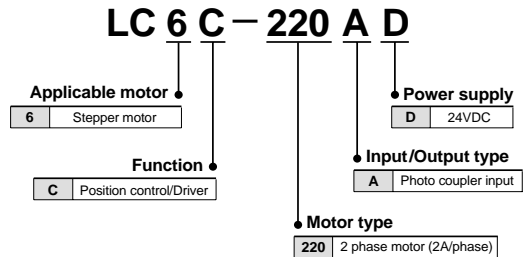
This is a function that reduces the motor current to half when the motor stops. This will prevent the motor and driver from generating heat. Although auto current down causes the holding torque to be reduced when the motor stops, the holding torque that supports the actuator transfer load is maintained.

• Power down

This function shuts off the motor current and de-energizes the motor. Use this function to release the electric actuator for maintenance, etc.



How to Order



- Built-in position control function added to LC6D
- Up to 28 patterns of movement data can be set.
- Point movement can be easily achieved with a PLC, etc.
- Compatible with Series LX two phase stepper motor

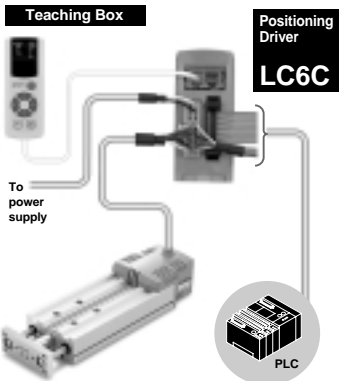
Applicable Actuators

Driver	Applicable actuator	Motor type
LC6C-220AD	Guide rod type	LXPB2
	High rigidity slide table type	LXSH2
		2 phase stepper motor

* Select a 3 wire NPN type when using an auto switch.

Specifications

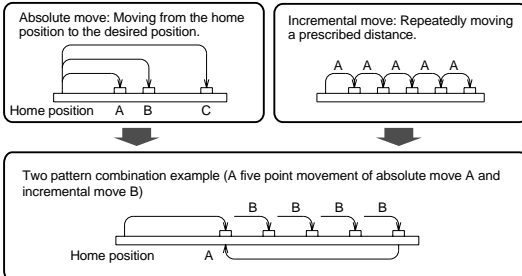
Part no.	LC6C-220AD
Power supply	24VDC \pm 10%, Max. 3.0A
Number of position settings	28 patterns
Position setting method	Setting with dedicated teaching box (LC5-1-T1-02)
Position control method	Absolute and incremental moves Speed: 6 to 200mm/s (with lead screw lead of 12mm)
Input signal capacity	Photo coupler input 24VDC, Max. 6mA
Output signal capacity	Photo coupler output Max. 30VDC or less, Max. 20mA
Parameter setting	Position data setting, Speed/Acceleration setting, etc.
Indication LED	Power supply LED, Alarm LED
Operating temperature	5° to 40°C
Accessories	Power connector, Interface connector (Cables should be arranged by customer.)



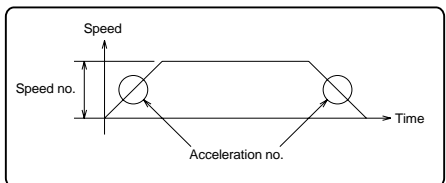
(Should be arranged by customer.)

Electric Actuator

Absolute and incremental moves for each movement pattern.



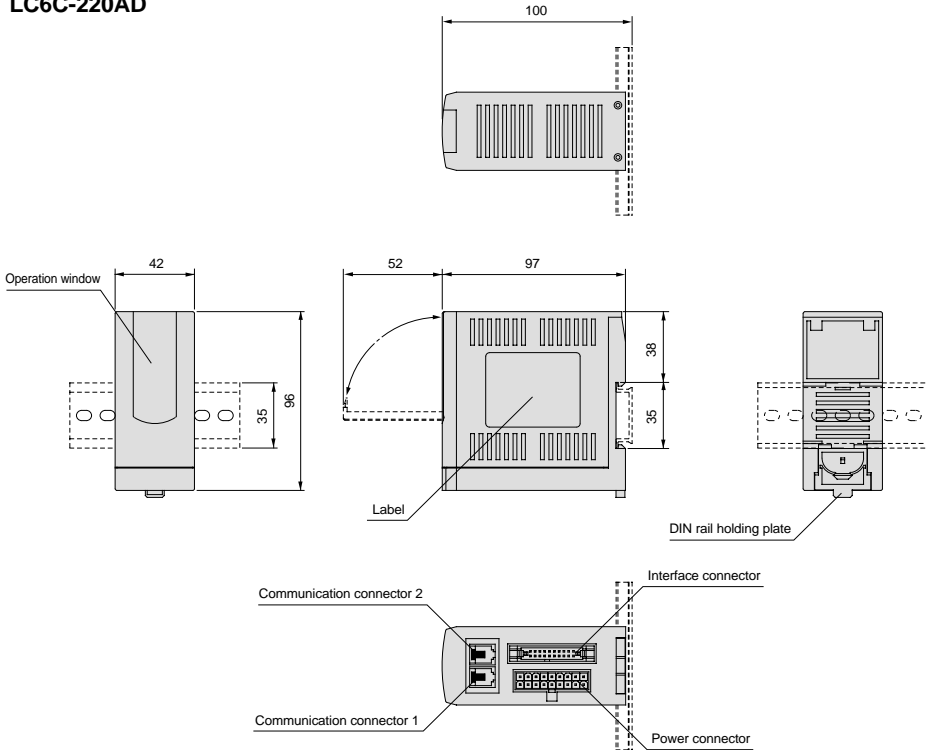
Eight speed patterns based on the speed number and acceleration number can be set, and a speed pattern can be selected for each movement pattern.



Series LC6C

Dimensions

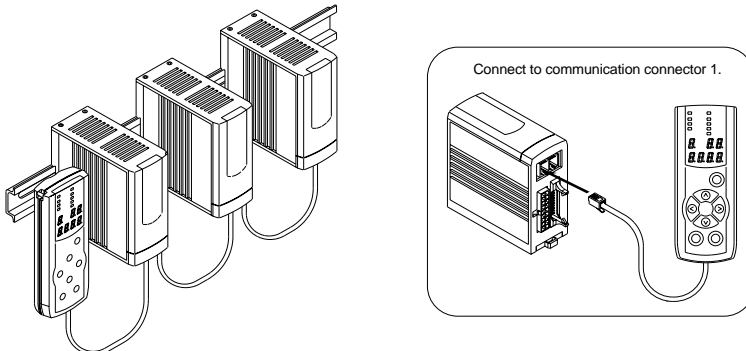
LC6C-220AD



Connection Example

Wiring to the teaching box

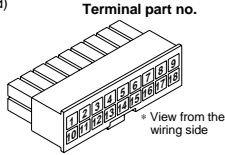
By connecting multiple drivers (maximum of 16), they can be set by one teaching box.
(When the teaching box is in use, external input to the drivers become invalid.)



Connection Examples

Power connector wiring

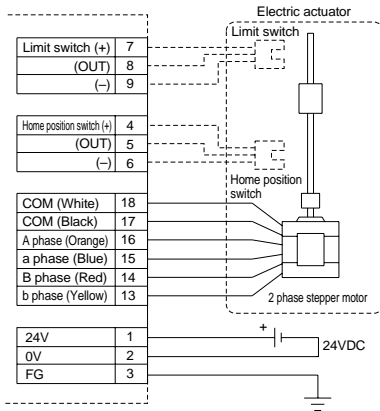
Connector: Power connector (included)
 Manufacturer: Molex Japan, Co., Ltd.
 Part no.: Receptacle 5557-18R
 Female terminal 5556PBTL



Switches

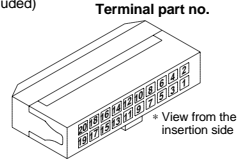
Home position switch: This switch indicates the home position. Connect this switch when returning to the origin point. This switch also acts as a sensor that detects overrun in the motor direction.

Limit switch: This sensor detects overrun in the end direction. Connect this switch as needed.

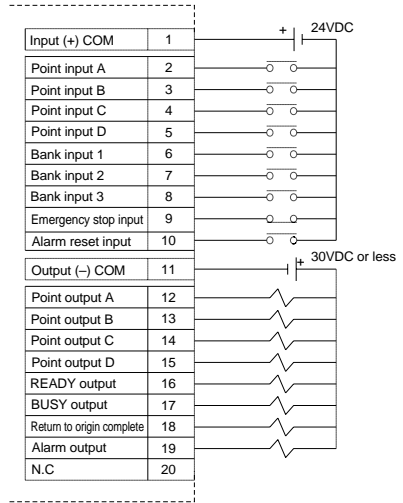


Interface connector wiring

Connector: Interface connector (included)
 Manufacturer: OMRON Corporation
 Part no.: Connector XG64M-2030-T



A ▽ mark is located on the connector number 1 side.



Power connector input/output signal details

Connector no.	Signal description	Detail
1	24V	Connect to power supply (+24VDC)
2	0V	Connect to power supply (0V)
3	FG	Connect to frame ground
4	Home position switch (+)	Connect to home position switch positive power supply line
5	Home position switch (OUT)	Connect to home position switch output line
6	Home position switch (-)	Connect to home position switch 0V power supply line
7	Limit switch (+)	Connect to limit switch positive power supply line
8	Limit switch (OUT)	Connect to limit switch output line
9	Limit switch (-)	Connect to limit switch 0V power supply line
10	N.C.	Do not connect.
11	N.C.	Do not connect.
12	N.C.	Do not connect.
13	b phase (Yellow)	Connect to actuator power line (Yellow)
14	B phase (Red)	Connect to actuator power line (Red)
15	a phase (Blue)	Connect to actuator power line (Blue)
16	A phase (Orange)	Connect to actuator power line (Orange)
17	COM (Black)	Connect to actuator power line (Black)
18	COM (White)	Connect to actuator power line (White)

⚠ Caution

Use a 3 wire NPN type for each switch.

Interface connector input/output signal details

Connector no.	Signal description	Details
1	Input (+) COM	Input COM signal
2	Point input A	Point setting input (point A)
3	Point input B	Point setting input (point B)
4	Point input C	Point setting input (point C)
5	Point input D	Point setting input (point D)
6	Bank input 1	Bank setting input (binary, first bit)
7	Bank input 2	Bank setting input (binary, second bit)
8	Bank input 3	Bank setting input (binary, third bit)
9	Emergency stop input	Emergency stop input
10	Alarm reset input	When an alarm occurs, this signal turns off the alarm after the cause is resolved.
11	Output (-) COM	Output COM signal (GND)
12	Point output A	This signal indicates move completion for point input A.
13	Point output B	This signal indicates move completion for point input B.
14	Point output C	This signal indicates move completion for point input C.
15	Point output D	This signal indicates move completion for point input D.
16	READY output	This signal indicates that the controller is ready.
17	BUSY output	This signal indicates motor control in progress.
18	Home position return output	This signal indicates that home position return is completed.
19	Alarm output	This signal indicates occurrence of alarm.
20	N.C.	Do not connect.

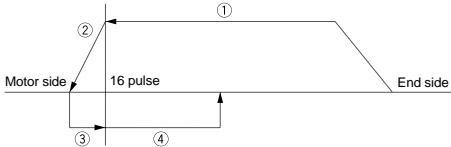
⚠ Caution

If input is not provided as prescribed for the operation, this may cause malfunction or failure.

Series LC6C

Home Position Return

1 Operation



Home position sensor position

- ① Moves to the motor side at home position return speed
- ② Decelerates and stops at the home position sensor ON position
- ③ Moves to the end side at low speed
- ④ Moves and stops at 16 pulse position from the home position sensor OFF position

2 Operating procedures

1. Confirm that both READY output and alarm output are ON.
2. Turn OFF bank inputs 1 to 3. [Specify bank 0.]
3. When point input A is turned ON, the actuator begins to return to the home position.
4. BUSY output is turned ON during home position return.
5. BUSY output is turned OFF when the actuator reaches the home position, and home position return output turns ON.
6. Turn OFF point input A.

Note) The actuator stops if point input A is turned OFF when BUSY output is ON (home position return movement in progress).

3 Home position return speed

Speed is set by parameter number 0D.

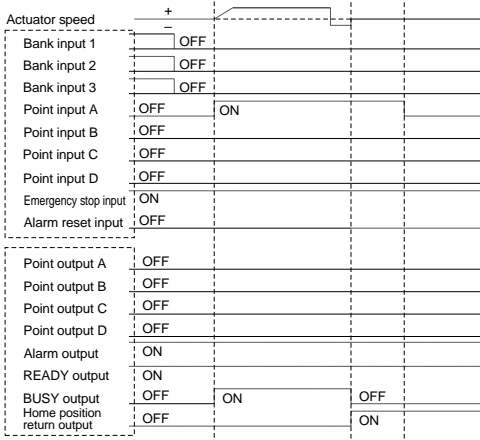
1. 015

Acceleration no. Speed no.

4 Home position return signal

This signal output turns ON when the home position return movement completes. It turns OFF when an alarm occurs or when JOG movement takes place.

5 Time chart

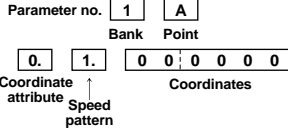


Point Movement

With this driver, a maximum of 28 point positions can be set by combining banks and points. With the combination of bank and point inputs, the actuator can move to the position indicated by each point.

1 Setting detail

To set point settings, use the parameter setting and teaching functions of the dedicated teaching box.

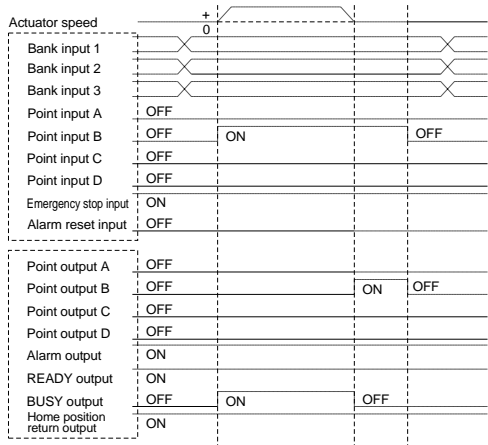


2 Operating procedures

1. Confirm that both READY output and alarm output are ON.
2. Set bank with bank inputs 1 to 3. [Bank 1 to 7.]
3. When points are specified with point inputs A to D, the actuator starts to move.
4. BUSY output is ON while the actuator is moving.
5. BUSY output turns OFF when the move completes and point outputs A to D turn ON. These correspond to point inputs A to D that are ON.
6. When point inputs A to D are turned OFF, point outputs A to D turn OFF.

Note) The actuator stops moving if point inputs A to D are turned OFF or two or more of point inputs A to D are turned ON while BUSY output is ON (during movement).

3 Time chart (when specifying point B)





Performance/Specifications

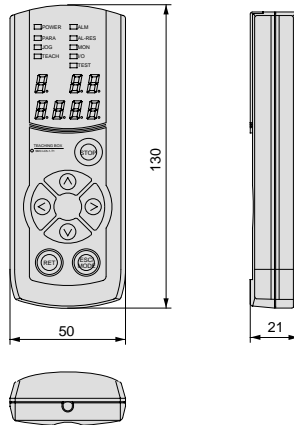
General specifications

Part no.	LC5-1-T1-02
Power supply	Supplied by LC6C-220AD
Dimensions	130mm x 50mm x 21mm
Weight	110g
Body type	Resin body
Indication unit	7 LED numerical indicators, 9 LED indicator lights
Operation unit	Key switches
Cable length	2m

Basic performance

	Performance/Specifications
Applicable controller	LC6C-220AD
Operating temperature range	5° to 40°C
Communication method	Conforming to RS485
Functions	Parameter change, JOG operation, alarm reset, teaching, test
Protective function indication	Alarm code

Dimensions



LJ1

LG1

LC1

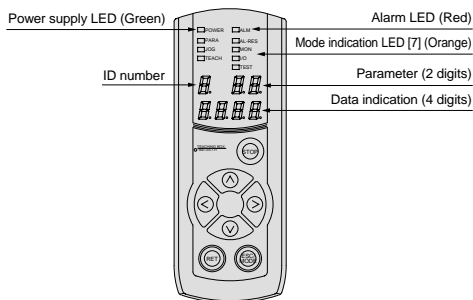
LX

LC6D/LC6C

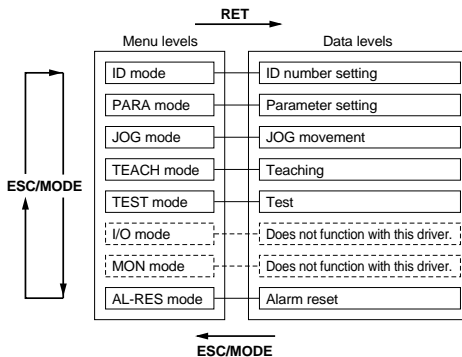
Switches

Series LC6C

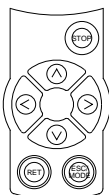
Part Descriptions



Operating Method



Key Arrangement and Functions



As shown above, 6 modes are available. (I/O mode and MON mode do not function with this driver.) When the communication mode is started by the teaching box, a menu can be selected with [ESC/MODE]. Select the mode indication LED for the mode to be implemented (all mode indication LEDs turn Off in the ID mode) and press [RET] to start each mode. Refer to the instruction manual for the operation of each mode.

Mark	Key description	Function
∧	UP	Increases a numerical value.
∨	DOWN	Reduces a numerical value.
<	L	Moves a numerical value place to the left. Rotates the motor counter clockwise during JOG operation.
>	R	Moves a numerical value place to the right. Rotates the motor clockwise during JOG operation.
STOP	STOP	Becomes the emergency stop key when the actuator is moving.
ESC/MODE	ESC/MODE	Selects a mode. Completes each mode and returns to the mode level.
RET	RET	Determines the mode and records data.

⚠ Caution

STOP key only stops the driver that is in communication.

Alarm Details

Alarm no.	Alarm description	Presumed cause and solution
1	Emergency stop input	Emergency stop input is turned OFF (open).
2	Temperature abnormality	The temperature inside the driver is high. Check the installation environment and operation frequency.
3	Power supply abnormality	Operating beyond the range of the specified power supply. Adjust the power supply.
4	Limit switch abnormality	Home position switch and limit switch are operating. Malfunction such as loss of synchronism may have occurred. Check the equipment.

⚠ Caution

- Do not repeatedly apply bending stress or tension to the cables.
Wiring that subjects cables to repeated bending stress and tension causes line breakage.
- Make connections based on each driver's connection example.

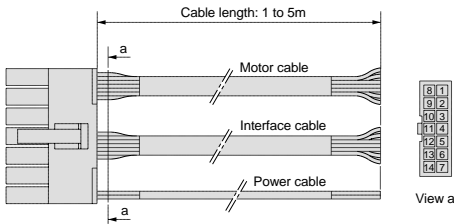
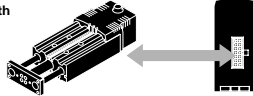
LC6D Connector Cable

Model LC6-1-C1-X258

Electric actuator

LC6D

- Cable length
 - 1 - 1m
 - 3 - 3m
 - 5 - 5m



Wiring

Pin no.	Cable description	Signal description	Color	Pin no.	Cable description	Signal description	Color
1	Interface cable	PD+	Yellow	8	Interface cable	PD-	Brown
2		CCW+	Red	9		CCW-	Green
3		CW+	Black	10		CW-	White
4	Motor cable	Motor B	White	11	Motor cable	Motor F	Brown
5		Motor A	Black	12		Motor E	Yellow
6	Power cable	GND	Black	13	Motor cable	Motor D	Green
7		+24V	White	14		Motor C	Red

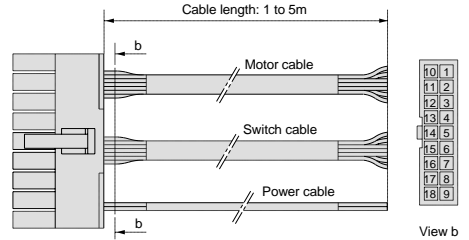
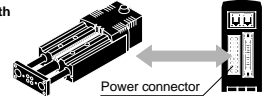
LC6C Power Connector Cable

Model LC6-1-C2-X252

Electric actuator

LC6C

- Cable length
 - 1 - 1m
 - 2 - 2m
 - 5 - 5m



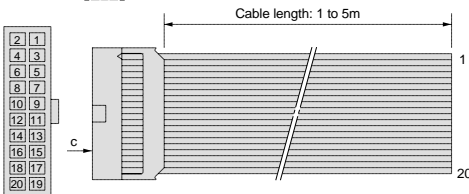
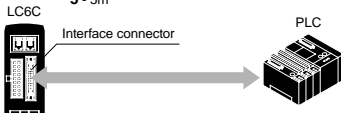
Wiring

Pin no.	Cable description	Signal description	Color
1	Power cable	+24V	White
2		0V	Black
3		FG	Red
4	Switch cable	Home position switch (+)	White
5		Home position switch (OUT)	Black
6		Home position switch (-)	Brown
7		Limit switch (+)	Yellow
8		Limit switch (OUT)	Green
9	Motor cable	Limit switch (-)	Red
13		Motor wire (Yellow)	Red
14		Motor wire (Red)	Green
15		Motor wire (Blue)	Yellow
16		Motor wire (Orange)	Brown
17		Motor wire (Black)	Black
18		Motor wire (White)	White

LC6C Interface Connector Cable

Model LC6-1-C3-X252

- Cable length
 - 1 - 1m
 - 2 - 2m
 - 5 - 5m

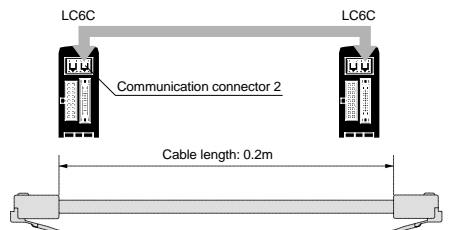


View c

LC6C Driver Connection Cable

Model LC5-1-C1-02-X252

- Cable length 0.2m





Applicable Actuators

D-F9	Series LXF*, LXP, LXS
D-Y7GL	Series LJ1 (non-standard motor)

* Cannot be mounted on Series LXF with ball screw specification.

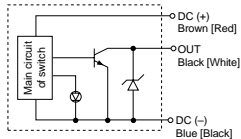
Auto Switch Specifications

Auto switch part no.	D-F9N	D-F9P	D-F9B	D-F9G	D-F9H
Contact	N.O. (A contact)			N.C. (B contact)	
Electrical entry	In-line				
Wiring type	3 wire		2 wire	3 wire	
Output type	NPN	PNP	—	NPN	PNP
Applicable load	IC circuit, Relay, PLC		24VDC relay, PLC	IC circuit, Relay, PLC	
Power supply voltage	5, 12, 24VDC (4.5 to 28V)		—	5, 12, 24VDC (4.5 to 28V)	
Current consumption	10mA or less		—	10mA or less	
Load voltage	28VDC or less	—	24VDC (10 to 28VDC)	28VDC or less	—
Load current	40mA or less	80mA or less	5 to 40mA	40mA or less	80mA or less
Internal voltage drop	1.5V or less (0.8V or less at load current of 10mA)	0.8V or less	0.4V or less	1.5V or less (0.8V or less at load current of 10mA)	0.8V or less
Leakage current	100µA or less at 24VDC		80mA or less	100µA or less at 24VDC	
Indicator light	Red LED lights up when ON			Red LED lights up when OFF	

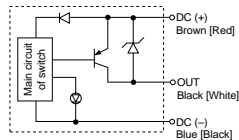
Auto switch internal circuits

Lead wire colors inside [] are those prior to conformity with IEC standards.

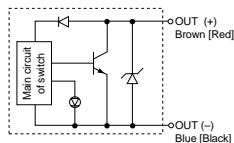
D-F9G, D-Y7GL



D-F9P, D-F9H



D-F9B



- Lead wire ——— Oil resistant heavy duty vinyl cord, ø2.7, 0.15mm² x 3 wire (Brown, Black, Blue [Red, White, Black]), 0.18mm² x 2 wire (Brown, Blue [Red, Black])
- Insulation resistance ——— 50MΩ or more at 500VDC (between lead wire and case)
- Withstand voltage ——— 1000VAC for 1 min. (between lead wire and case)
- Indication light ——— Lights when ON
- Ambient temperature ——— -10 to 60°C
- Operating time ——— 1ms or less
- Impact resistance ——— 1000m/s²

Auto switch part no.	D-Y7GL
Contact	N.C. (B contact)
Electrical entry	In-line
Wiring type	3 wire
Output type	NPN
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24VDC (4.5 to 28V)
Current consumption	10mA or less
Load voltage	28VDC or less
Load current	40mA or less
Internal voltage drop	1.5V or less (0.8V or less at load current of 10mA)
Leakage current	100µA or less at 24VDC
Indicator light	Red LED lights up when OFF

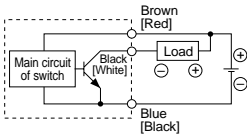
Switches

Solid State Switch Connection and Examples

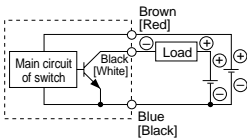
Basic Wiring

3 wire, NPN

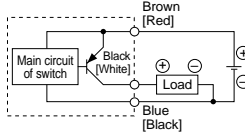
(When the switch power supply and load power supply are the same)



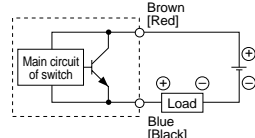
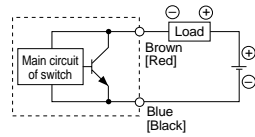
(When the switch power supply and load power supply are separate)



3 wire, PNP

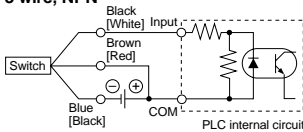


2 wire

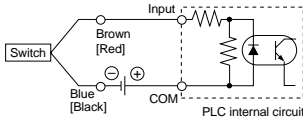


Examples of Connection to PLC

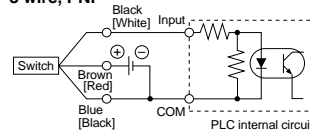
Sink input specifications, 3 wire, NPN



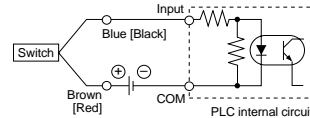
2 wire



Source input specifications, 3 wire, PNP



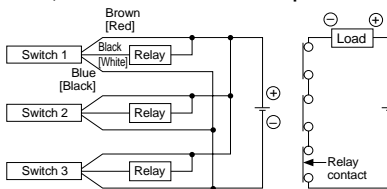
2 wire



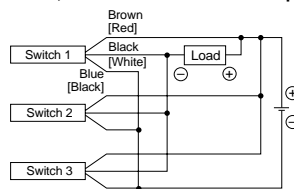
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

Connection Examples for AND (Series) and OR (Parallel)

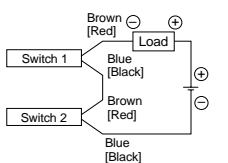
3 wire, AND connection for NPN output



3 wire, OR connection for NPN output



2 wire with 2 switch AND connection

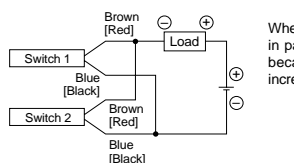


When two switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the switches are in the ON state.

Load voltage at ON = Power supply voltage - Residual voltage x 2 pcs.
= 24V - 4V x 2 pcs.
= 16V

Example: Power supply voltage is 24VDC.
Internal voltage drop in switch is 4V.

2 wire with 2 switch OR connection



When two switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
= 1mA x 2pcs. = 3kΩ
= 6V

Example: Load impedance is 3kΩ.
Leakage current from switch is 1mA.

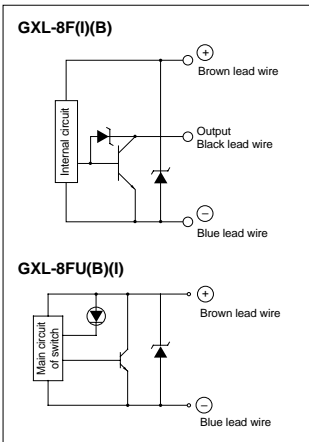
Applicable switch models

Applicable model	Model type	Part no.	Switch type	
LXF LXS	G	GXL-8F	Standard	N.O. (A contact) 3 wire
	GD	GXL-8FI	Varying frequencies	N.O. (A contact) 3 wire
	GB	GXL-8FB	Standard	N.C. (B contact) 3 wire
	GDB	GXL-8FIB	Varying frequencies	N.C. (B contact) 3 wire
	GU	GXL-8FU	Standard	N.O. (A contact) 2 wire
	GUB	GXL-8FUB	Standard	N.C. (B contact) 2 wire

Switch specifications (SUNX Corporation)

Part no.		GXL-8F(I)(B)	GXL-8FU	GXL-8FUB
Repeatability		Direction of detecting axis, Perpendicular to detecting axis: 0.04mm or less		
Power supply voltage		12 to 24VDC $\pm 10\%$, Ripple P-P 10% or less		
Current consumption		15mA	0.8mA or less (when output is OFF)	
Output		NPN Maximum load current: 100mA Maximum applied voltage: 30VDC Residual voltage: 1V or less	2 wire solid state DC Load current: 3 to 70mA Residual voltage: 3V or less	
Maximum response frequency		500Hz	1kHz	
Indicator light		Red LED (lights up when ON)	Green LED (stable detection) Red LED (unstable detection)	
Environmental resistance	Ambient temperature	-10° to 55° C	-25° to 70° C	
	Ambient humidity	45 to 85% RH		
	Noise resistance	Power line: 240Vp, pulse width of 0.5 μ s		
Detecting distance fluctuation	Temperature characteristics	Within $\pm 15\%$ – 10% of detecting distance at 20° C within ambient temperature range		
	Voltage characteristics	Within $\pm 2\%$ with $\pm 10\%$ fluctuation of operating voltage		
Cable		0.08mm 3 wire heavy duty cable 1m	0.15mm 2 wire heavy duty cable 1m	

Proximity switch internal circuit



Proximity Switch/Switch Plate Mounting

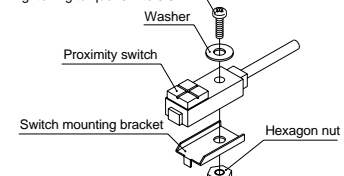
Be sure to use the mounting screws included, and mount the proximity switch as shown in the drawing to the right.

Mount the switch plate as shown below. Always use the proper tightening torque and use a thread locking agent on screws to prevent loosening.

The switch body is made of PBT and acrylic resin. Select a thread locking agent that will not affect these materials.

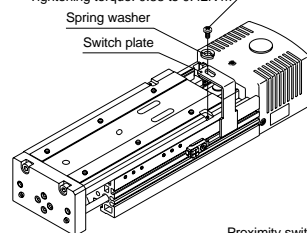
Button head screw (M2.6 x 10)

Tightening torque: 0.4 to 0.5N·m



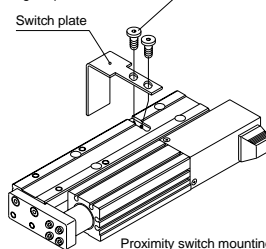
Round head screw (M2.5 x 5)

Tightening torque: 0.38 to 0.42N·m



Thin head screw (M3 x 4)

Tightening torque: 0.38 to 0.42N·m



Proximity switch mounting position

LXF

1mm or more

Proximity switch mounting position

1mm or more

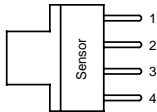
LXS

1mm or more

Standard Photo Micro Sensor for Home Position (OMRON Corporation)

Rating

Power supply voltage	5 to 24VDC $\pm 10\%$, Ripple (p-p) 10% or less		
Current consumption	35mA or less		
Control output	5 to 24VDC load current (Ic) 100mA, Residual voltage 0.8V or less Load current (Ic) 40mA, Residual voltage 0.4V or less		
Ambient temperature	Operation: -25° to 55° C (When stored: -30° to 80° C)		
Ambient humidity	Operation: 5 to 85%RH (When stored: 5 to 95%RH)		
Part no.	EE-SX672 equivalent	EE-SX673 equivalent	EE-SX674
Applicable actuator	LXF	LXP, LXS	LG1 (non-standard motor)



Terminal arrangement

1	Brown	Vcc \oplus
2	White	L*
3	Black	OUTPUT
4	Blue	GND (OV) \ominus

* Normally ON when light is blocked.
However, if the (L) terminal and \oplus terminal are shorted, it changes to ON when light enters.

Output level circuit

Operating condition of output transistor	ON when light enters	ON when light is blocked
Output circuit		
	<p>* Normally ON when light is blocked. However, if the (L) terminal and \oplus terminal are shorted, it changes to ON when light enters.</p>	
Time chart	<p>(“L” and “+” shorted)</p> <p>Light enters Light blocked</p> <p>Lighted indicator light (Red) Light ON Light Off</p> <p>Output Transistor ON OFF</p> <p>Load 1 (Relay) Operate Return</p> <p>Load 2 H L</p>	<p>(“L” and “+” open)</p> <p>Light enters Light blocked</p> <p>Lighted indicator light (Red) Light ON Light Off</p> <p>Output Transistor ON OFF</p> <p>Load 1 (Relay) Operate Return</p> <p>Load 2 H L</p>

LG1

LG1

LG1

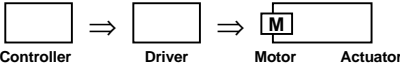
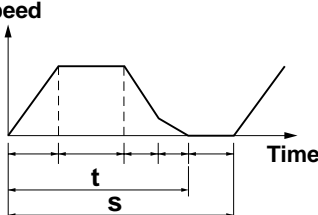
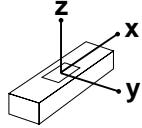
LX

LC6D/LC6C

Switches

Inquiry Sheet

Fill out the form and contact the nearest SMC sales office or distributor.

Name of customer	Company name		
	Dept.	Contact person	
Contact phone/fax no.	Telephone	Fax	
Mounting orientation	Horizontal, Horizontal wall mount, Horizontal reverse mount, Vertical		
Work piece load (kg)			
Stroke (mm)			
Speed (mm/s)			
Positioning repeatability (mm)	±0.1, ±0.05, ±0.02		
Components Circle components provided by customer.	Units required  <p style="margin-left: 40px;"> Controller ⇒ Driver ⇒ Motor Actuator </p> <ul style="list-style-type: none"> • Actuator only • Actuator + Motor • Actuator + Motor + Driver (controller) <p style="text-align: right; margin-right: 20px;">} Proceed to ①.</p> <p>① Motor/Driver: Yes (Manufacturer: _____, Part no.: _____) : No — Proceed to ②.</p> <p>② Controller/Driver selection:</p> <p>a) Controller provided by customer PLC (Manufacturer: _____, Part no.: _____) Positioning unit (pulse output function): Yes, No</p> <p>b) Driver specifications Power supply: 24VDC, 100VAC, 200VAC International standard compatibility: None, CE, UL</p> <p>c) Motor type: AC servomotor, Stepper motor (2 phase/5 phase), Brushless motor</p>		
	Operation pattern Describe in detail.		
Tact time	 <p style="margin-left: 600px;"> Confirm the amount of time in seconds needed to cover the moving distance. Moving distance: _____ mm t = Tact time: _____ s S = Cycle time: _____ s </p>		
Work piece moment	Example) Projection distance  <p style="margin-left: 600px;"> X: _____ mm Y: _____ mm Z: _____ mm </p>		
Environment	General, Clean room, Mist environment, Dusty environment		



Electric Actuators Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 10218 (Note 1), JIS 8433 (Note 2) and other safety practices.

⚠ Caution: Operator error could result in injury or equipment damage.

⚠ Warning: Operator error could result in serious injury or loss of life.

⚠ Danger: In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 10218: Manipulating industrial robots - Safety

Note 2) JIS 8433: General Rules for Robot Safety

⚠ Warning

1. The compatibility of electric actuators is the responsibility of the person who designs the system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific system must be based on specifications or after analysis and/or tests to meet your specific requirements.

2. Only trained personnel should operate this equipment.

Electric actuators can be dangerous if an operator is unfamiliar with them. Assembly, handling or repair of systems using electric actuators should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above, and shut off the power supply for this equipment.
3. Before machinery/equipment is restarted, confirm that safety measures are in effect.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, medical equipment, food and beverages, or safety equipment.
3. An application which has the possibility of having negative effects on people, property or animals, requiring special safety analysis.

5. To operate properly, read the instruction manual carefully, or confirm with the distributor or SMC before use.

6. Carefully read the handling precautions in this catalog for proper operation.

7. Operating applications and/or locations are restricted for some products in this catalog. Confirm with the distributor or SMC.



Electric Actuator Precautions 1

Be sure to read before handling.

General

Operation

⚠ Caution

1. In order to ensure proper operation, be certain to read the instruction manual carefully. As a rule, handling or usage/operation other than that contained in the instruction manual are prohibited.
2. If the actuator will be used in an environment where it will be exposed to chips, dust, cutting oil (water, liquids), etc., a cover or other protection should be provided.
3. Operate with cables secured. Avoid bending cables at sharp angles where they enter the actuator, and also make sure that cables do not move easily.

Design

⚠ Warning

1. In cases where dangerous conditions may result from power failure or malfunction of the product, install safety equipment to prevent damage to machinery and human injury. Consideration must also be given to drop prevention with regard to suspension equipment and lifting mechanisms.
2. Consider possible loss of power sources.

Take measures to protect against human injury and machine damage in the event that there is a loss of air pressure, electricity or hydraulic power.
3. Consider emergency stops.

Design so that human injury and/or damage to machinery and equipment will not be caused when machinery is stopped by a safety device under abnormal conditions such as a power outage or a manual emergency stop.
4. Consider the action when operation is restarted after an emergency stop or abnormal stop.

Design the machinery so that human injury or equipment damage will not occur upon restart of operation.

Selection

⚠ Warning

1. Confirm the specifications.

The products in this catalog should not be used outside the range of specifications, as this may cause damage or malfunction, etc. (Refer to specifications.)

Mounting

⚠ Caution

1. Take care that cables are not caught by actuator movement.
2. Do not use in locations where there is vibration or impact shock. Contact SMC before using in this kind of environment, as damage may result.

Mounting

⚠ Caution

3. Give adequate consideration to the arrangement of wiring, etc., when mounting. If wiring is forced into inappropriate arrangement, this may lead to breaks in the wiring and result in malfunction.

Operating Environment

⚠ Caution

1. Avoid use in the following environments.
 1. Locations with a lot of debris or dust, or where chips may enter.
 2. Locations where the ambient temperature is outside the range of the temperature specification (refer to "Specifications").
 3. Locations where the ambient humidity is outside the range of the humidity specification (refer to "Specifications").
 4. Locations where corrosive or combustible gases are generated.
 5. Locations where strong magnetic or electric fields are generated.
 6. Locations where direct vibration or impact shock, etc., will be applied to the actuator unit.
 7. Locations with a lot of dust, or where water or oil splashes on the actuator.

Maintenance

⚠ Warning

1. Perform maintenance according to the procedures indicated in the instruction manual.

If handled improperly, malfunction and damage of machinery or equipment may occur.
2. Removal of equipment
When equipment is to be removed, first confirm that measures are in place to prevent dropping or runaway of driven objects, etc., and then proceed after shutting off the electric power. When starting up again, proceed with caution after confirming that conditions are safe.

Actuator

Design

⚠ Warning

1. There is a possibility of dangerous sudden action by actuators if sliding parts of machinery are twisted due to external forces, etc.

In such cases, human injury may occur, e.g., by catching hands or feet in the machinery, or damage to the machinery itself may occur. Therefore, the machine should be adjusted for smooth operation and designed to avoid such dangers.

2. A protective cover is recommended to minimize the risk of human injury.

If a driven object and moving parts of an actuator pose a danger of human injury, design the structure to avoid contact with the human body.



Electric Actuator Precautions 2

Be sure to read before handling.

Actuator

Design

Warning

- Securely tighten all stationary parts and connected parts of electric actuators so that they will not become loose.

Avoid use in locations where direct vibration or impact shock, etc., will be applied to the body of the actuator.

Usage

Caution

- Perform the following inspections before operating an actuator/controller.
 - Inspection for damage to the actuator/controller power line and each signal wire
 - Inspection for looseness of the connector to each power line and signal line
 - Inspection for looseness of the actuator/controller mounting
 - Inspection for abnormal operation of the actuator/controller
 - Emergency stop function
- Implement preventive measures such as a fence or enclosure to prevent human entry to the operating area of the actuator/controller and related equipment.
- Take measures to perform an emergency stop by using a sensor, etc., in case of human entry into the area described above.
- Take necessary measures to prevent danger from related equipment in case the actuator/controller stops due to an abnormal condition.
- Take necessary measures to prevent danger from the actuator/controller in case of the related equipment in an abnormal condition.
- Take necessary measures to prevent cuts and damage to the actuator/controller power supply, power line, and each signal line from pinching, shearing, getting caught, scratching or rubbing, etc.
- If abnormal heating, smoking or fire, etc., occurs in the actuator/controller, immediately shut off the power supply.
- When installing, adjusting, inspecting or performing maintenance on the actuator/controller, be sure to shut off the power supply to the actuator/controller and related equipment. Then, lock it so that no one other than the person working can turn the power on, or implement measures such as a safety plug. Also, post a sign in a conspicuous place to inform that work is being performed.
- When more than one person is performing work, decide on the procedures, signals, measures and resolution for abnormal conditions before beginning the work. Also, designate a person to supervise work other than those performing work.

Operation

Caution

- This actuator can be used within its allowable range with a direct load applied, but when connected to a load having an external guide mechanism careful alignment is necessary. The longer the stroke, the greater the amount of variation in the center axis, and therefore, a method of connection which can absorb the displacement should be considered.
- Since the bearing parts and parts surrounding the lead screw are adjusted at the time of shipment, do not change the setting of the adjusted parts.
- This actuator can be used without lubrication. In the event that lubrication is applied, a special grease must be used. Confirm with SMC or the distributor upon purchasing.
- If the electric actuator is repeatedly operated for short stroke cycles (20mm for LJ, 10mm for LX), this may cause loss of grease. Therefore, operate the actuator for a full stroke once every 40 to 60 cycles.
- Motor rotation should be one rotation or more per second for an electric actuator with stepper motor specification.

However, since vibration from the motor is large with low rotations (2 rotations or less) and may affect the work piece, confirm the operating conditions before operating.

Mounting

Caution

- Do not use until you verify that the equipment can operate properly.
- The product should be mounted and operated after thoroughly reading the instruction manual and understanding its contents.
- Do not dent, scratch or cause other damage to the body and table mounting surfaces.

This may cause a loss of parallelism in the mounting surfaces, looseness in the guide unit, an increase in operating resistance or other problems.
- When attaching a work load, do not apply strong impact shock or a large moment.

If an outside force exceeding the allowable moment is applied, this may cause looseness in the guide unit, an increase in sliding resistance or other problems.
- When connecting a load having an external support or guide mechanism, be sure to select a suitable connection method and perform careful alignment.



Electric Actuator Precautions 3

Be sure to read before handling.

Controller/Driver/Positioning Driver/Regenerative Absorption Unit

Handling

⚠ Warning

1. Never touch the inside of the controller/driver unit. It may cause electric shock or failure.
2. The motor and controller/driver should be used in the designated combinations.

⚠ Caution

1. Do not disassemble or modify the equipment. This may cause failure, malfunction or fire.
2. Do not touch the driver during energizing or for a few minutes after de-energizing due to high temperature.
3. When fire or danger to personnel is predicted due to abnormal heating, burning or smoking of the product, shut off the power supply to the main unit and the system immediately.

Power Supply

⚠ Caution

1. In cases where voltage fluctuations greatly exceed the prescribed voltage, a constant voltage transformer, etc., should be used to operate within the prescribed range.
2. Use a power supply that has low noise between lines and between power and ground. In cases where noise is high, an isolation transformer should be used.
3. Perform wiring by separating the power supply from the general-purpose input/output and control terminal interface power supply (24VDC).
4. Avoid bundling the power supply lines together with, or routing them near, the general-purpose input/output lines, control terminal output lines and encoder signal lines.
5. Implement measures to protect against surge from lightning. When doing this, separate the lightning surge absorber ground from the controller ground.

Grounding

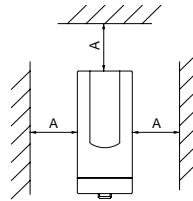
⚠ Caution

1. Be sure to carry out grounding in order to ensure the noise tolerance of the controller.
2. Dedicated grounding should be used as much as possible. Grounding should be to a type 3 ground. (Ground resistance of 100Ω or less.)
3. Grounding should be as close as possible to the controller, and the ground wires should be as short as possible.
4. In the unlikely event that malfunction is caused by the ground, it may be disconnected.

Mounting

⚠ Caution

1. Mount the controller/driver on non-combustible substance. Mounting directly on or closely to combustible material may cause fire.
2. Provide cooling so that the operating temperature of the body will be within the range shown in the specifications. For that reason, each face of the body should be separated by a sufficient amount of distance from other construction or components.



* Provide the following distances:
 A = 80mm for LC1
 A = 50mm or more for LC6, LC7R

3. Avoid mounting the controller/driver on a panel where a vibration source such as large size electromagnetic contactor or circuit fuse breaker is also mounted. If the driver is mounted on the same panel with such a vibration source, it should be separated from the source.
4. Design the machinery so that the product can be freely connected/disconnected after installation.
5. When there are dents, bumps or warping on the mounting surface of the controller, excessive force will be applied to the frame or case and will cause failure. Therefore, mount the controller on a flat surface.

Wiring

⚠ Danger

1. Adjusting, mounting or wiring change should never be done before shutting off the power supply to this product. There is a danger of electric shock.

⚠ Caution

1. Wiring should be properly completed.
 Do not apply any voltage to the terminals other than those specified in the instruction manual. The unit may be damaged.
2. Connector should be securely connected.
3. Be sure to take measures against noise .
 Noise in a signal line may cause malfunction. As a counter-measure, separate high voltage wires and low voltage wires, and shorten wiring lengths, etc.
4. When connecting the electric actuator motor power line and encoder signal line, carefully confirm their corresponding indications and the connector orientation.



Electric Actuator Precautions 4

Be sure to read before handling.

Controller/Driver

Wiring

⚠ Caution

- Never disassemble the electric actuator motor power line and encoder signal line. Also, if using a cable prepared by the customer (user), confirm that it satisfies the electrical wire size and is not subject to noise influence as described in the instruction manual.
- Avoid bundling the electric actuator power line and encoder signal line with 100VAC wiring and other high voltage wiring. Separate them as much as possible.
- Never connect/disconnect the control terminal, general purpose input/output terminal, motor power line or encoder signal line while the controller power supply is ON.

Brake

There exists a very slight possibility of failure of the brake mechanism; should this occur, inertial running may be seen in the system. To prepare for such a failure, safety measures for machinery should be carefully considered and implemented. Multiple safety measures should be taken particularly for use as a safety brake.

Construction

⚠ Danger

- Do not use in flammable or explosive atmospheres.
Slip during activation or braking may generate sparks. Never use in grease or combustible gas atmospheres which have a possibility of flash or explosion.
- Not applicable for braking.
This brake is a de-energized operating type designed only for holding and emergency stoppage. If repeatedly used for braking, its original performance and specifications can easily deteriorate within a short time and brake releasing becomes impossible. If used in this way, the brake will be damaged and holding performance will definitely be compromised, leading to accidents such as runaway of machinery. Refer to the instruction manual for the brake wiring and perform wiring securely. Confirm that the brake operates properly during a daily inspection.

Before Mounting

⚠ Danger

- Use the appropriate wire size for the power supply capacity.
If insufficient wire size is used, the insulation covering will be melted and electric shock or fire may result.
- Start operation after confirming proper electrical wiring for the brake.
The brake is locked in the de-energized state. 24VDC is needed to release the lock. Confirm that the wiring is appropriate for the purpose and application.

Brake

During Operation

⚠ Danger

- Immediately stop operation if abnormal operation noise or vibration occurs.

In case abnormal operation noise or vibration occurs, the product may have been improperly mounted. Unless operation is stopped for inspection, machinery may be seriously damaged.

- Do not touch the brake unit while in operation.

The brake unit surface temperature increases to approximately 90°C to 100°C due to slip heat and heat generated by the built-in coils. As this may cause burns, do not touch the brake unit when in operation. Furthermore, since the brake unit surface may become heated to a high temperature just by energization, do not touch the brake unit.

Maintenance and Inspection

⚠ Danger

- Do not apply oil or water.

If water or oil is applied to friction surfaces or even to the body, torque performance will be compromised drastically, and the system may overrun causing human injury.

Operation

⚠ Caution

- The brake coils do not have polarity.
- The brake power supply should be provided by customer. Furthermore, do not share the brake power supply and control signal power supply (VDC).
- Install a surge absorber to suppress the surge voltage caused by turning the relay (RY) ON/OFF. Note that when using diodes, the time required between releasing the brake and starting of operation will be longer than the type using a surge absorber. A varistor is included.
- If the brake is to be activated in the event of power loss, make a connection that will shut off the brake power supply instantaneously.
- When releasing the brake for an inspection, etc., the work piece will drop due to its own weight. Ensure sufficient safety before beginning work.
- Since 0.1s or more* is required for the opening and closing of the brake, allow for this time lapse when designing.

* The opening/closing time of the brake may change due to a sequence circuit or relay, etc.

Installation

⚠ Caution

- When mounting the actuator vertically, select a type with brake for safety. Install the unit so that the side with brake will be the bottom end.



Auto Switch Precautions 1

Be sure to read before handling.

Refer to the appropriate section in this catalog regarding detailed precautions for each series.

Design and Selection

Warning

1. Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside the range of specifications of load current, voltage, temperature or impact.

2. Keep wiring as short as possible.

Although wire length should not affect switch function, use a wire 100m or shorter.

3. Do not use a load that generates surge voltage.

Although a zener diode for surge protection is connected at the output side of a solid state auto switch, damage may still occur if the surge is applied repeatedly. When a load, such as a relay or solenoid, which generates surge is directly driven, use a type of switch with a built-in surge absorbing element.

4. Ensure sufficient clearance for maintenance activities.

When designing an application, be sure to allow sufficient clearance for maintenance and inspections.

Mounting and Adjustment

Warning

1. Do not drop or bump.

Do not drop, bump, or apply excessive impacts (300m/s² or more) while handling. Even if the switch body is not damaged, there may be internal damage and possible malfunction.

2. Do not carry an actuator by the auto switch lead wires.

Never carry an actuator by its auto switch lead wires. This may not only cause broken lead wires, but it may cause internal elements of the switch to be damaged by the stress.

3. Mount switches using the proper tightening torque.

When a switch is tightened beyond the range of tightening torque, the mounting screws, mounting bracket or switch may be damaged. On the other hand, tightening below the range of tightening torque may allow the switch to slip out of position.

4. Mount a switch at the center of the operating range.

Adjust the mounting position of an auto switch so that the magnet stops at the center of the operating range (the range in which a switch is ON). If mounted at the end of the operating range (around the borderline of ON and OFF), operation may be unstable.

Wiring

Warning

1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from applying bending stress or stretching force to the lead wires.

2. Confirm proper insulation of wiring.

Be certain that there is no faulty wiring insulation (contact with other circuits, ground fault, improper insulation between terminals, etc.). Damage may occur due to excess current flow into a switch.

3. Do not wire with power lines or high voltage lines.

Wire separately from power lines or high voltage lines, avoiding parallel wiring or wiring in the same conduit with these lines. Control circuits containing auto switches may malfunction due to noise from these other lines.

4. Do not allow short circuit of loads.

All models of PNP output type switches do not have built-in short circuit protection circuits. If loads are short circuited, the switches will be instantly damaged.

Take special care to avoid reverse wiring with the brown [red] power supply line and the black [white] output line on 3 wire type switches.

5. Avoid incorrect wiring.

1) If connections are reversed (power supply line + and power supply line -) on a 3 wire type switch, the switch will be protected by a protection circuit. However, if the power supply line (+) is connected to the blue [black] wire and the power supply line (-) is connected to the black [white] wire, the switch will be damaged.

Note) Lead wire colors inside [] are those prior to conformity with IEC standards.

Maintenance

Warning

1. Perform the following maintenance periodically in order to prevent possible danger due to unexpected auto switch malfunction.

1) Retightening of switch mounting screws

If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.

2) Confirm that there is no damage to lead wires.

To prevent faulty insulation, replace switches or repair lead wires, if damage is discovered.



Auto Switch Precautions 2

Be sure to read before handling.

Refer to the appropriate section in this catalog regarding detailed precautions for each series.

Operating Environment

Warning

1. Never use in an atmosphere of explosive gases.

The construction of auto switches is not intended to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.

2. Do not use in an area where a magnetic field is generated.

Auto switches will malfunction or magnets inside actuators will become demagnetized.

3. Do not use in an environment where the auto switch will be continually exposed to water.

Do not use switches in applications where they will be continually exposed to water splash or spray. Poor insulation or swelling of the potting resin inside switches may cause malfunction.

4. Do not use in an environment with oil or chemicals.

Consult SMC if auto switches will be used in an environment with coolant, cleaning solvent, various oils or chemicals. If auto switches are used under these conditions for even a short time, they may be adversely affected by improper insulation, malfunction due to swelling of the potting resin, or hardening of the lead wires.

5. Do not use in an environment with temperature cycles.

Consult SMC if switches are used where there are temperature cycles other than normal air temperature changes, as they may be adversely affected internally.

6. Do not use in an area where surges are generated.

When there are units (solenoid type lifter, high frequency induction furnace, motor, etc.) which generate a large amount of surge in the area around actuators with solid state auto switches, this may cause deterioration or damage to the internal circuit elements of the switch. Avoid sources of surge generation and crossed lines.

7. Avoid accumulation of iron waste or close contact with magnetic substances.

When a large amount of ferrous waste such as machining chips or spatter is accumulated, or a magnetic substance (something attracted by a magnet) is brought into close proximity with an auto switch actuator, it may cause auto switches to malfunction due to a loss of the magnetic force inside the actuator.

Other

Warning

1. Consult SMC concerning water resistance, flexibility of lead wires, and usage at welding sites, etc.

Photo Micro Sensor and Proximity Switches

Incorrect Usage

Caution

1. Do not operate beyond the rated voltage range.

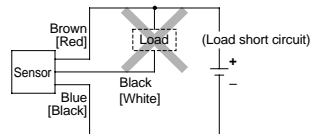
If applying voltage over the rated voltage range, equipment may be damaged.

2. Avoid incorrect wiring such as polarity of power supply.

Otherwise, equipment may be damaged.

3. Do not short circuit the load. (Do not connect to power supply.)

Otherwise, equipment may be damaged.



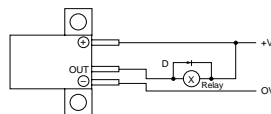
Note) Lead wire colors inside [] are those prior to conformity with IEC standards.

Other

Caution

1. Power lines and high voltage lines should not be in the same piping or duct with wiring of the photo micro sensor, as the system may malfunction or be damaged due to induction. Separate wiring or individual piping is required to avoid such trouble.

2. If operating with a small induction load such as a relay, wire as shown in the figure below. (In this case, be sure to connect a reverse voltage suppression diode.)





Electric Actuators

SMC CORPORATION

1-16-4 Shimbashi, Minato-ku, Tokyo 105-0004, JAPAN Tel: 03-3502-2740 Fax: 03-3508-2480
URL <http://www.smcworld.com> © 2001 SMC CORPORATION All Rights Reserved

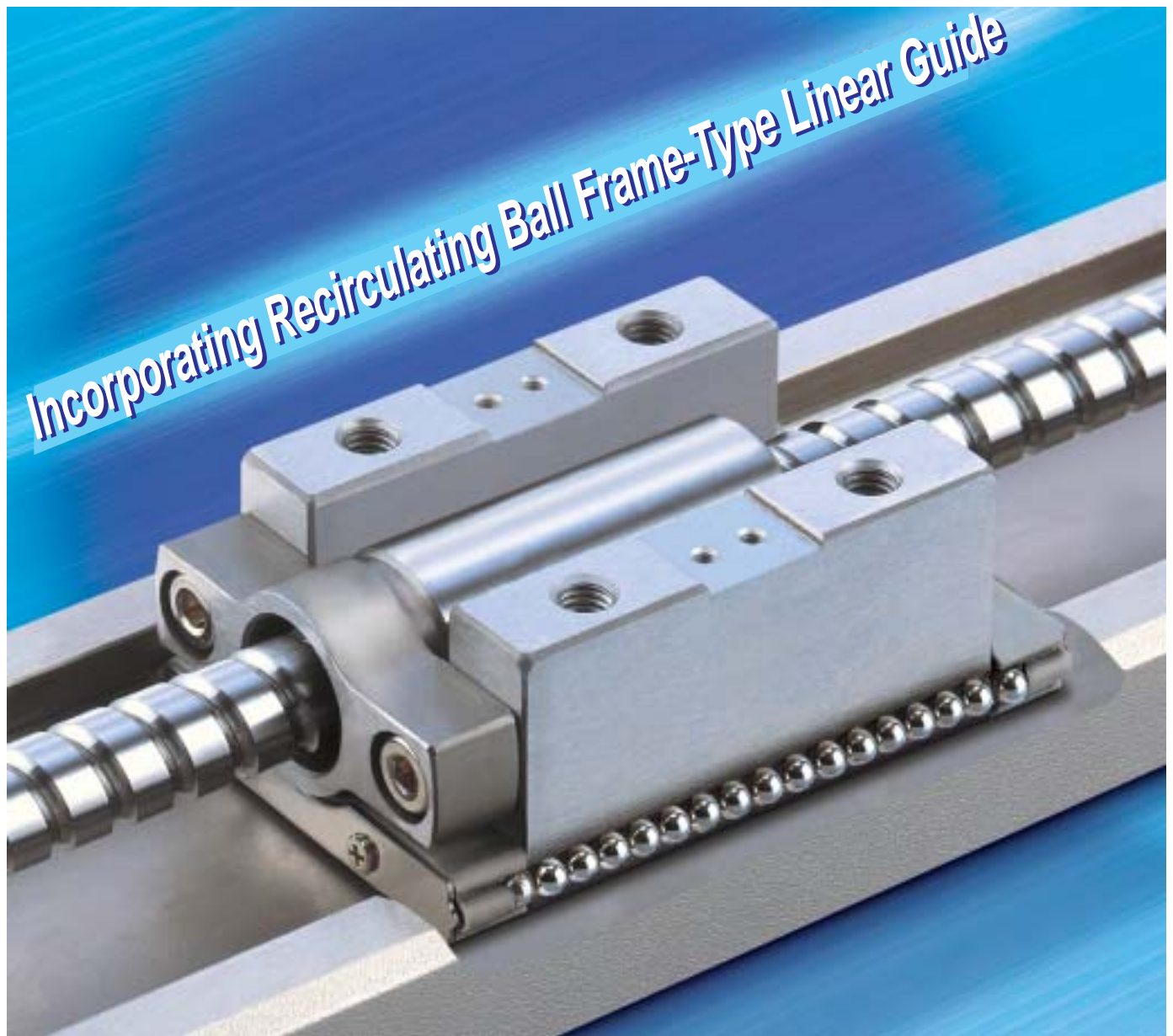
All specifications in this catalog are subject to change without notice.
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Printed in Japan

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Electric Actuator with Integrated Guide

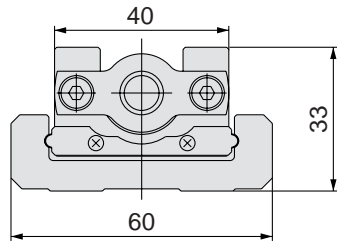


Series LTF

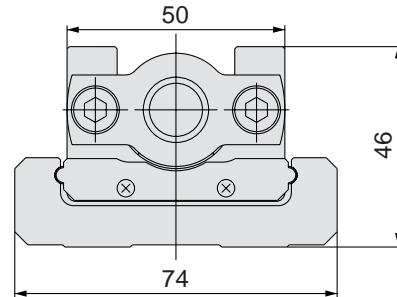


Light-weight, compact electric Frame-type linear guide has one-piece

Space saving, light weight



LTF6 work piece mounting section dimensions

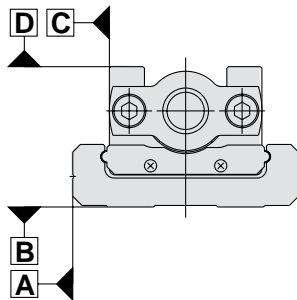


LTF8 work piece mounting section dimensions

Overall length*	357.5mm	412mm
Weight*	2.2kg	4.6kg
Maximum stroke	600mm	1000mm

* Values of the horizontal mounting type with standard motor and 100 mm stroke

Table traveling accuracy



Model	Traveling accuracy (mm)	
	C side against A side	D side against B side
LTF6	±0.02/200 or less	±0.02/200 or less
LTF8	±0.02/200 or less	±0.02/200 or less

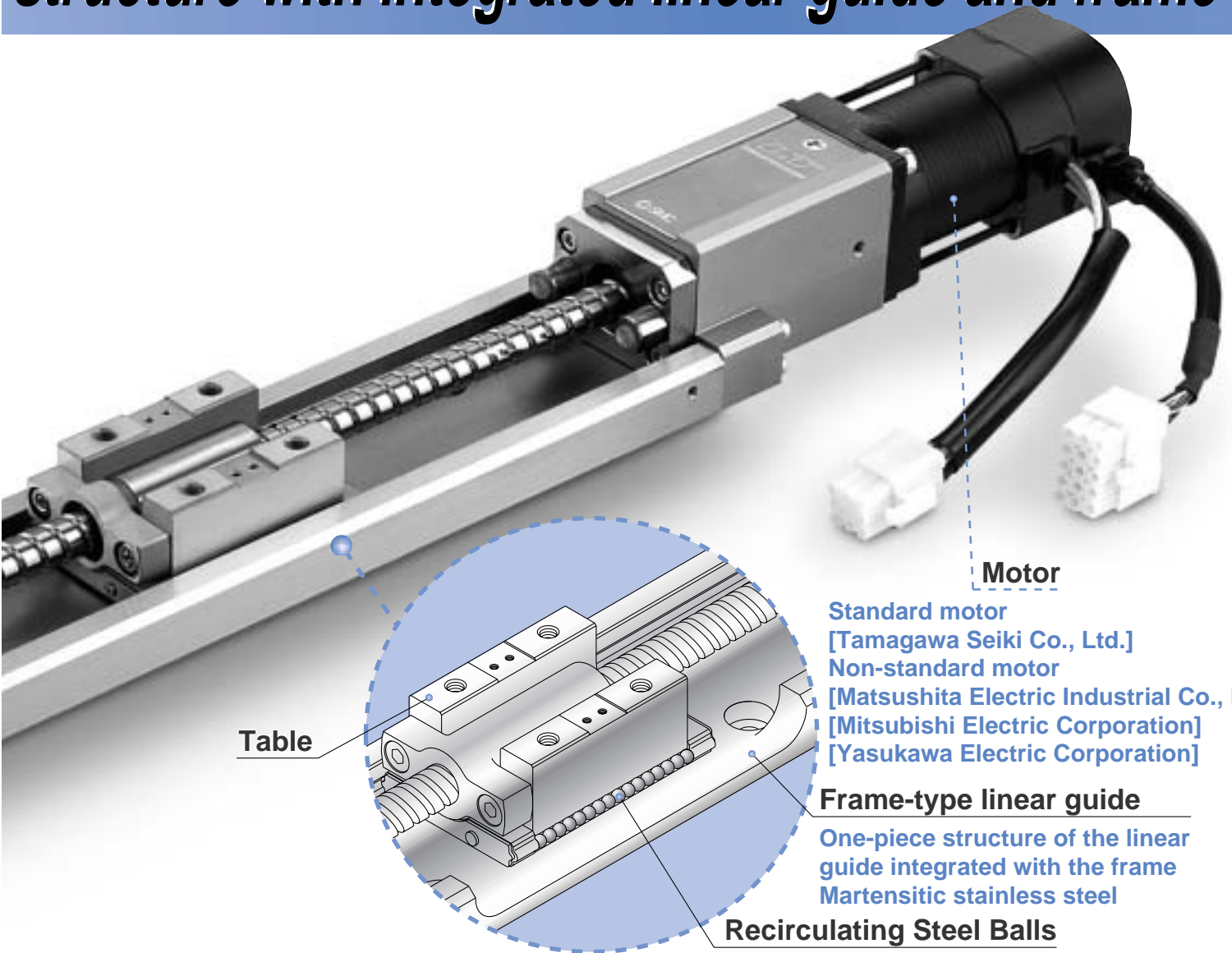
Lead screw
Ground ball screw
Rolled ball screw



Simplified Selection Flow Chart Single Axis Electric Actuator Series LTF (AC Servomotor)

Series	Brake	Work load kg	Maximum speed mm/s	Positioning repeatability mm	Lead screw	Guide type	Motor type	Capacity
Horizontal mounting specification Series LTF	Without motor brake	15	500	±0.02	Ground ball screw	Frame-type linear guide	Standard motor [Tamagawa Seiki Co., Ltd.]	100W
				±0.05	Rolled ball screw			
		25	1000	±0.02	Ground ball screw		Non-standard motor [Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation]	200W
				±0.05	Rolled ball screw			
		30	300	±0.02	Ground ball screw		100W	
				±0.05	Rolled ball screw			
		50	500	±0.02	Ground ball screw		200W	
				±0.05	Rolled ball screw			
Vertical mounting specification Series LTF	With motor brake	3	500	±0.02	Ground ball screw	Frame-type linear guide	Standard motor [Tamagawa Seiki Co., Ltd.]	100W
				±0.05	Rolled ball screw			
		5	1000	±0.02	Ground ball screw		Non-standard motor [Matsushita Electric Industrial Co., Ltd. Mitsubishi Electric Corporation Yaskawa Electric Corporation]	200W
				±0.05	Rolled ball screw			
		6	300	±0.02	Ground ball screw		100W	
				±0.05	Rolled ball screw			
		10	500	±0.02	Ground ball screw		200W	
				±0.05	Rolled ball screw			

actuator requires small mounting space structure with integrated linear guide and frame



Standard stroke (mm) and Speed (mm/s)										Model	Page			
100	200	300	400	500	600	700	800	900	1000		Standard motor	Non-standard motor	Deflection	
		to 500			to 390					LTF6E□PH	4	36	71	
		to 500			to 390					LTF6E□NH	8	40		
		to 1000				to 890	to 710	to 580	to 480	LTF8F□PL	12	44		
		to 1000				to 890	to 710	to 580	to 480	LTF8F□NL	16	48		
		to 300			to 230					LTF6E□PF	2	34		
		to 300			to 230					LTF6E□NF	6	38		
		to 500				to 440	to 350	to 290	to 240	LTF8F□PH	10	42		
		to 500				to 440	to 350	to 290	to 240	LTF8F□NH	14	46		
		to 500			to 390					LTF6E□PH-□K	20	52		71
		to 500			to 390					LTF6E□NH-□K	24	56		
		to 1000				to 890	to 710	to 580	to 480	LTF8F□PL-□K	28	60		
		to 1000				to 890	to 710	to 580	to 480	LTF8F□NL-□K	32	64		
		to 300			to 230					LTF6E□PF-□K	18	50		
		to 300			to 230					LTF6E□NF-□K	22	54		
		to 500				to 440	to 350	to 290	to 240	LTF8F□PH-□K	26	58		
		to 500				to 440	to 350	to 290	to 240	LTF8F□NH-□K	30	62		

Electric Actuator with Integrated Guide

Series *LTF*

Series	Motor type	Guide type	Mounting orientation	Model	Lead screw <small>lead</small> mm		Page
					Ground ball screw	Rolled ball screw	
LTF	Standard motor	Frame-type linear guide	Horizontal	LTF6	6 10	6 10	P.2
				LTF8	10 20	10 20	P.10
			Vertical	LTF6	6 10	6 10	P.18
				LTF8	10 20	10 20	P.26
	Non-standard motor		Horizontal	LTF6	6 10	6 10	P.34
				LTF8	10 20	10 20	P.42
			Vertical	LTF6	6 10	6 10	P.50
				LTF8	10 20	10 20	P.58

- Options _____ P.66
- Construction _____ P.67
- Mounting _____ P.68
- Non-standard Motor Mounting _____ P.69
- Deflection Data _____ P.71

Part Number Designations

LTF 6 G E 1 P F 100 R 2 X10

Series

6	Series 6
8	Series 8

Motor specification

Nil	Standard motor
G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Motor output

E	100W
F	200W

Power supply voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
0	Without motor

Lead screw lead

F	6mm
H	10mm
L	20mm

Brake

Nil	None
K	With brake

Lead screw type

P	Ground ball screw
N	Rolled ball screw

Cable length

2	2m
3	3m
4	4m
5	5m

Motor specification

Nil	Standard motor
X10	Non-standard motor

Switch specification

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

• Series

• Lead screw lead

• Motor specification

• Cable length

• Switch specification

• Motor/switch entry direction

The tables above show the definition for each symbol only and cannot be used for actual model selection.

How to Order

LTF6E **1** **PF** — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V/220V AC(50/60Hz)

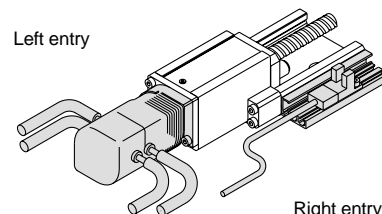
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

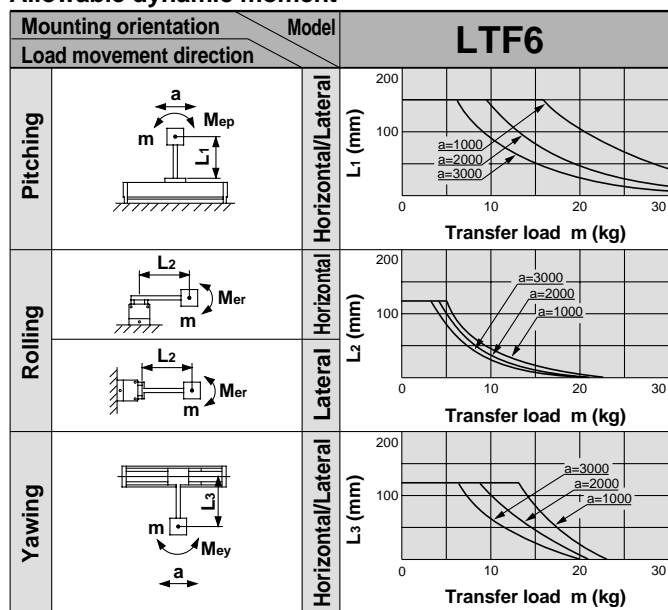


Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.2	2.7	3.2	3.7	4.2	4.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						230
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2HF□-□□ (Refer to page 73 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

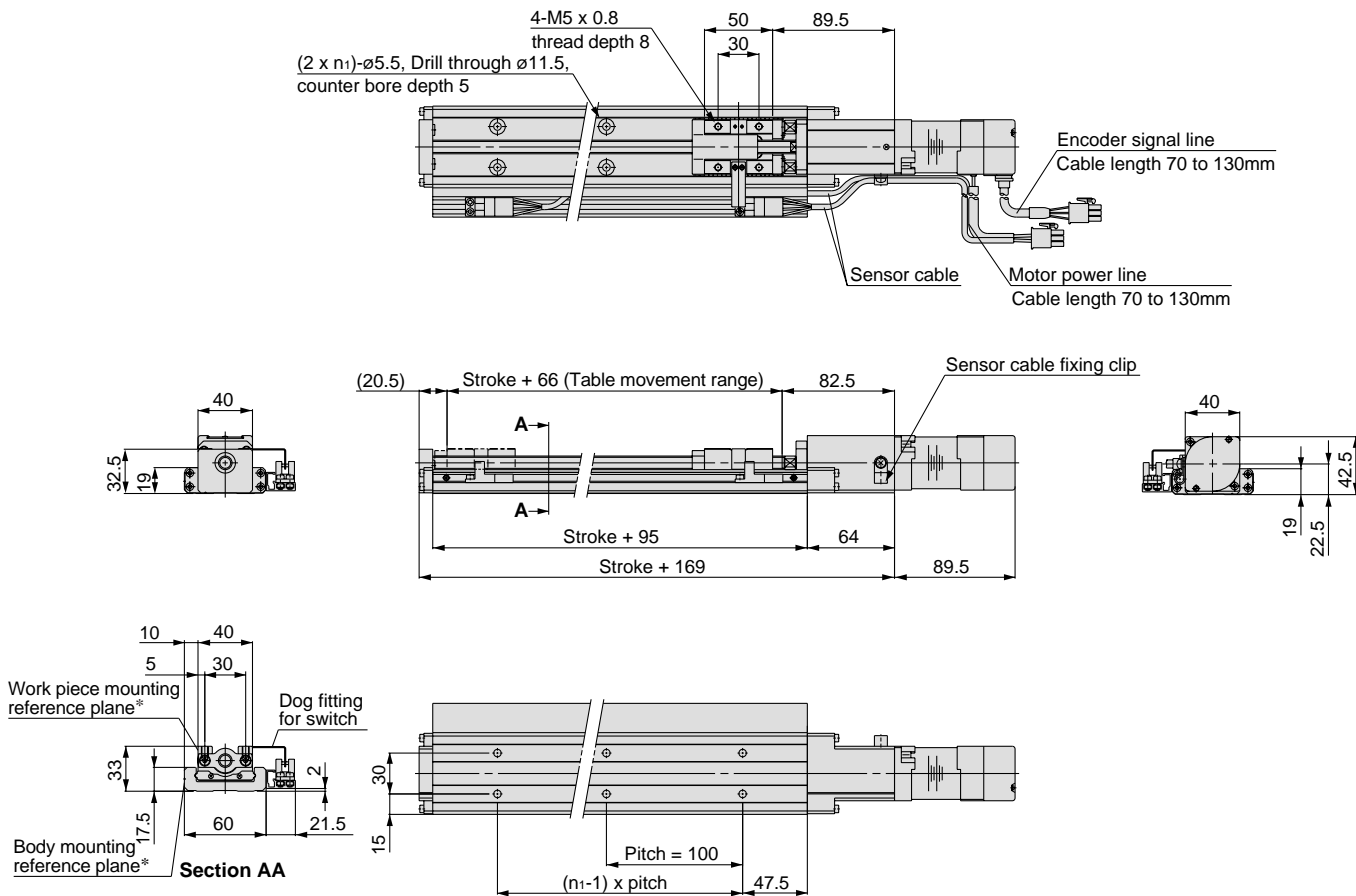


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□PF

Scale: 18%



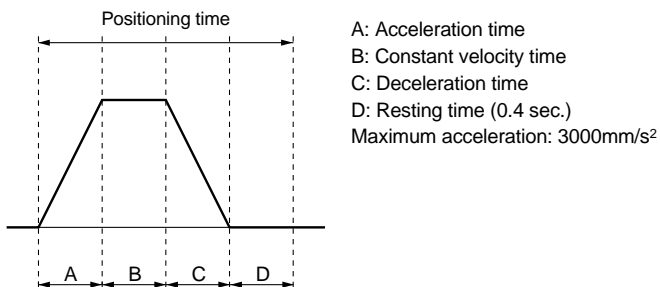
Model	Stroke	n ₁
LTF6E□PF- 100-□□	100	2
LTF6E□PF- 200-□□	200	3
LTF6E□PF- 300-□□	300	4
LTF6E□PF- 400-□□	400	5
LTF6E□PF- 500-□□	500	6
LTF6E□PF- 600-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E 1 PH — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V/220V AC(50/60Hz)

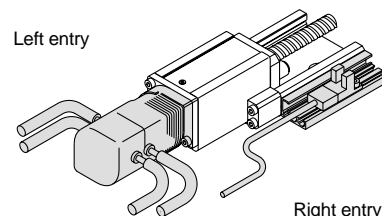
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

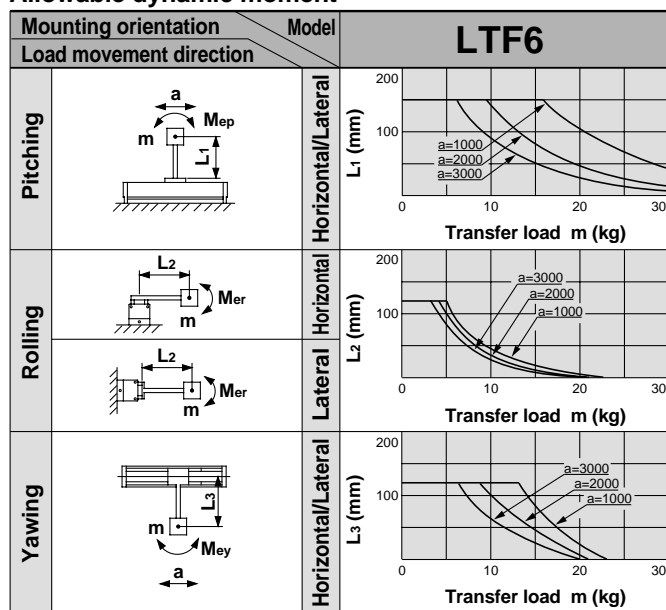


Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.2	2.7	3.2	3.7	4.2	4.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	15						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						390
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2HH□-□□ (Refer to page 73 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

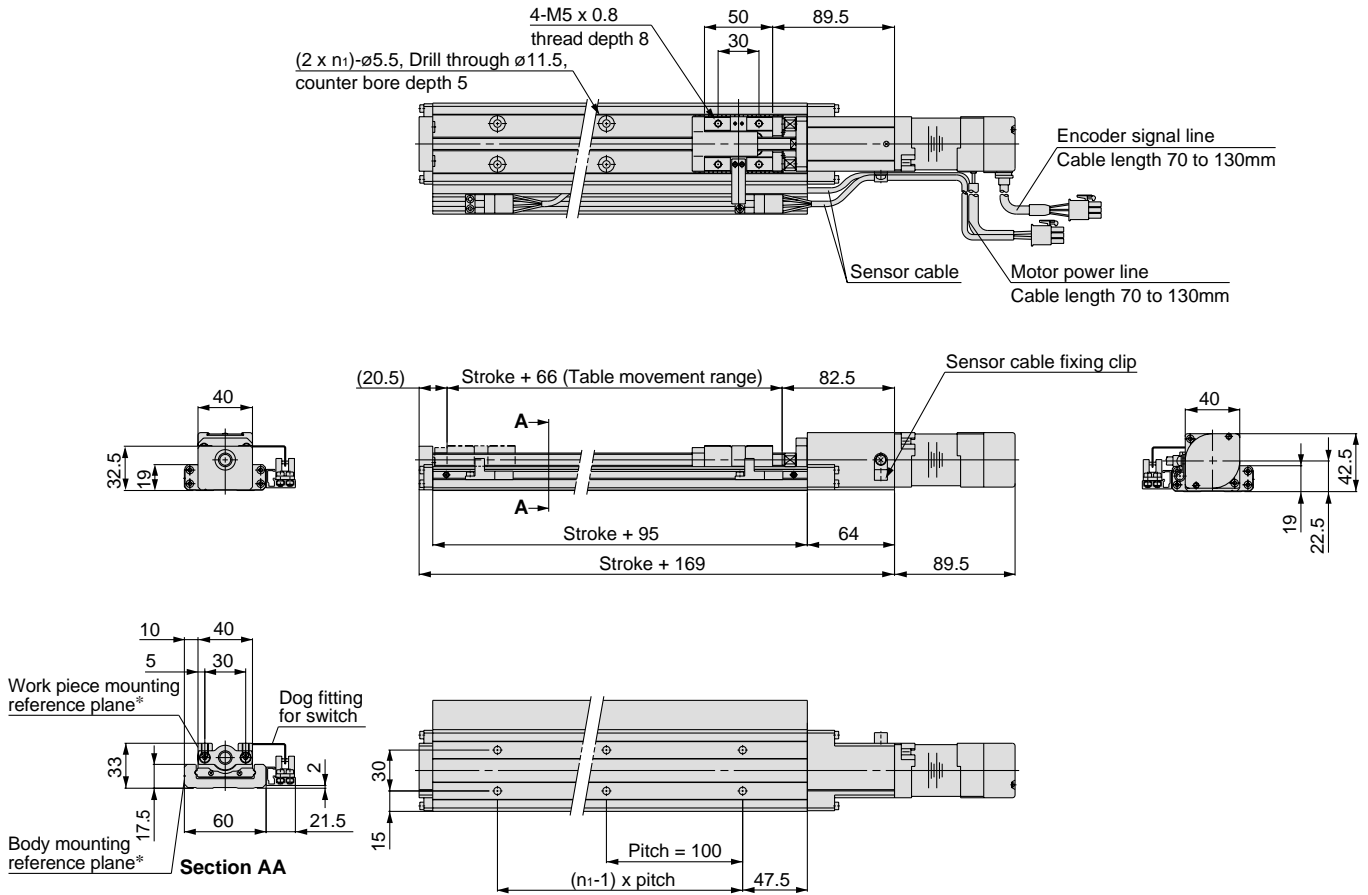


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□PH

Scale: 18%



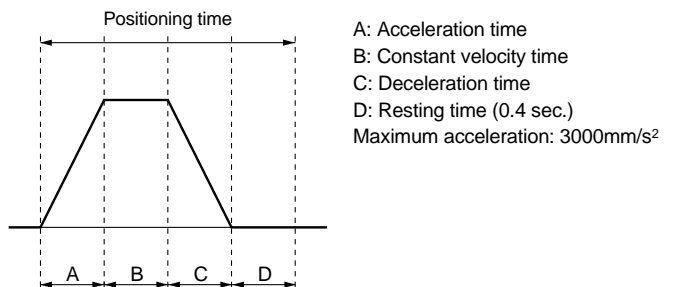
Model	Stroke	n1
LTF6E□PH- 100-□□	100	2
LTF6E□PH- 200-□□	200	3
LTF6E□PH- 300-□□	300	4
LTF6E□PH- 400-□□	400	5
LTF6E□PH- 500-□□	500	6
LTF6E□PH- 600-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E 1 NF — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V/220V AC(50/60Hz)

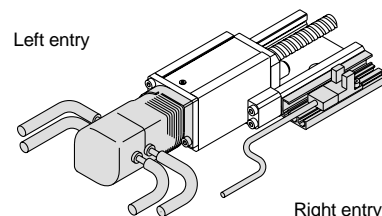
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

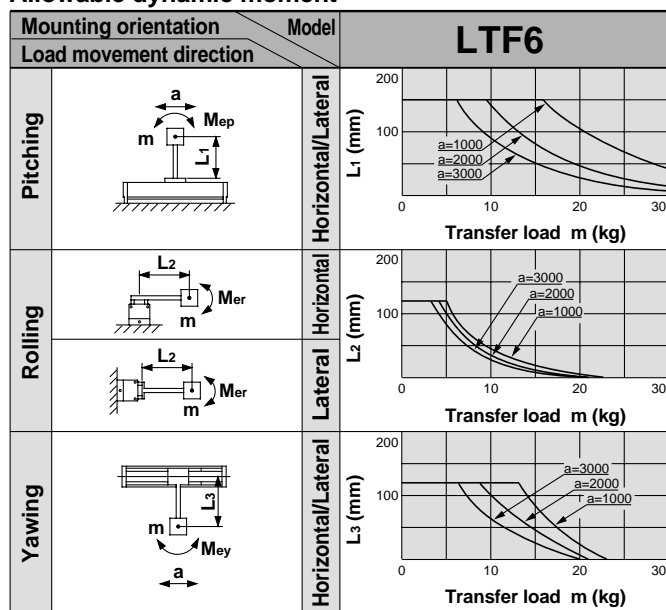


Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.2	2.7	3.2	3.7	4.2	4.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2HF□-□□ (Refer to page 73 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

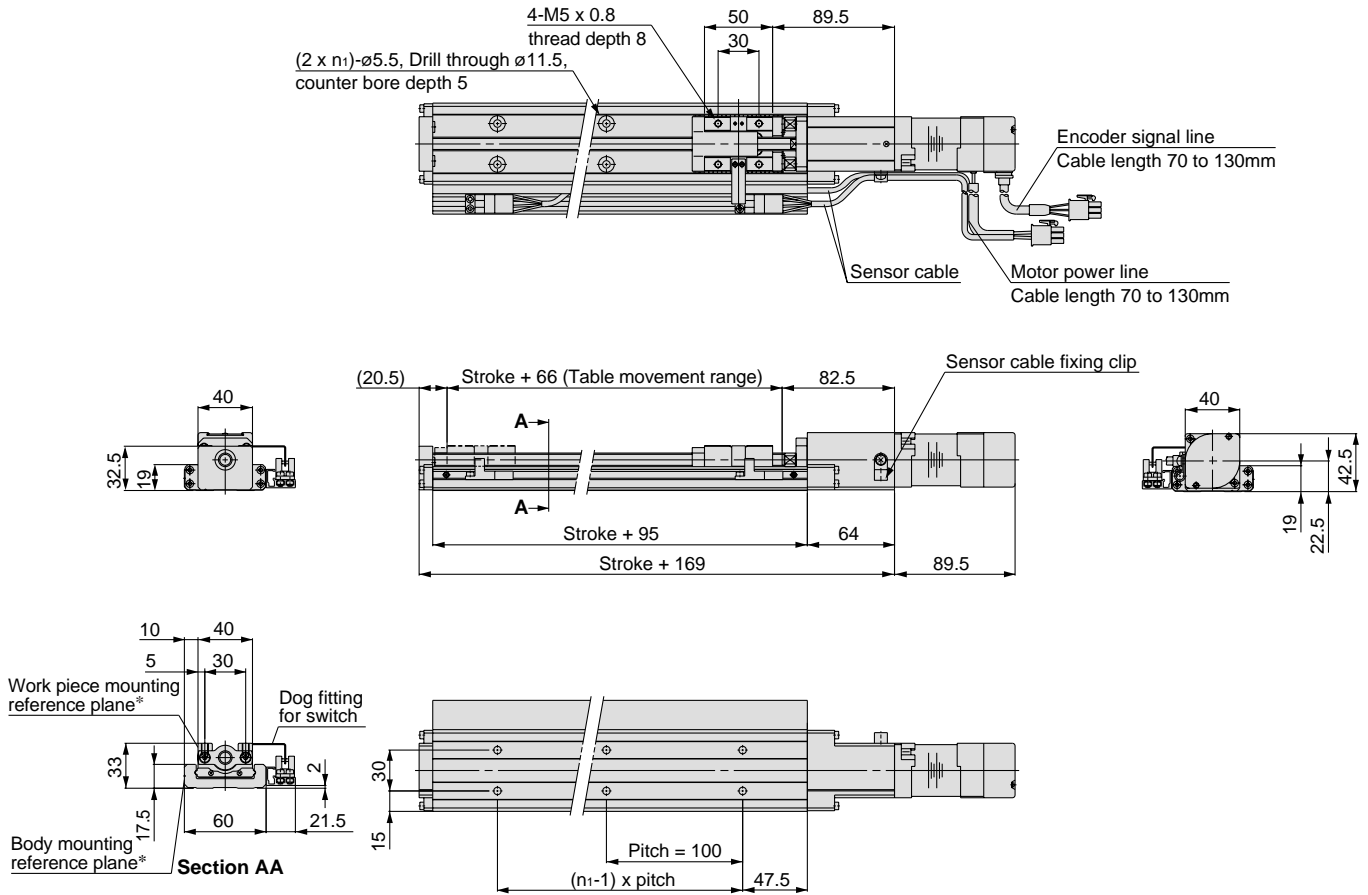


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□NF

Scale: 18%



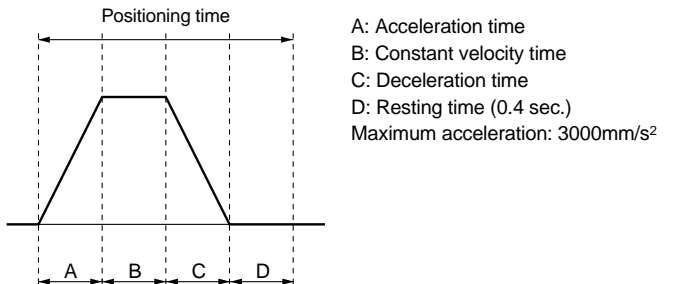
Model	Stroke	n1
LTF6E□NF- 100-□□	100	2
LTF6E□NF- 200-□□	200	3
LTF6E□NF- 300-□□	300	4
LTF6E□NF- 400-□□	400	5
LTF6E□NF- 500-□□	500	6
LTF6E□NF- 600-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E **1** **NH** — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V/220V AC(50/60Hz)

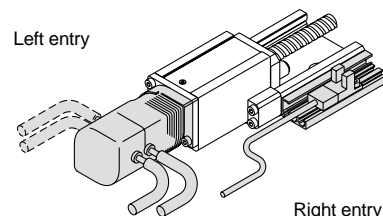
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

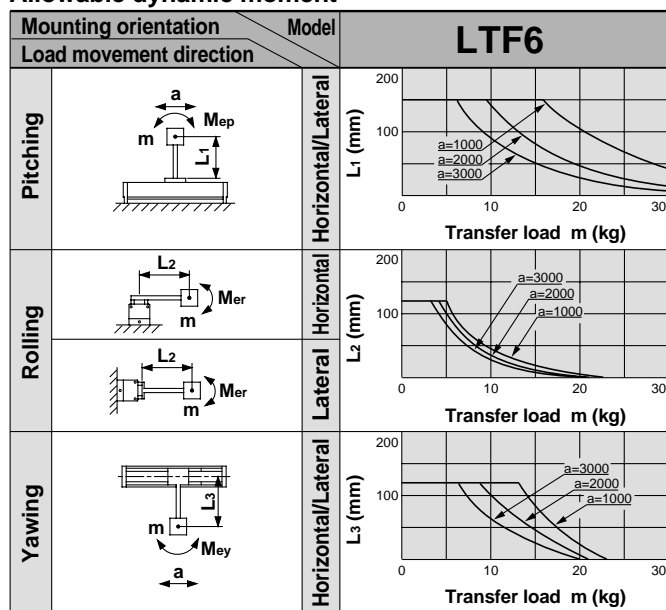


Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.2	2.7	3.2	3.7	4.2	4.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	15						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2HH□-□□ (Refer to page 73 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

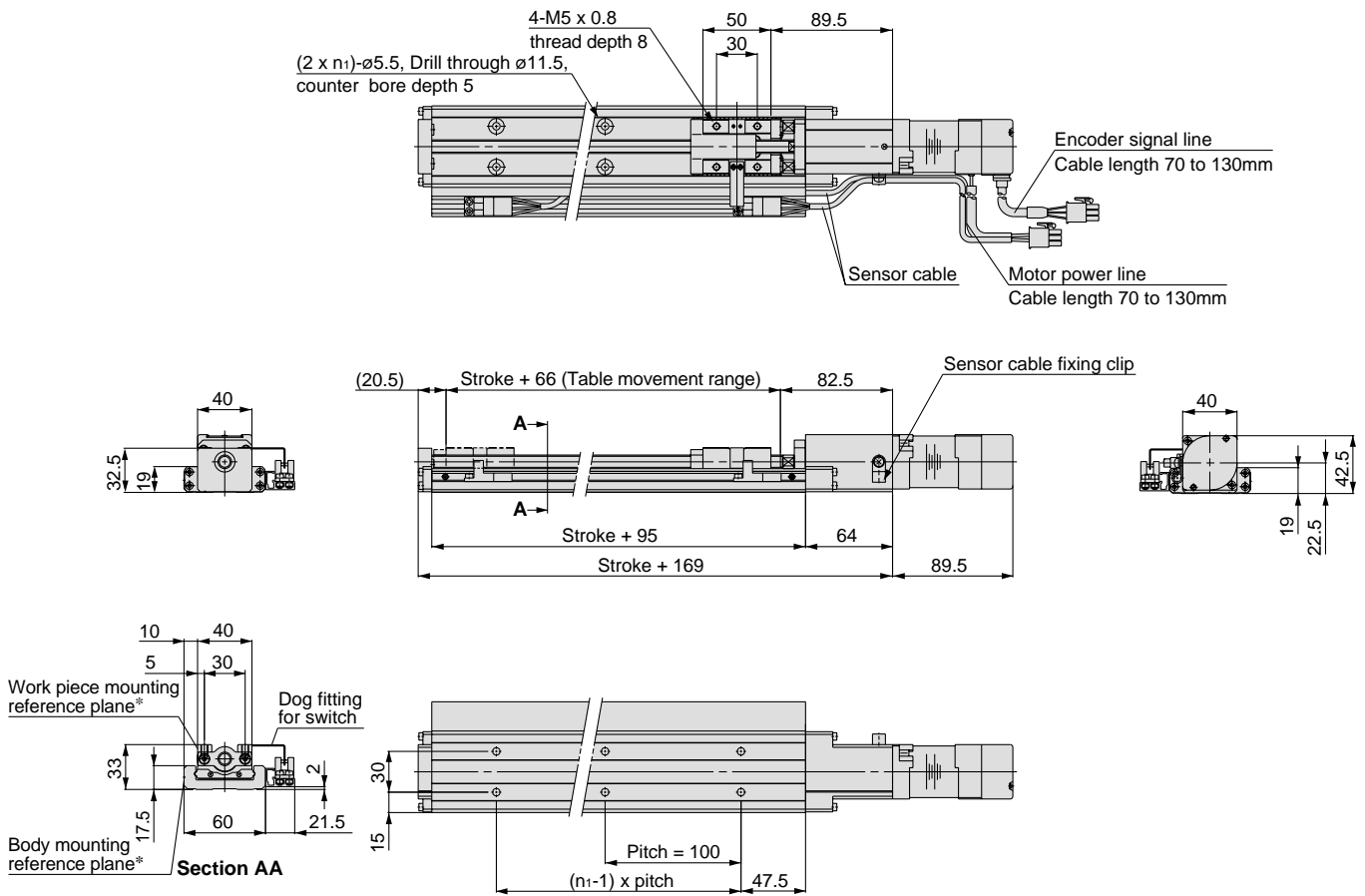


m : Transfer load (kg) Me : Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□NH

Scale: 18%



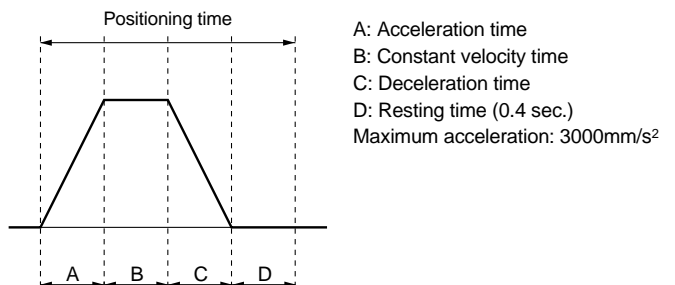
Model	Stroke	n ₁
LTF6E□NH- 100-□□	100	2
LTF6E□NH- 200-□□	200	3
LTF6E□NH- 300-□□	300	4
LTF6E□NH- 400-□□	400	5
LTF6E□NH- 500-□□	500	6
LTF6E□NH- 600-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F 1 PH — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

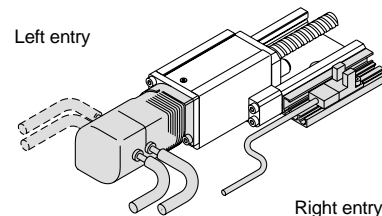
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction

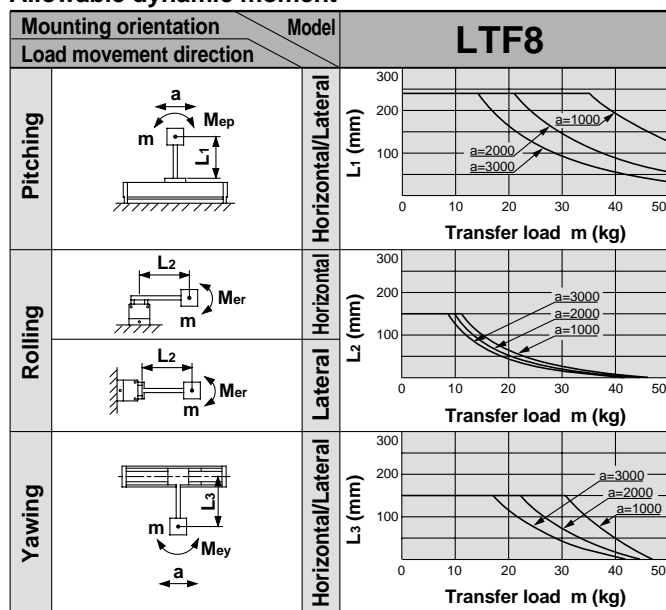


Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg		4.6	5.5	6.3	7.1	8.0	8.8	9.6	10.5	11.3	12.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	50										
	Rated thrust	N	360										
	Maximum speed	mm/s	500							440	350	290	240
	Positioning repeatability	mm	±0.02										
Main parts	Motor	AC servomotor (200W)											
	Encoder	Incremental system											
	Lead screw	Ground ball screw ∅15mm, 10mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
Controller	Model	LC1-1H3HH□-□□ (Refer to page 73 for details.)											

Allowable Moment (N·m)

Allowable dynamic moment

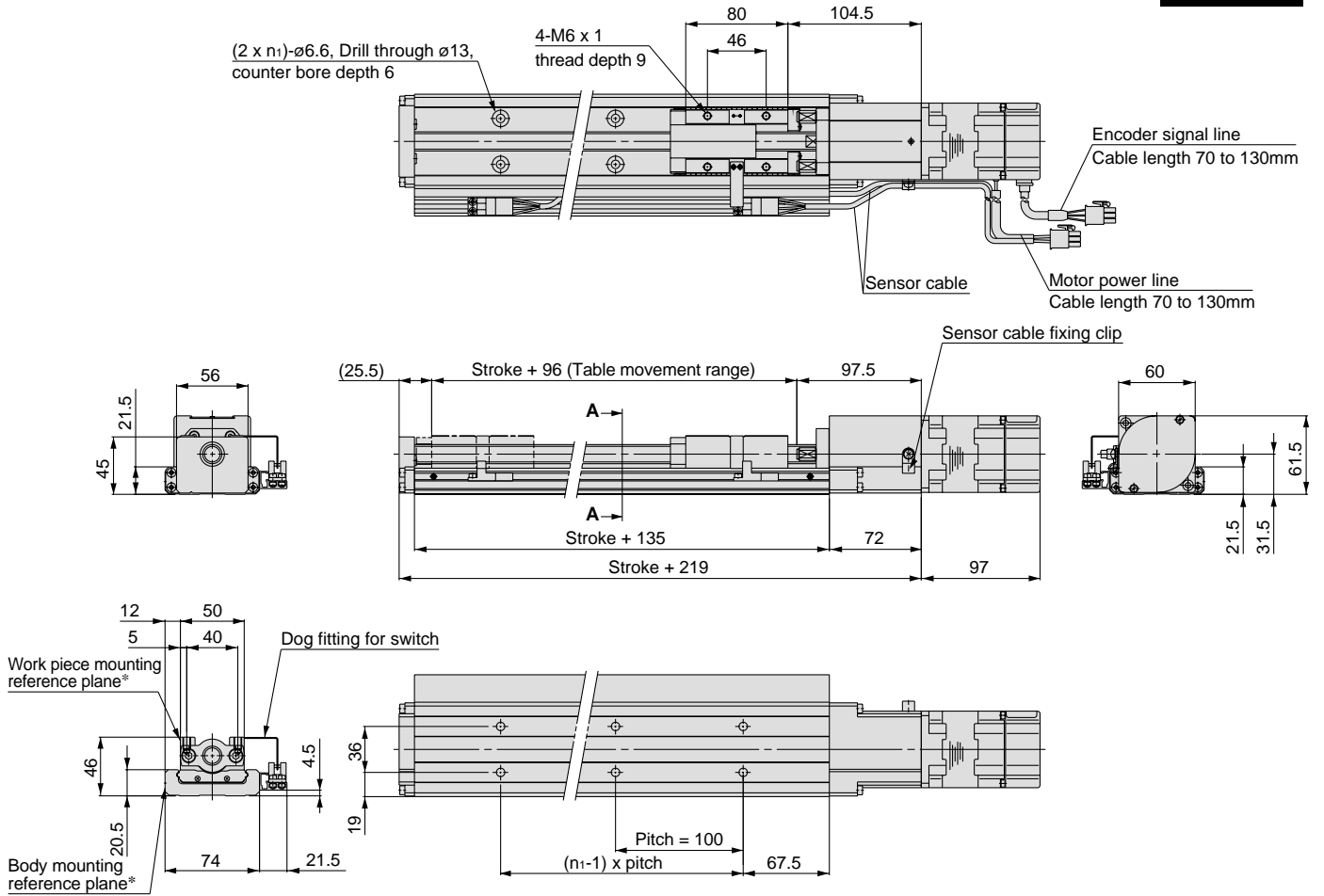


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□PH

Scale: 18%



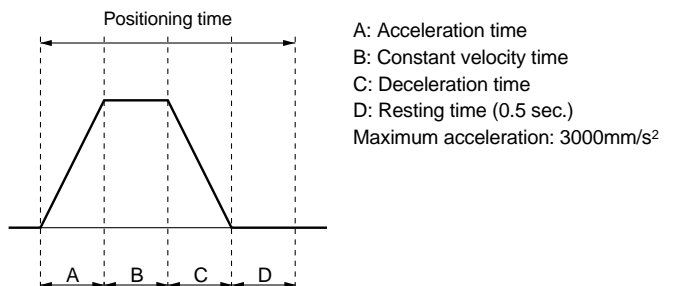
Model	Stroke	n ₁
LTF8F□PH- 100-□□	100	2
LTF8F□PH- 200-□□	200	3
LTF8F□PH- 300-□□	300	4
LTF8F□PH- 400-□□	400	5
LTF8F□PH- 500-□□	500	6
LTF8F□PH- 600-□□	600	7
LTF8F□PH- 700-□□	700	8
LTF8F□PH- 800-□□	800	9
LTF8F□PH- 900-□□	900	10
LTF8F□PH-1000-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **PL** — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

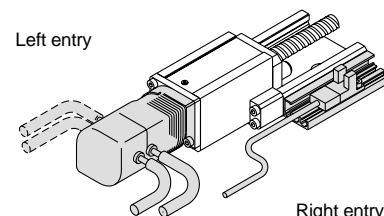
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

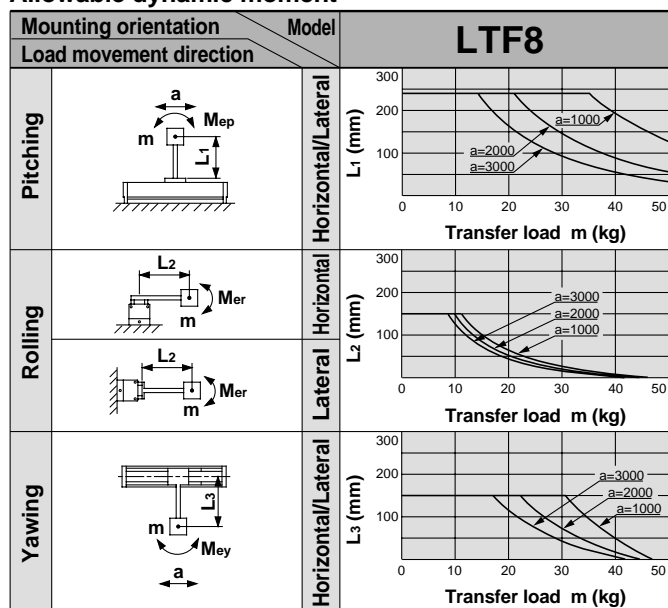


Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg		4.6	5.5	6.3	7.1	8.0	8.8	9.6	10.5	11.3	12.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	25										
	Rated thrust	N	180										
	Maximum speed	mm/s	1000							890	710	580	480
	Positioning repeatability	mm	±0.02										
Main parts	Motor	AC servomotor (200W)											
	Encoder	Incremental system											
	Lead screw	Ground ball screw ∅15mm, 20mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
Controller	Model	LC1-1H3HL□-□□ (Refer to page 73 for details.)											

Allowable Moment (N·m)

Allowable dynamic moment

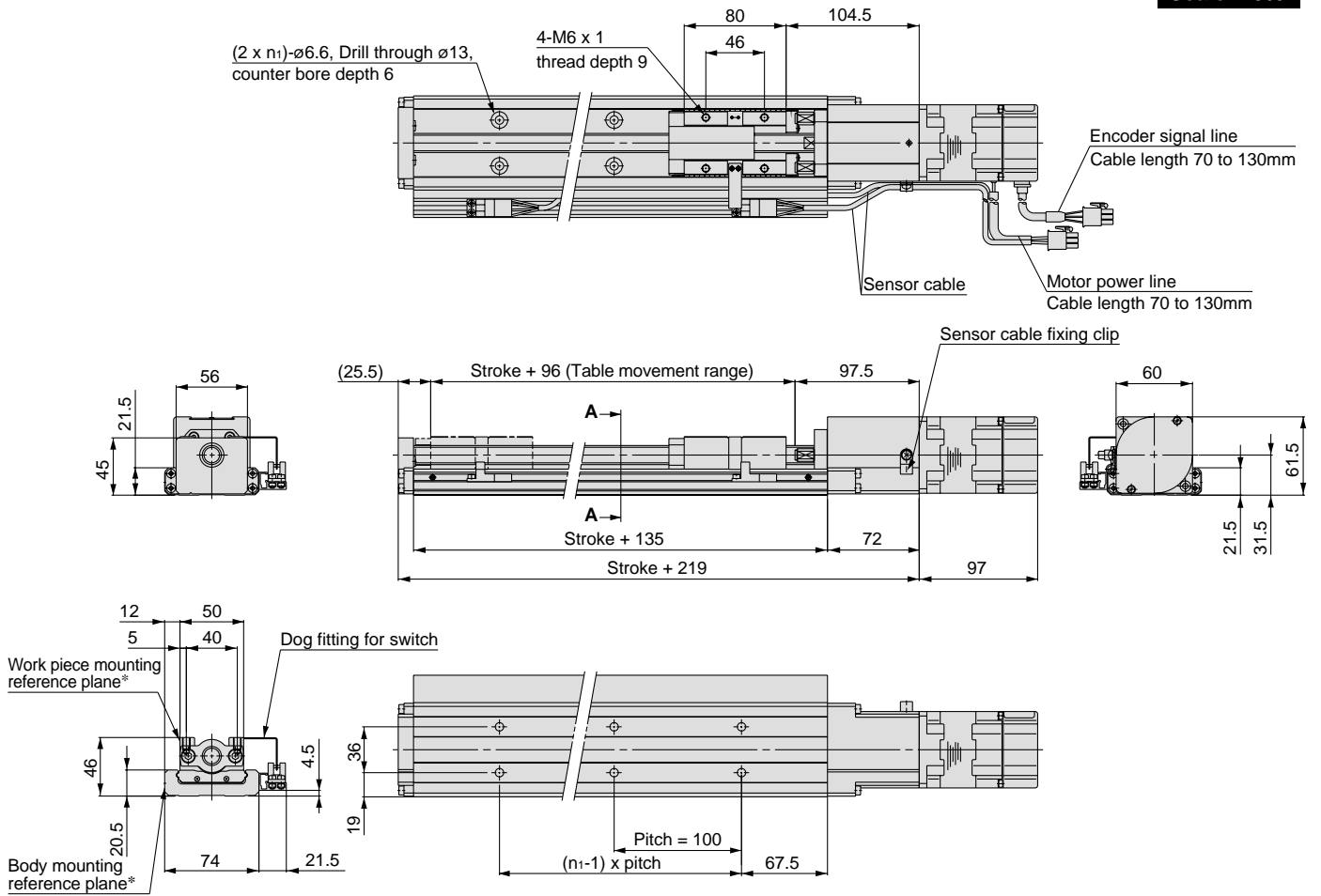


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□PL

Scale: 18%



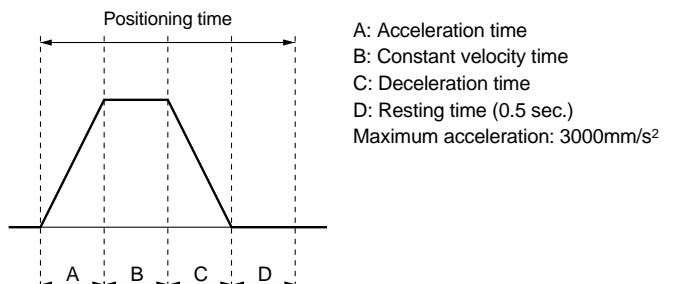
Model	Stroke	n ₁
LTF8F□PL- 100-□□	100	2
LTF8F□PL- 200-□□	200	3
LTF8F□PL- 300-□□	300	4
LTF8F□PL- 400-□□	400	5
LTF8F□PL- 500-□□	500	6
LTF8F□PL- 600-□□	600	7
LTF8F□PL- 700-□□	700	8
LTF8F□PL- 800-□□	800	9
LTF8F□PL- 900-□□	900	10
LTF8F□PL-1000-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **NH** — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

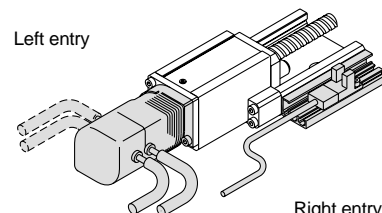
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

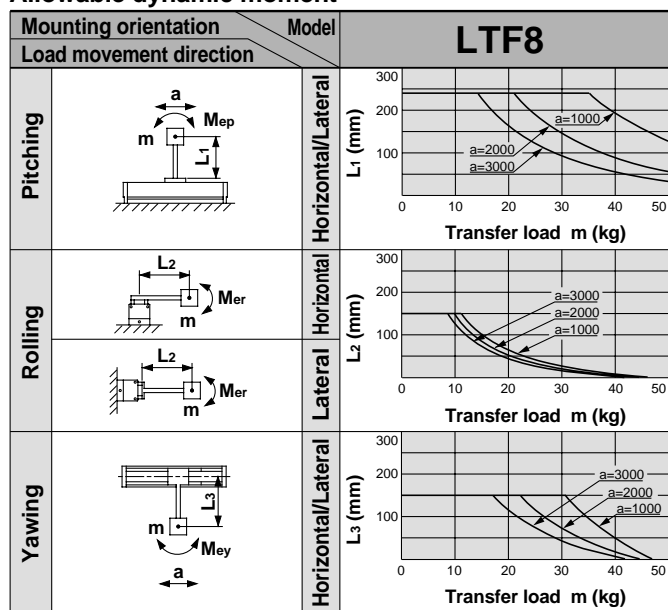


Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg		4.6	5.5	6.3	7.1	8.0	8.8	9.6	10.5	11.3	12.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	50										
	Rated thrust	N	360										
	Maximum speed	mm/s	500							440	350	290	240
	Positioning repeatability	mm	±0.05										
Main parts	Motor	AC servomotor (200W)											
	Encoder	Incremental system											
	Lead screw	Rolled ball screw ∅15mm, 10mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
Controller	Model	LC1-1H3HH□-□□ (Refer to page 73 for details.)											

Allowable Moment (N·m)

Allowable dynamic moment

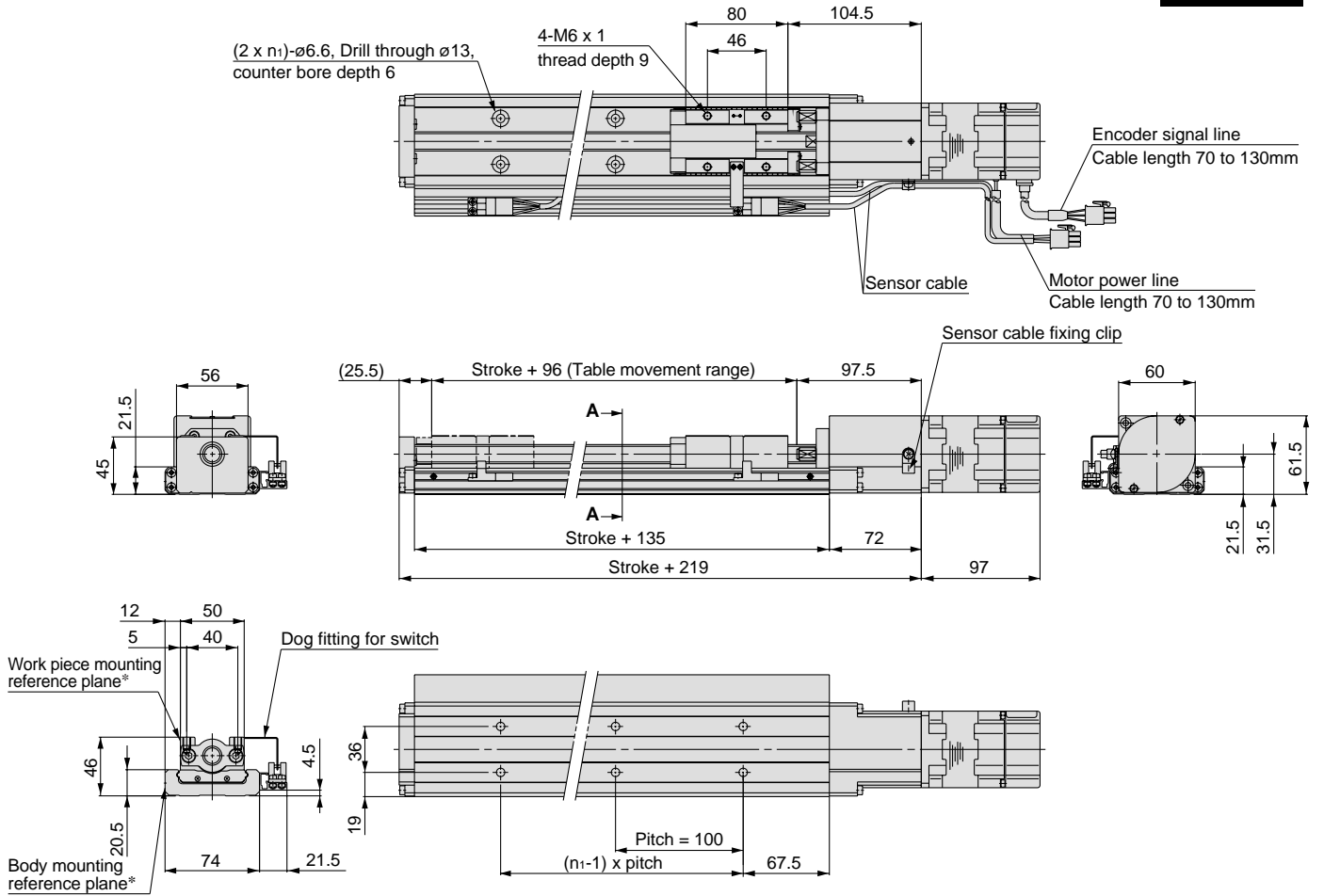


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□NH

Scale: 18%



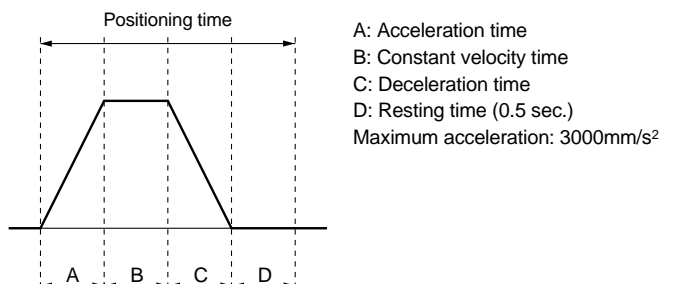
Model	Stroke	n1
LTF8F□NH- 100-□□	100	2
LTF8F□NH- 200-□□	200	3
LTF8F□NH- 300-□□	300	4
LTF8F□NH- 400-□□	400	5
LTF8F□NH- 500-□□	500	6
LTF8F□NH- 600-□□	600	7
LTF8F□NH- 700-□□	700	8
LTF8F□NH- 800-□□	800	9
LTF8F□NH- 900-□□	900	10
LTF8F□NH-1000-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F 1 NL — **Stroke** — **R** **2**

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

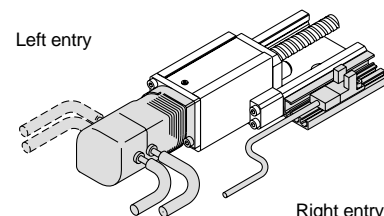
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

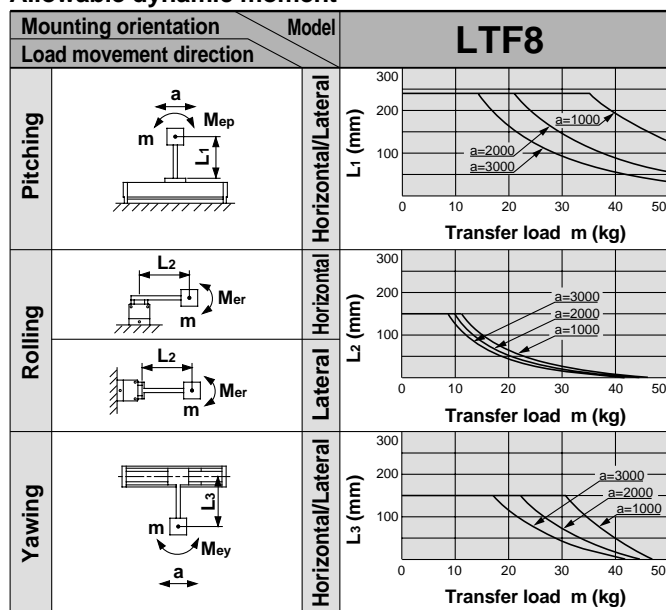


Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg		4.6	5.5	6.3	7.1	8.0	8.8	9.6	10.5	11.3	12.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	25										
	Rated thrust	N	180										
	Maximum speed	mm/s	1000							890	710	580	480
	Positioning repeatability	mm	±0.05										
Main parts	Motor	AC servomotor (200W)											
	Encoder	Incremental system											
	Lead screw	Rolled ball screw ∅15mm, 20mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
Controller	Model	LC1-1H3HL□-□□ (Refer to page 73 for details.)											

Allowable Moment (N·m)

Allowable dynamic moment

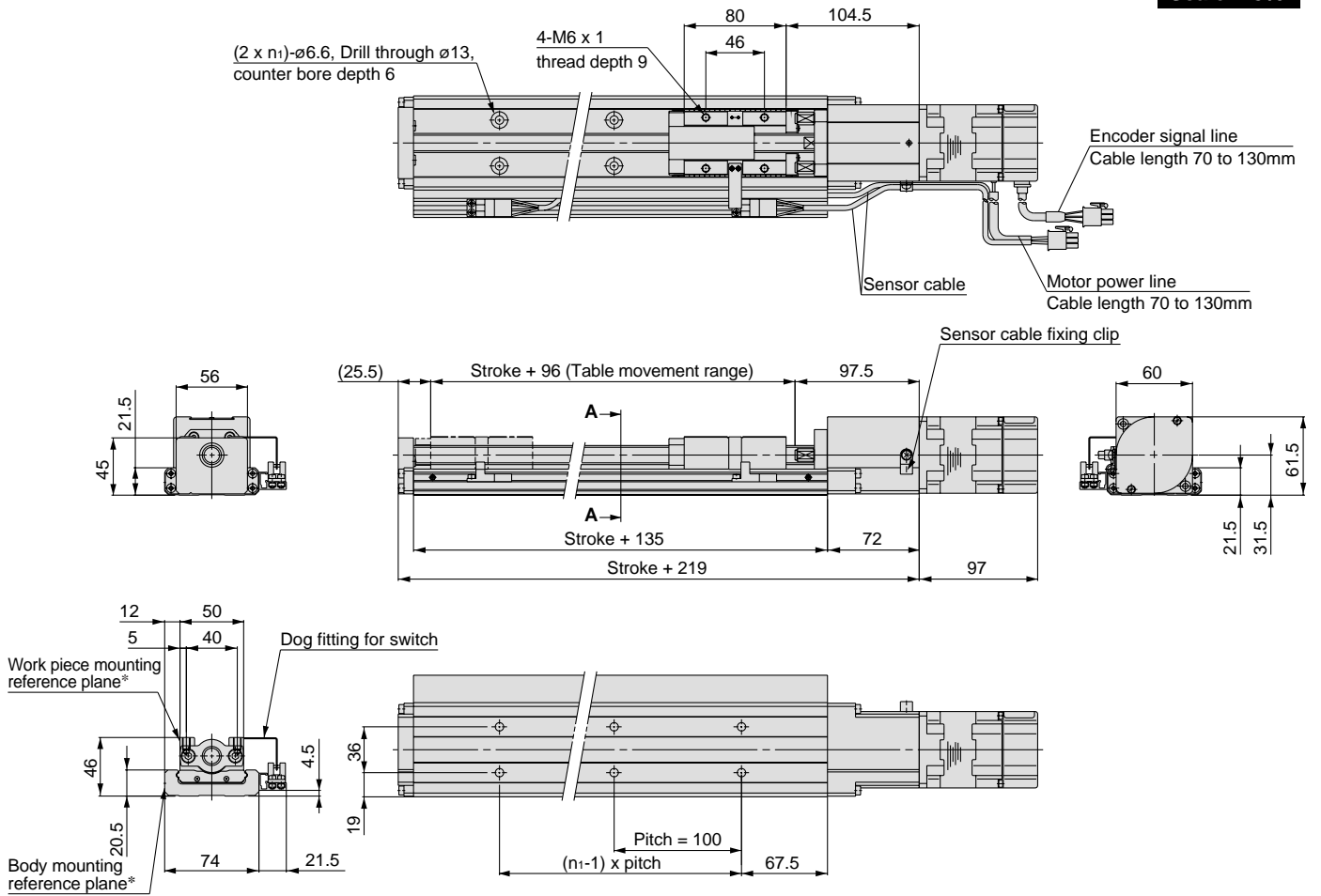


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8□NL

Scale: 18%



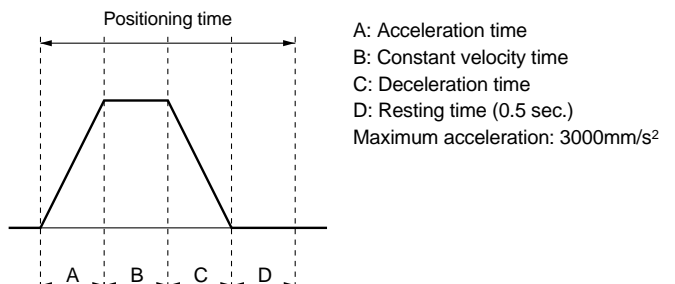
Model	Stroke	n1
LTF8□NL- 100-□□	100	2
LTF8□NL- 200-□□	200	3
LTF8□NL- 300-□□	300	4
LTF8□NL- 400-□□	400	5
LTF8□NL- 500-□□	500	6
LTF8□NL- 600-□□	600	7
LTF8□NL- 700-□□	700	8
LTF8□NL- 800-□□	800	9
LTF8□NL- 900-□□	900	10
LTF8□NL-1000-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E **1** **PF** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

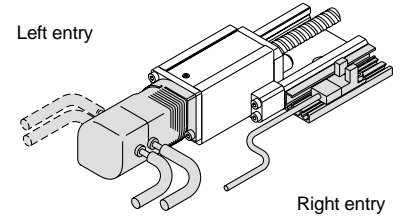
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction



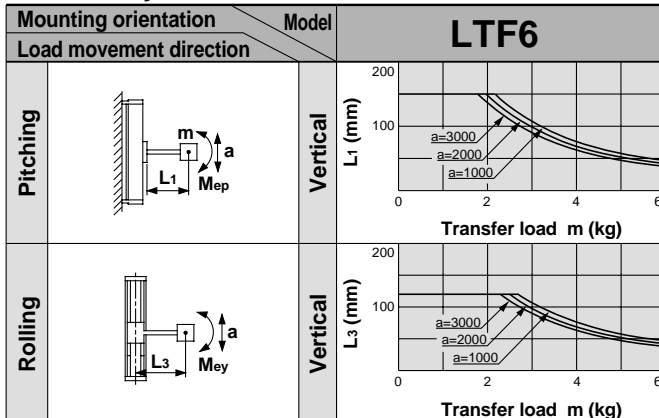
Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.4	2.9	3.4	3.9	4.4	4.9
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2VF□-□□ (Refer to page 73 for details.)							
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)							

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

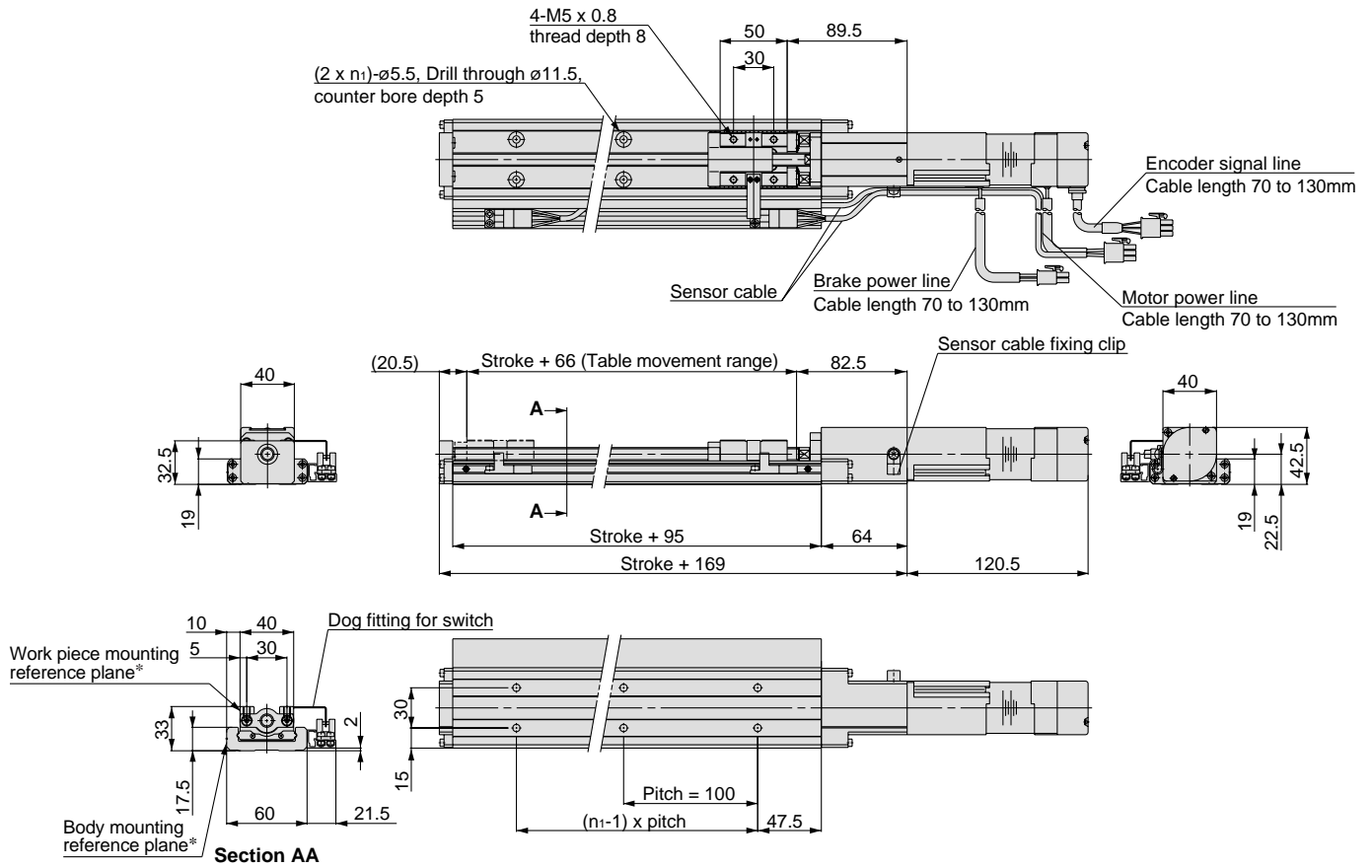


m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□PF

Scale: 18%



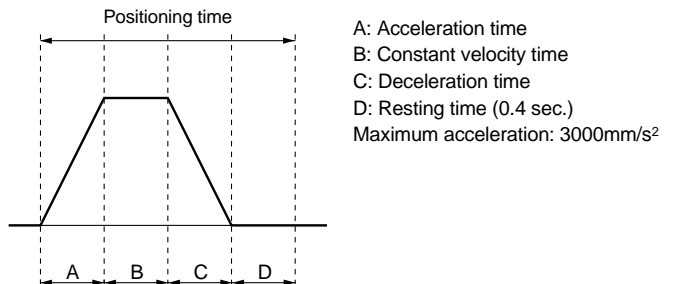
Model	Stroke	n ₁
LTF6E□PF- 100K-□□	100	2
LTF6E□PF- 200K-□□	200	3
LTF6E□PF- 300K-□□	300	4
LTF6E□PF- 400K-□□	400	5
LTF6E□PF- 500K-□□	500	6
LTF6E□PF- 600K-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E **1** **PH** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

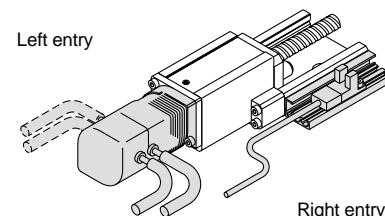
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction



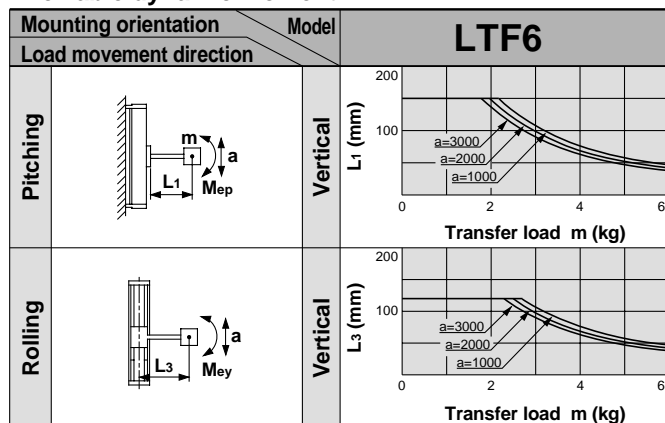
Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.4	2.9	3.4	3.9	4.4	4.9
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	3						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						390
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2VH□-□□ (Refer to page 73 for details.)							
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)							

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

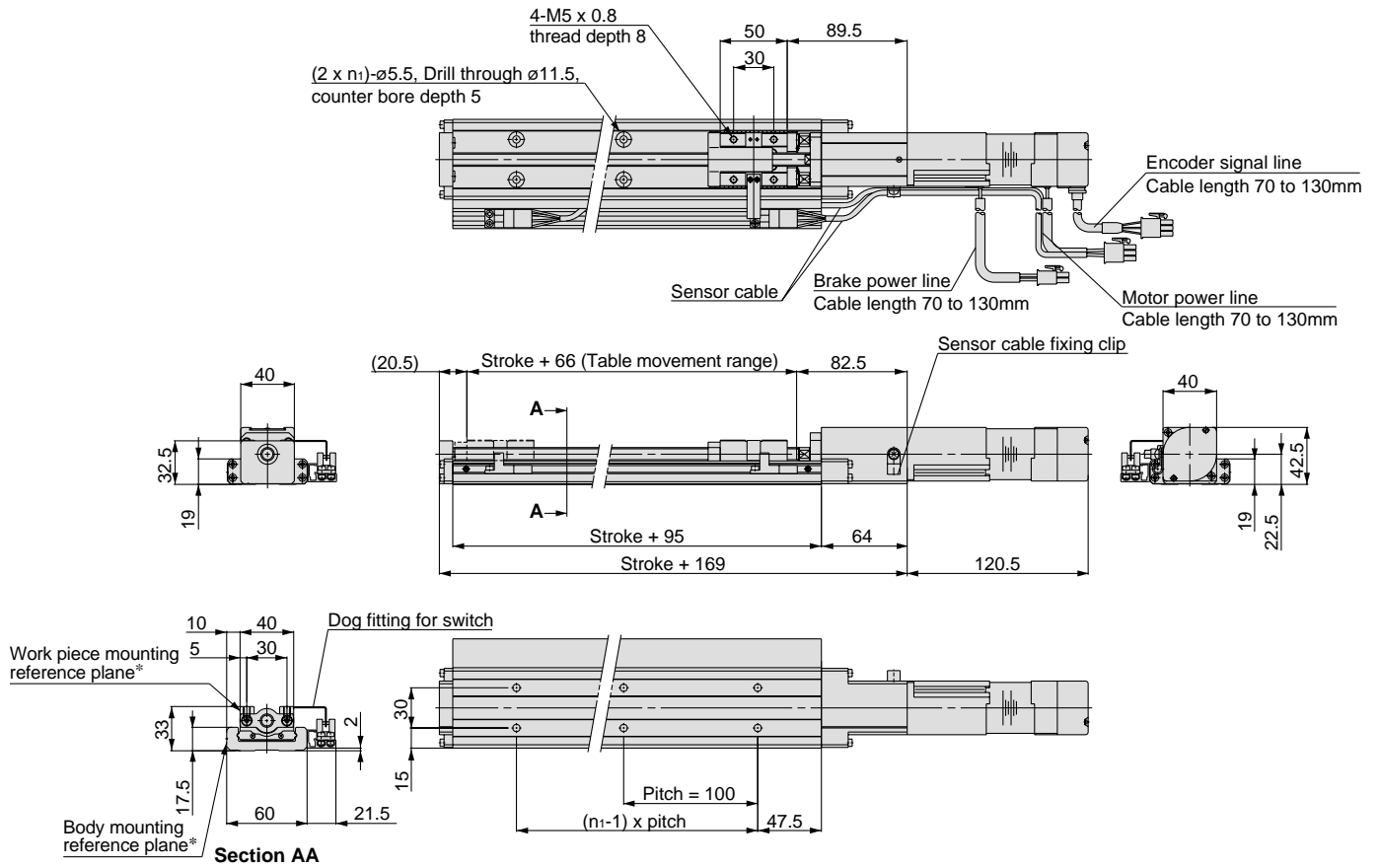


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□PH

Scale: 18%



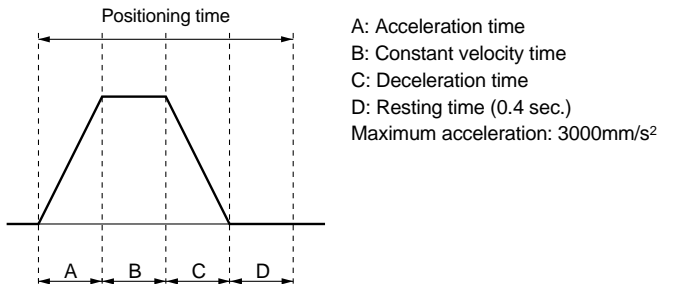
Model	Stroke	n ₁
LTF6E□PH- 100K-□□	100	2
LTF6E□PH- 200K-□□	200	3
LTF6E□PH- 300K-□□	300	4
LTF6E□PH- 400K-□□	400	5
LTF6E□PH- 500K-□□	500	6
LTF6E□PH- 600K-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E **1** **NF** — Stroke **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

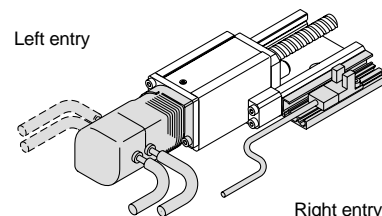
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



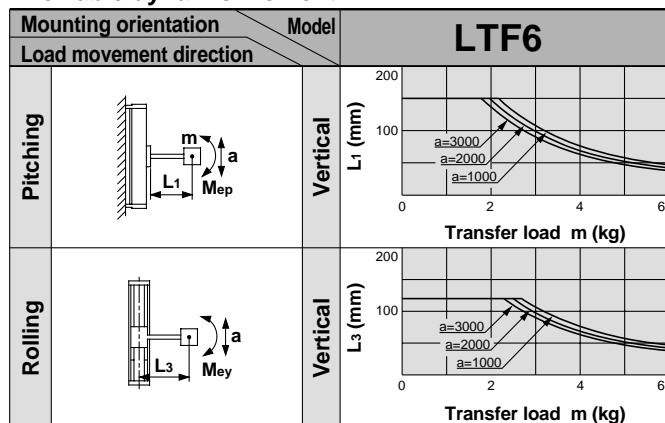
Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.4	2.9	3.4	3.9	4.4	4.9
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						230
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2VF□-□□ (Refer to page 73 for details.)							
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)							

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

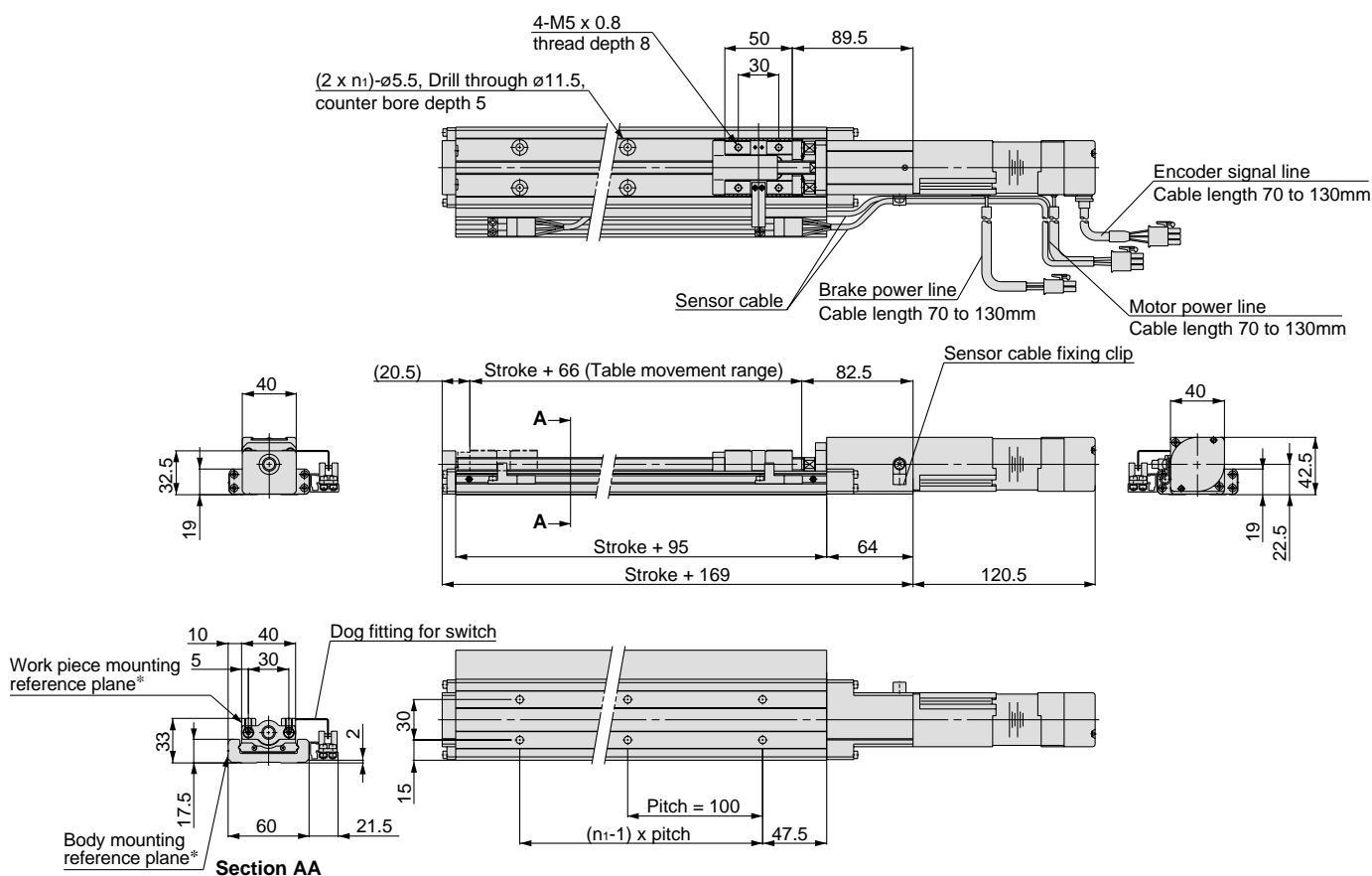


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□NF

Scale: 18%



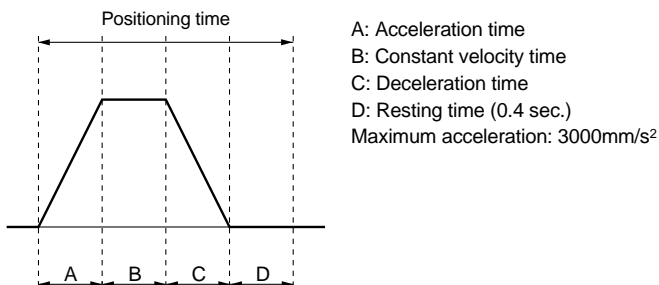
Model	Stroke	n ₁
LTF6E□NF- 100K-□□	100	2
LTF6E□NF- 200K-□□	200	3
LTF6E□NF- 300K-□□	300	4
LTF6E□NF- 400K-□□	400	5
LTF6E□NF- 500K-□□	500	6
LTF6E□NF- 600K-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



How to Order

LTF6E **1** **NH** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

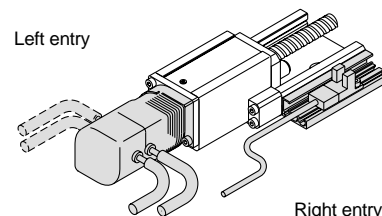
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



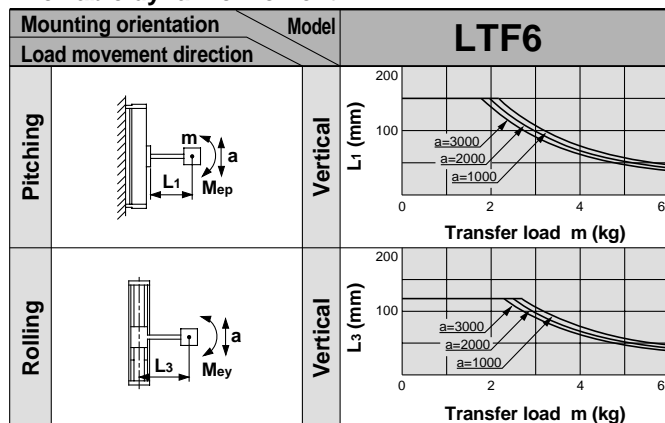
Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight	kg		2.4	2.9	3.4	3.9	4.4	4.9
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	3						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						390
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
Controller	Model	LC1-1H2VH□-□□ (Refer to page 73 for details.)							
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)							

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

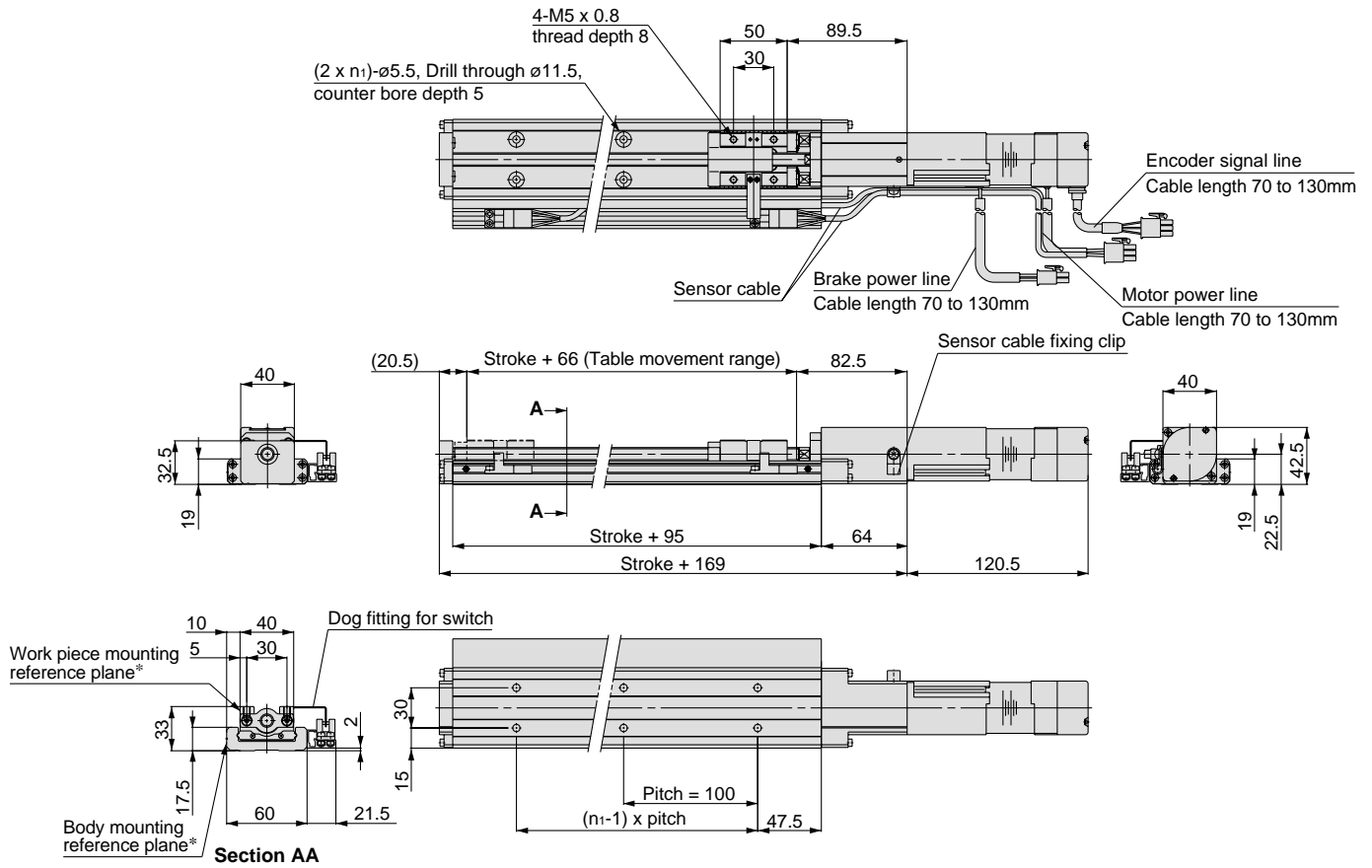


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6E□NH

Scale: 18%



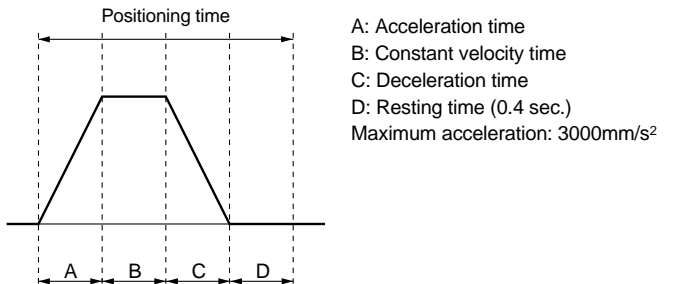
Model	Stroke	n ₁
LTF6E□NH- 100K-□□	100	2
LTF6E□NH- 200K-□□	200	3
LTF6E□NH- 300K-□□	300	4
LTF6E□NH- 400K-□□	400	5
LTF6E□NH- 500K-□□	500	6
LTF6E□NH- 600K-□□	600	7

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **PH** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

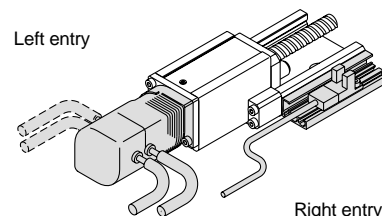
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



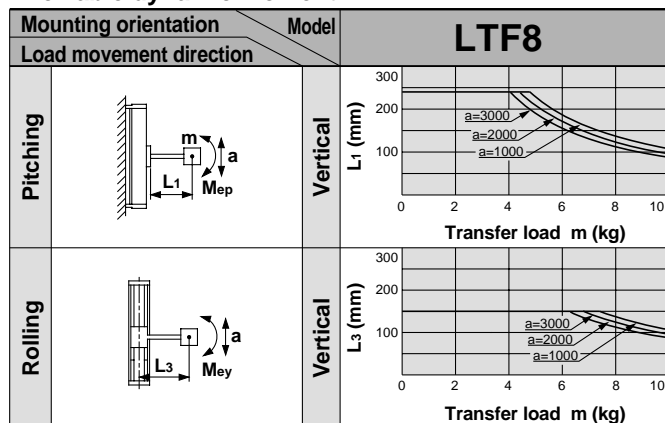
Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.0	5.9	6.7	7.5	8.4	9.2	10.0	10.9	11.7	12.5
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	10									
	Rated thrust	N	360									
	Maximum speed	mm/s	500							440	350	290
	Positioning repeatability	mm	±0.02									
Main parts	Motor	AC servomotor (200W) with brake										
	Encoder	Incremental system										
	Lead screw	Ground ball screw ∅15mm, 10mm lead										
	Guide	Frame-type linear guide										
	Motor/Screw connection	With coupling										
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
Controller	Model	LC1-1H3VF□-□□ (Refer to page 73 for details.)										
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)										

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

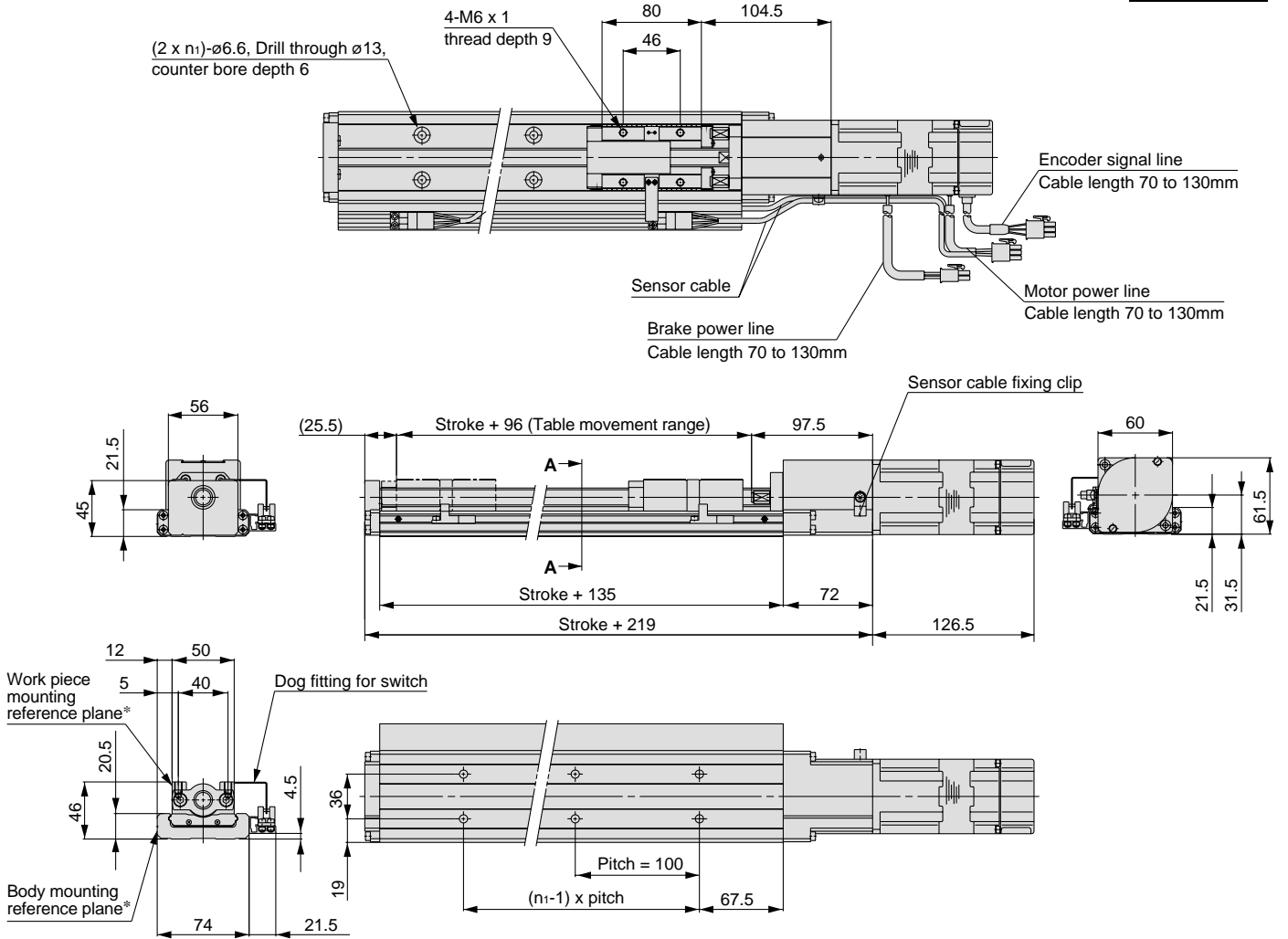


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□PH

Scale: 18%



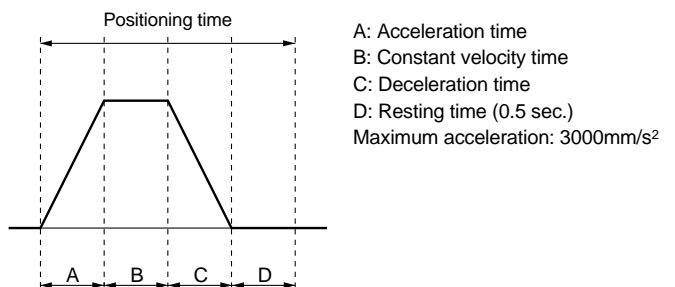
Model	Stroke	n ₁
LTF8F□PH- 100K-□□	100	2
LTF8F□PH- 200K-□□	200	3
LTF8F□PH- 300K-□□	300	4
LTF8F□PH- 400K-□□	400	5
LTF8F□PH- 500K-□□	500	6
LTF8F□PH- 600K-□□	600	7
LTF8F□PH- 700K-□□	700	8
LTF8F□PH- 800K-□□	800	9
LTF8F□PH- 900K-□□	900	10
LTF8F□PH-1000K-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **PL** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

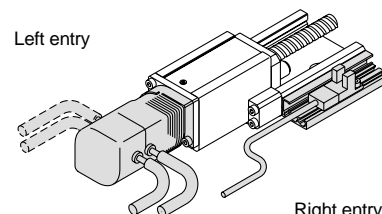
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



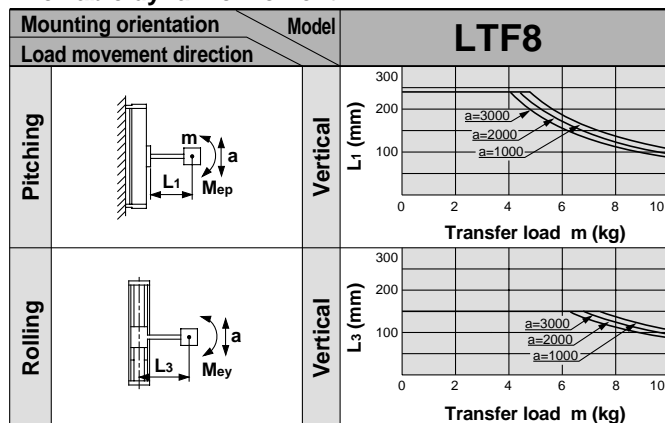
Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.0	5.9	6.7	7.5	8.4	9.2	10.0	10.9	11.7	12.5
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	5									
	Rated thrust	N	180									
	Maximum speed	mm/s	1000						890	710	580	480
	Positioning repeatability	mm	±0.02									
Main parts	Motor	AC servomotor (200W) with brake										
	Encoder	Incremental system										
	Lead screw	Ground ball screw ∅15mm, 20mm lead										
	Guide	Frame-type linear guide										
	Motor/Screw connection	With coupling										
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
Controller	Model	LC1-1H3VL□-□□ (Refer to page 73 for details.)										
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)										

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

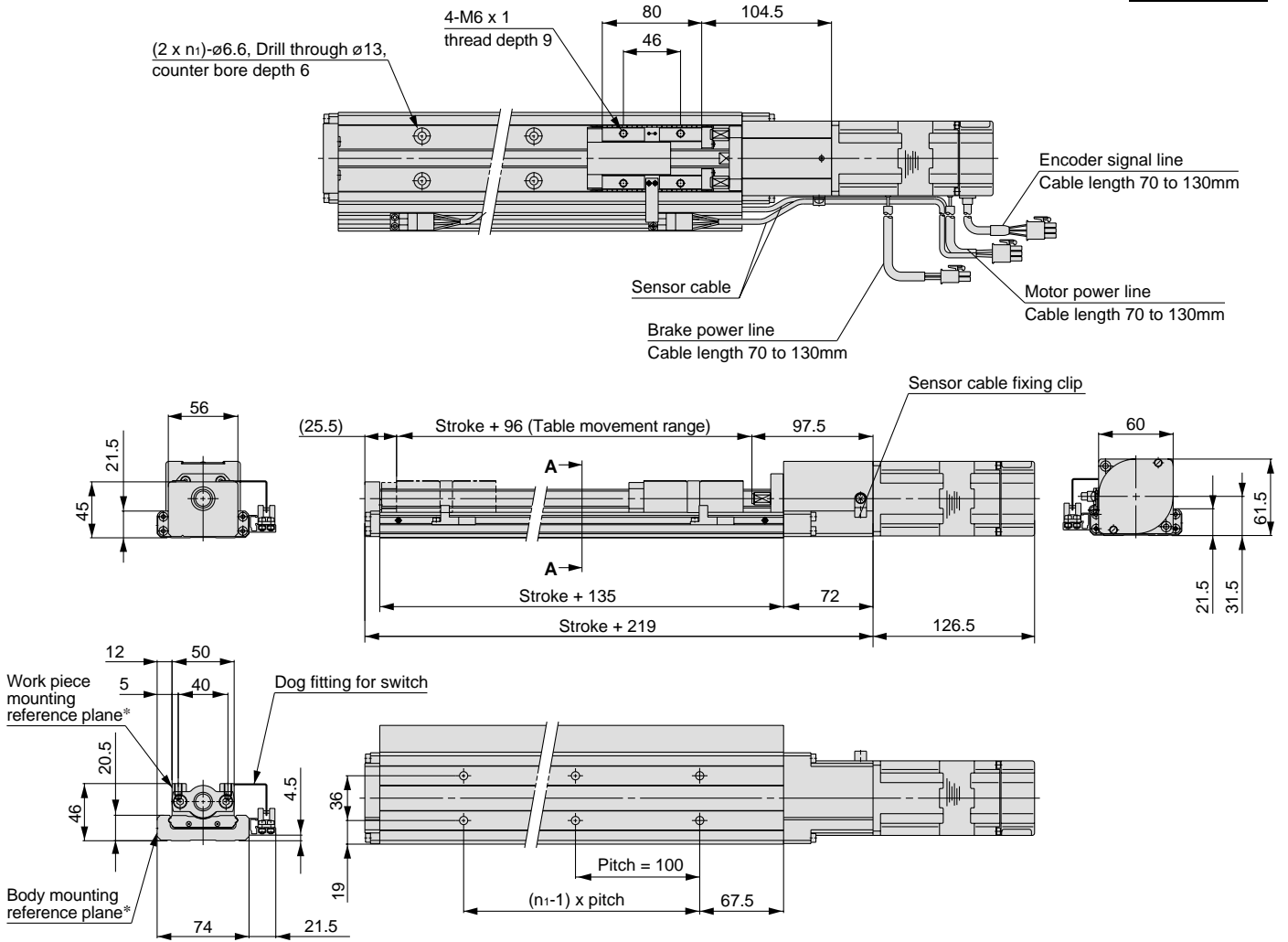


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□PL

Scale: 18%



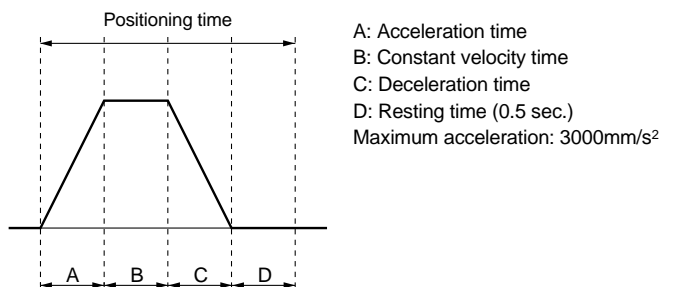
Model	Stroke	n ₁
LTF8F□PL- 100K-□□	100	2
LTF8F□PL- 200K-□□	200	3
LTF8F□PL- 300K-□□	300	4
LTF8F□PL- 400K-□□	400	5
LTF8F□PL- 500K-□□	500	6
LTF8F□PL- 600K-□□	600	7
LTF8F□PL- 700K-□□	700	8
LTF8F□PL- 800K-□□	800	9
LTF8F□PL- 900K-□□	900	10
LTF8F□PL-1000K-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **NH** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

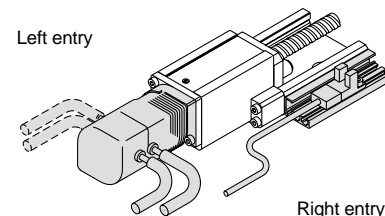
Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction



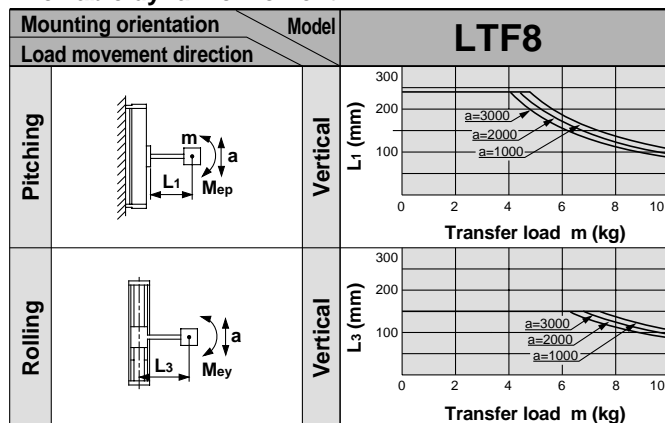
Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.0	5.9	6.7	7.5	8.4	9.2	10.0	10.9	11.7	12.5
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	10									
	Rated thrust	N	360									
	Maximum speed	mm/s	500							440	350	290
Positioning repeatability	mm	±0.05										
Main parts	Motor	AC servomotor (200W) with brake										
	Encoder	Incremental system										
	Lead screw	Rolled ball screw ∅15mm, 10mm lead										
	Guide	Frame-type linear guide										
	Motor/Screw connection	With coupling										
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
Controller	Model	LC1-1H3VH□-□□ (Refer to page 73 for details.)										
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)										

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

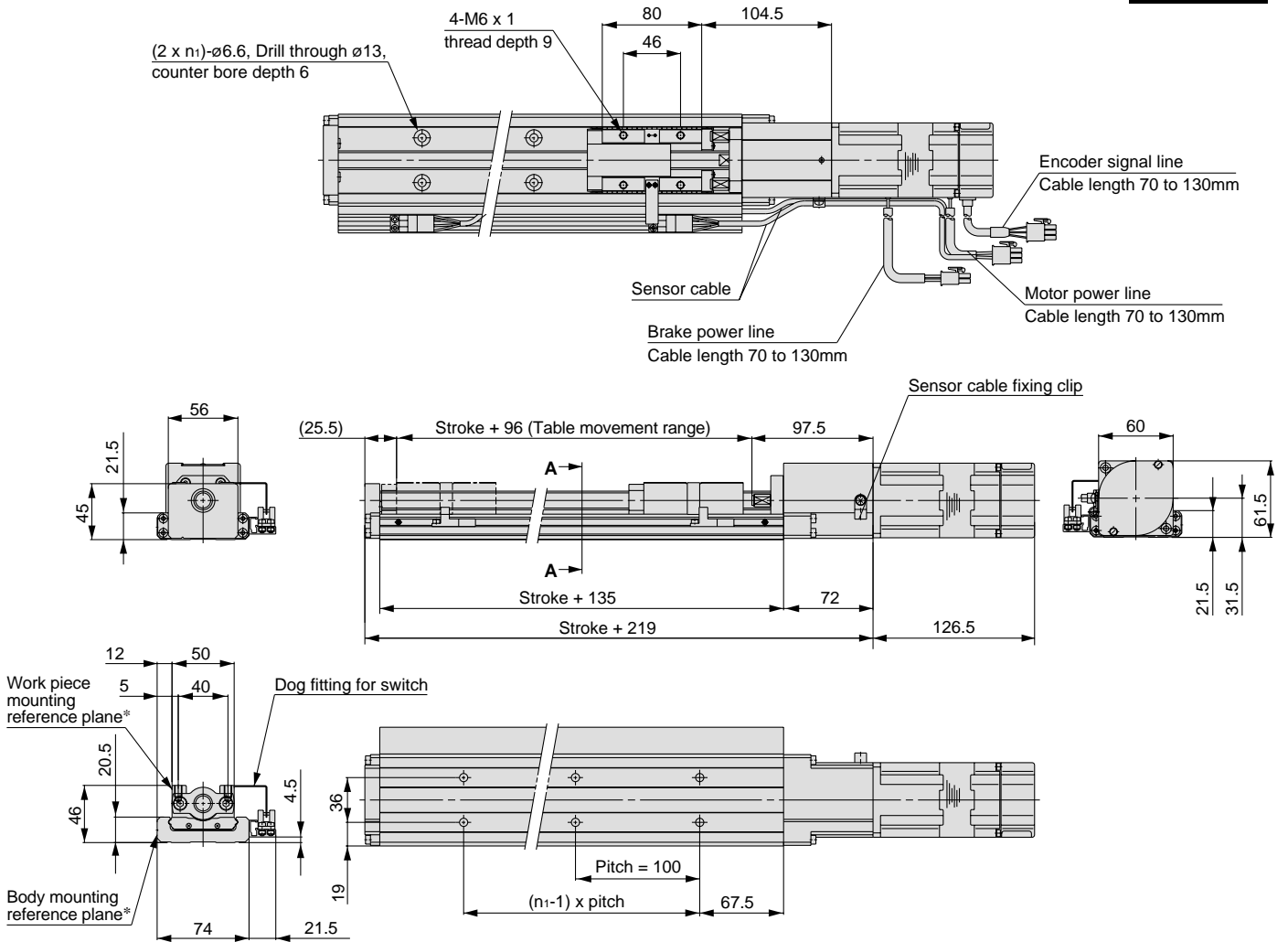


m : Transfer load (kg) Me: Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□NH

Scale: 18%



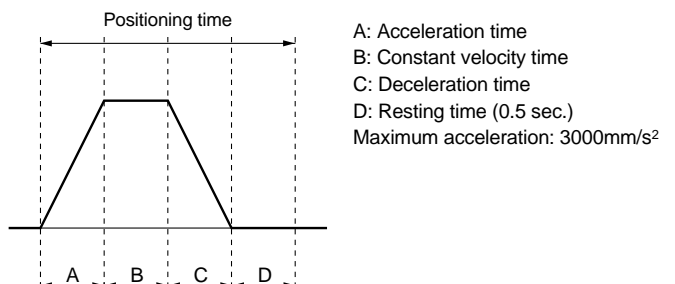
Model	Stroke	n ₁
LTF8F□NH- 100K-□□	100	2
LTF8F□NH- 200K-□□	200	3
LTF8F□NH- 300K-□□	300	4
LTF8F□NH- 400K-□□	400	5
LTF8F□NH- 500K-□□	500	6
LTF8F□NH- 600K-□□	600	7
LTF8F□NH- 700K-□□	700	8
LTF8F□NH- 800K-□□	800	9
LTF8F□NH- 900K-□□	900	10
LTF8F□NH-1000K-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



How to Order

LTF8F **1** **NL** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

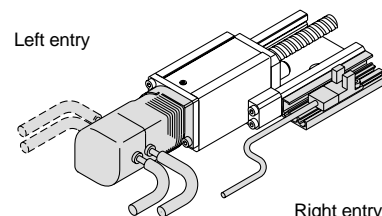
Cable length

2	2m
3	3m
4	4m
5	5m

Motor/switch entry direction

R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



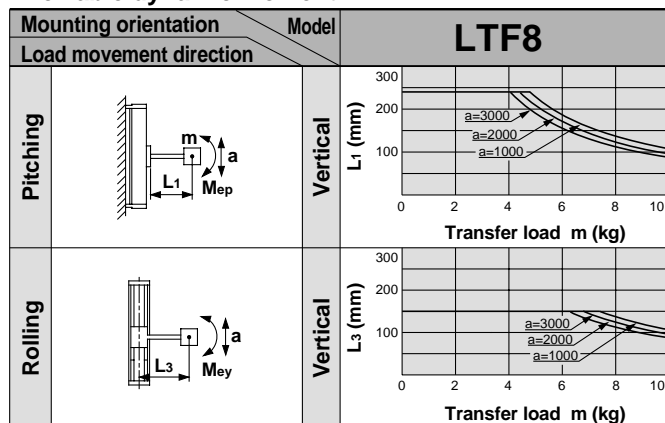
Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight	kg	5.0	5.9	6.7	7.5	8.4	9.2	10.0	10.9	11.7	12.5
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	5									
	Rated thrust	N	180									
	Maximum speed	mm/s	1000							890	710	580
	Positioning repeatability	mm	±0.05									
Main parts	Motor	AC servomotor (200W) with brake										
	Encoder	Incremental system										
	Lead screw	Rolled ball screw ∅15mm, 20mm lead										
	Guide	Frame-type linear guide										
	Motor/Screw connection	With coupling										
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
Controller	Model	LC1-1H3VL□-□□ (Refer to page 73 for details.)										
Regenerative absorption unit	Model	LC7R-K1□A□□ (Refer to page 86 for details.)										

Note) Be sure to use a regenerative absorption unit with this product.

Allowable Moment (N·m)

Allowable dynamic moment

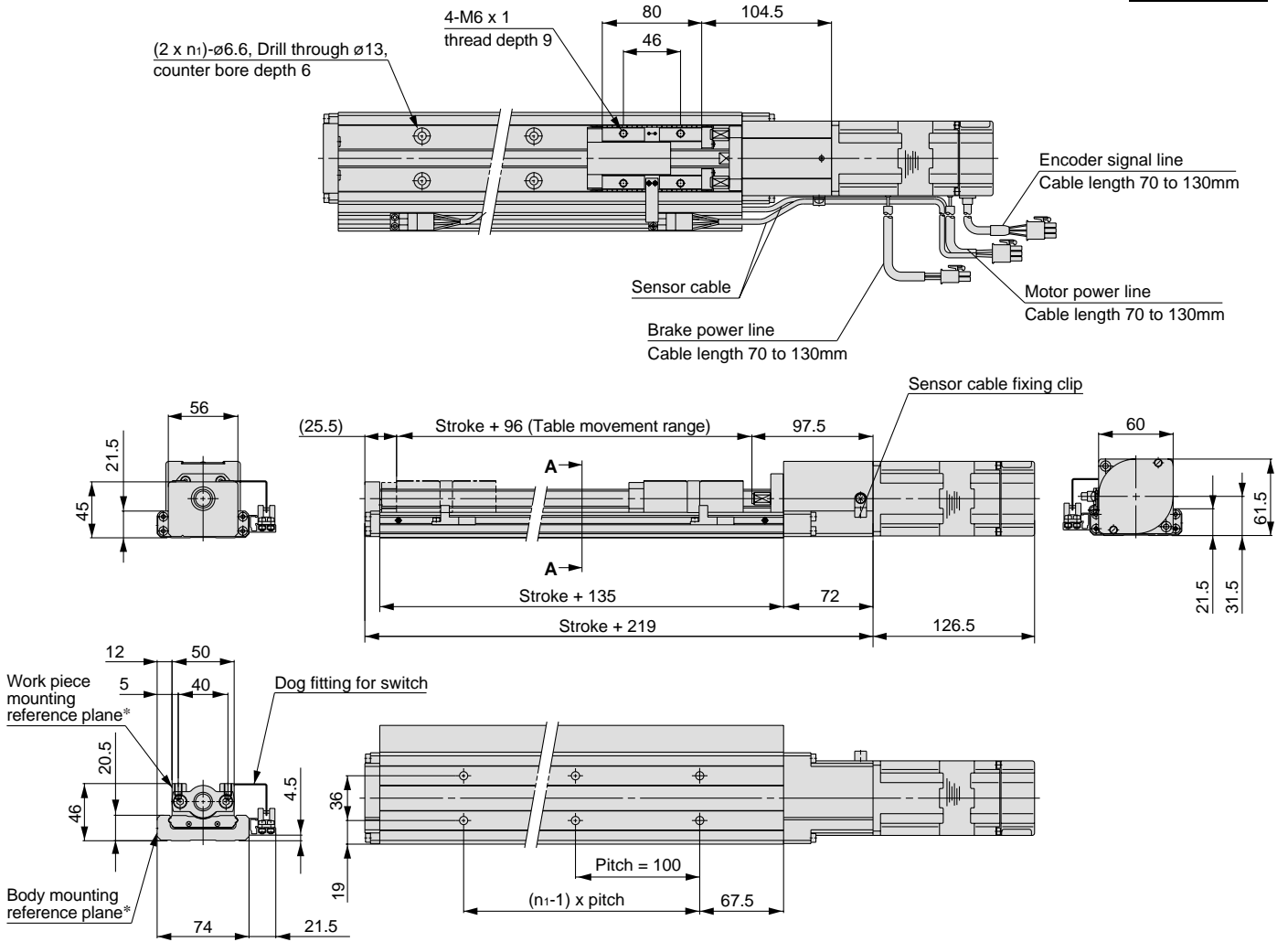


m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF8F□NL

Scale: 18%



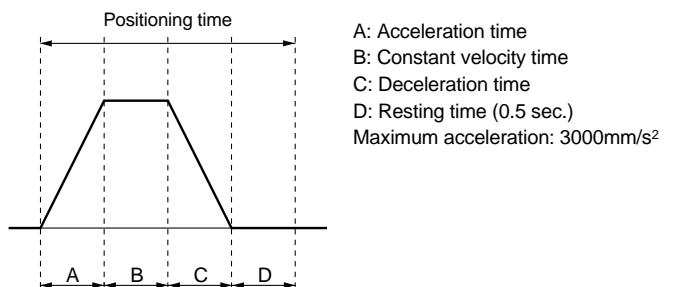
Model	Stroke	n_1
LTF8F□NL- 100K-□□	100	2
LTF8F□NL- 200K-□□	200	3
LTF8F□NL- 300K-□□	300	4
LTF8F□NL- 400K-□□	400	5
LTF8F□NL- 500K-□□	500	6
LTF8F□NL- 600K-□□	600	7
LTF8F□NL- 700K-□□	700	8
LTF8F□NL- 800K-□□	800	9
LTF8F□NL- 900K-□□	900	10
LTF8F□NL-1000K-□□	1000	11

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 68 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.

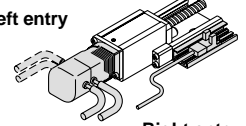


How to Order

LTF6 **G** **E** **1** **PF** — **Stroke** — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

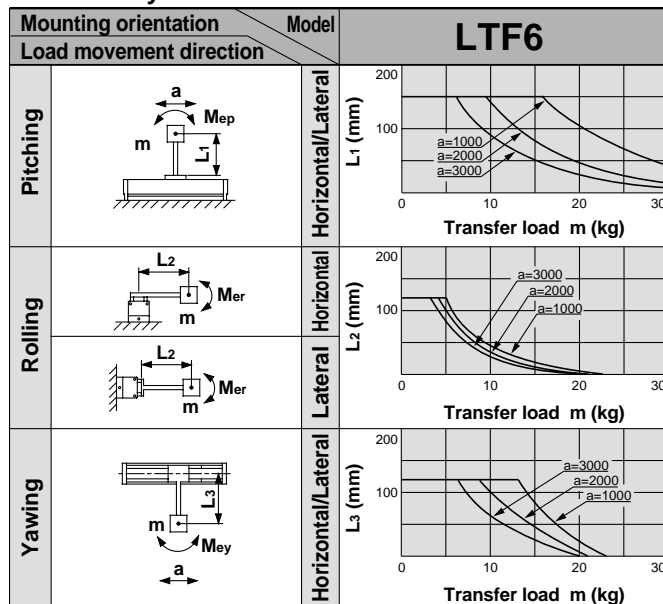
Specifications

Dog fittings for switch are attached to all types except type "Nil".

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

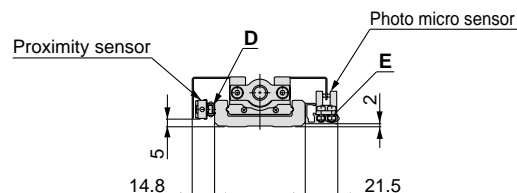
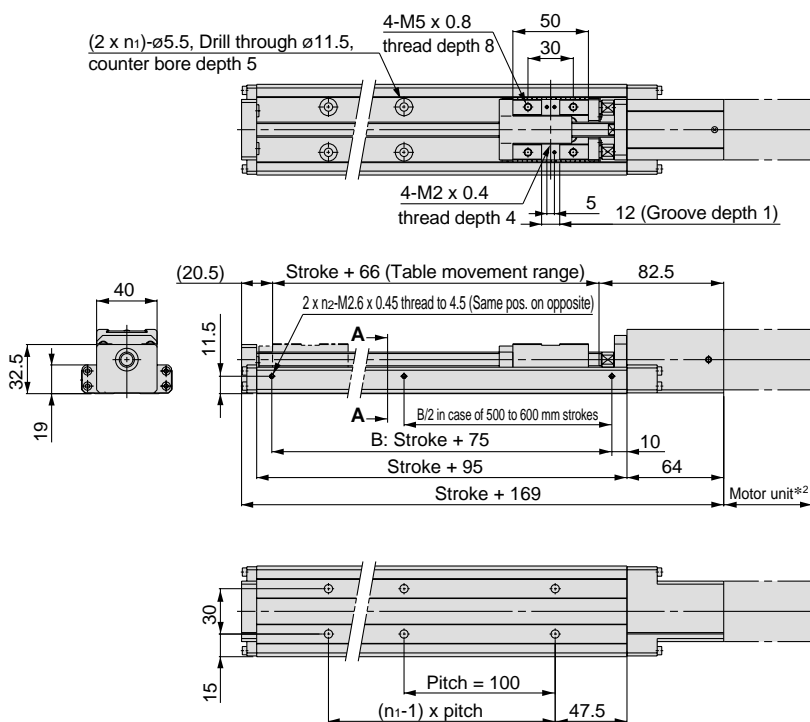


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

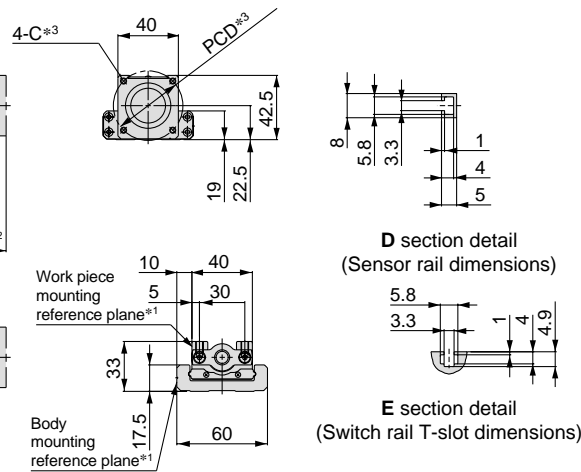
Refer to page 71 for deflection data.

Dimensions/LTF6□E□PF(X10)

Scale: 20%



Section AA (Sensor mounting dimensions)



Section AA

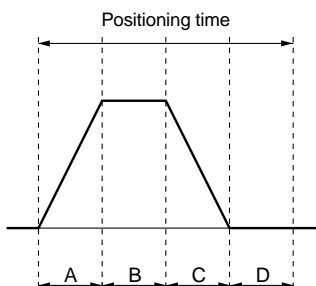
Model	Stroke	n1	n2
LTF6□E□PF- 100-□□-X10	100	2	1
LTF6□E□PF- 200-□□-X10	200	3	1
LTF6□E□PF- 300-□□-X10	300	4	1
LTF6□E□PF- 400-□□-X10	400	5	1
LTF6□E□PF- 500-□□-X10	500	6	2
LTF6□E□PF- 600-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E	103
		200/230	MSM012P1A	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1	86.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP	94.5
		200/230	SGME-01AF12	SGDE-01AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

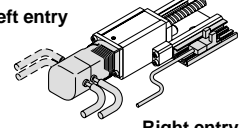
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **PH** — Stroke — — — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

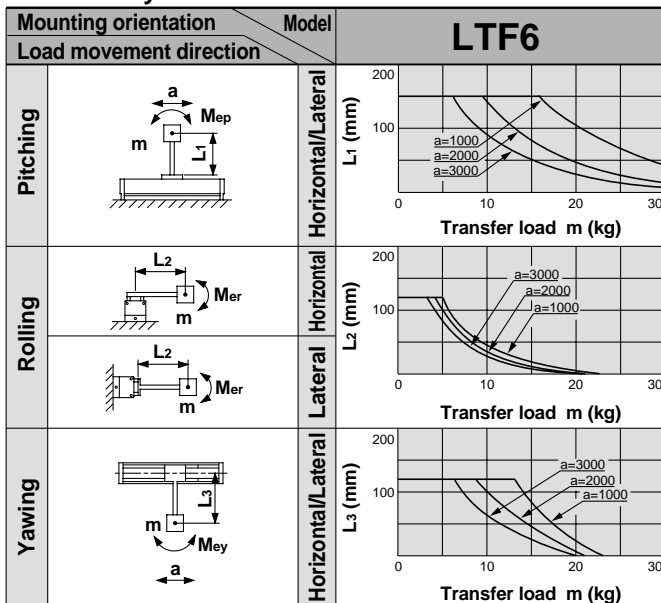
Dot fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor) kg			1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range °C	5 to 40 (with no condensation)							
	Work load kg	15							
	Rated thrust N	180							
	Maximum speed mm/s	500							390
	Positioning repeatability mm	±0.02							
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

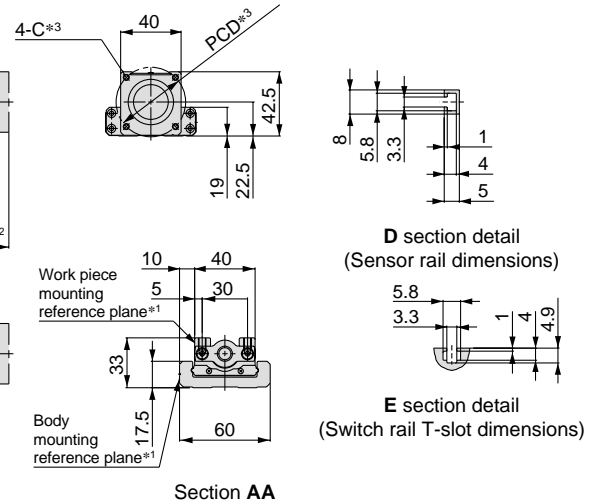
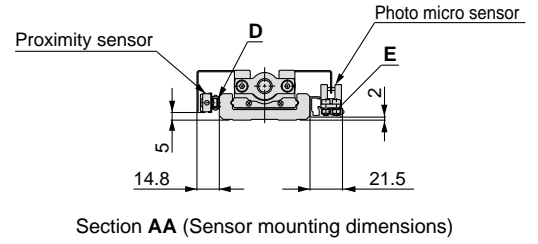
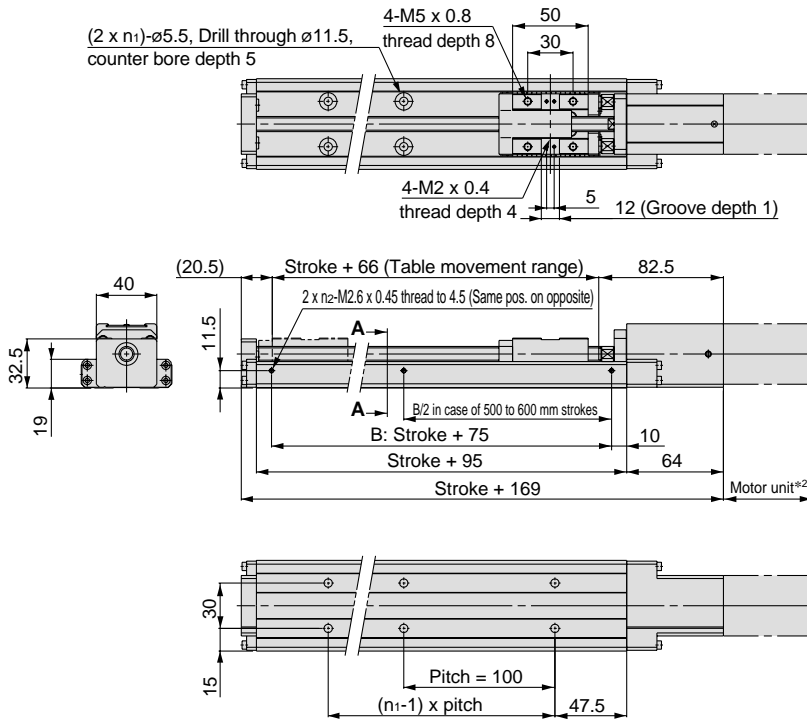


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Dimensions/LTF6□E□PH(X10)

Scale: 20%



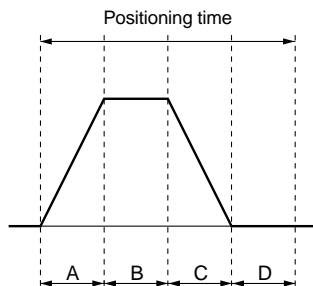
Model	Stroke	n1	n2
LTF6□E□PH- 100-□□-X10	100	2	1
LTF6□E□PH- 200-□□-X10	200	3	1
LTF6□E□PH- 300-□□-X10	300	4	1
LTF6□E□PH- 400-□□-X10	400	5	1
LTF6□E□PH- 500-□□-X10	500	6	2
LTF6□E□PH- 600-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E	103
		200/230	MSM012P1A	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1	86.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP	94.5
		200/230	SGME-01AF12	SGDE-01AP	

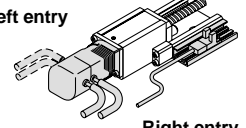
- * Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **NF** — Stroke — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

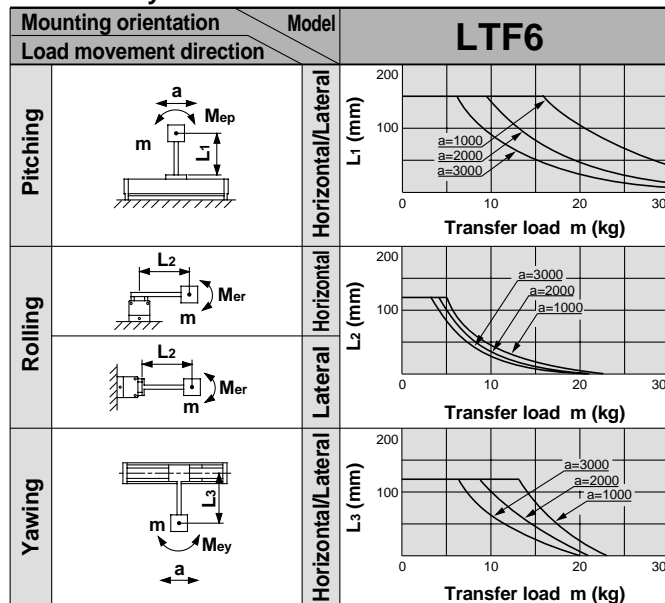
Specifications

Dog fittings for switch are attached to all types except type "Nil".

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

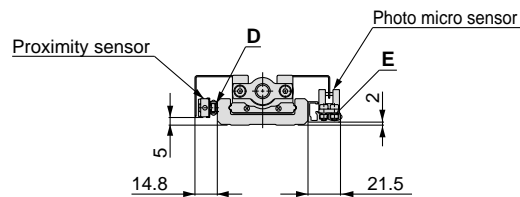
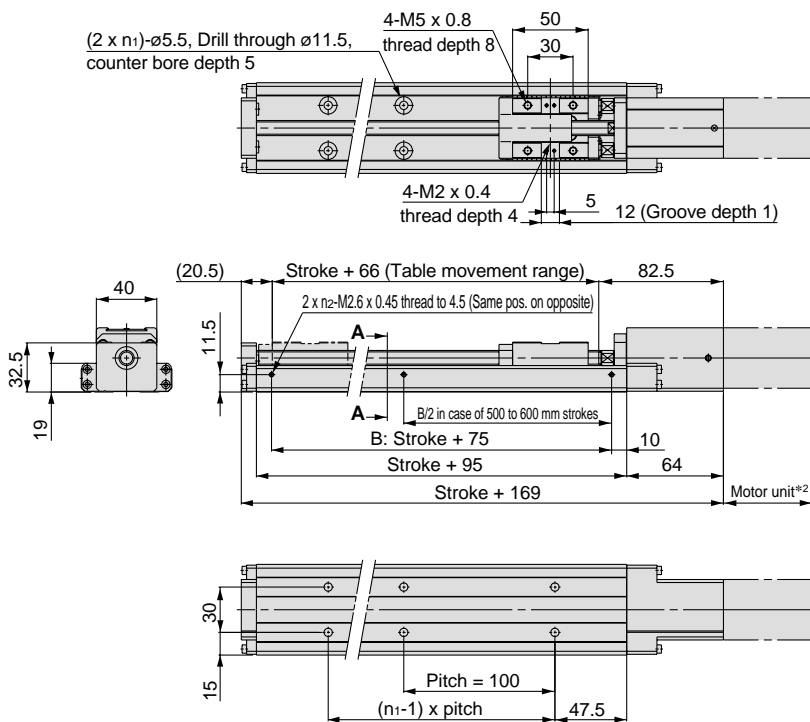


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

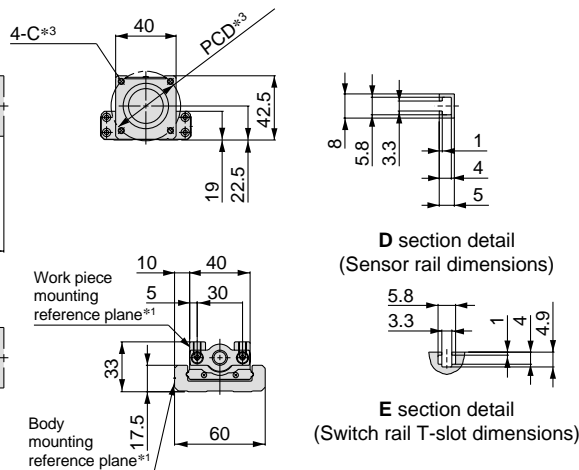
Refer to page 71 for deflection data.

Dimensions/LTF6□E□NF(X10)

Scale: 20%



Section AA (Sensor mounting dimensions)



Section AA

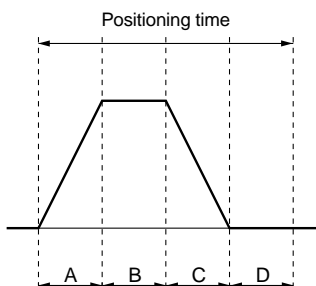
Model	Stroke	n1	n2
LTF6□E□NF- 100-□□-X10	100	2	1
LTF6□E□NF- 200-□□-X10	200	3	1
LTF6□E□NF- 300-□□-X10	300	4	1
LTF6□E□NF- 400-□□-X10	400	5	1
LTF6□E□NF- 500-□□-X10	500	6	2
LTF6□E□NF- 600-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E	103
		200/230	MSM012P1A	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1	86.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP	94.5
		200/230	SGME-01AF12	SGDE-01AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

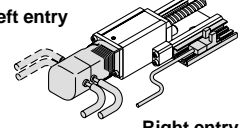
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **NH** — Stroke — — — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

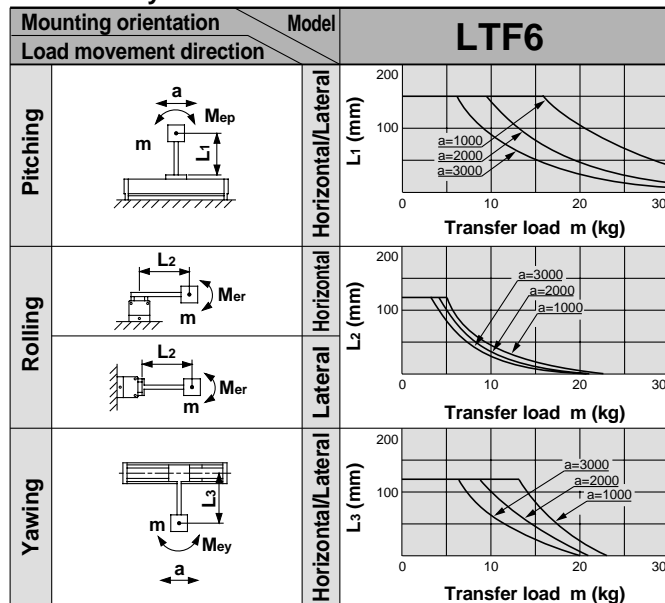
Dot fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor) kg			1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range °C	5 to 40 (with no condensation)							
	Work load kg	15							
	Rated thrust N	180							
	Maximum speed mm/s	500							390
	Positioning repeatability mm	±0.05							
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							

Allowable Moment (N·m)

Allowable dynamic moment

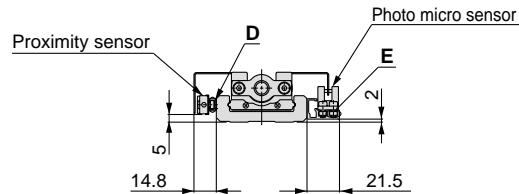
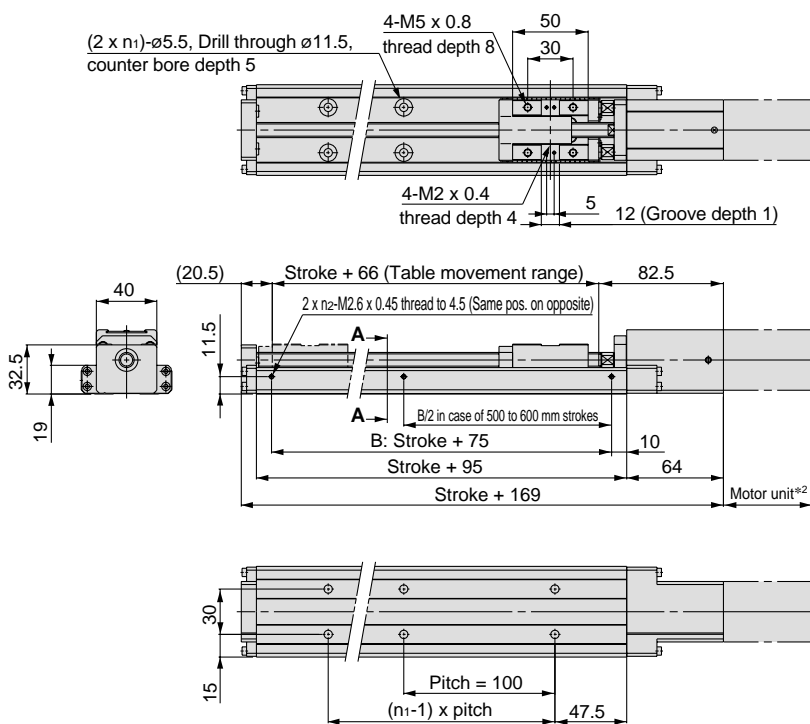


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

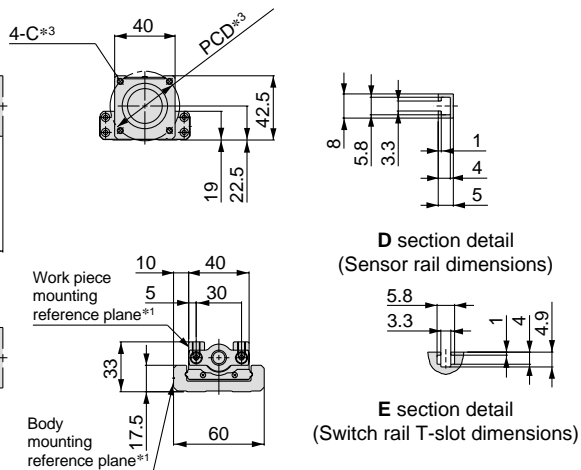
Refer to page 71 for deflection data.

Dimensions/LTF6□E□NH(X10)

Scale: 20%



Section AA (Sensor mounting dimensions)



Section AA

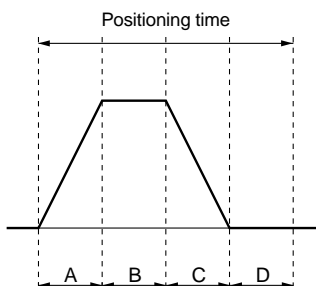
Model	Stroke	n1	n2
LTF6□E□NH- 100-□□-X10	100	2	1
LTF6□E□NH- 200-□□-X10	200	3	1
LTF6□E□NH- 300-□□-X10	300	4	1
LTF6□E□NH- 400-□□-X10	400	5	1
LTF6□E□NH- 500-□□-X10	500	6	2
LTF6□E□NH- 600-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E	103
		200/230	MSM012P1A	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1	86.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP	94.5
		200/230	SGME-01AF12	SGDE-01AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **PH** — Stroke — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

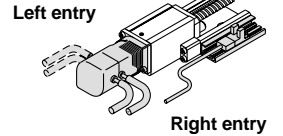
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction



Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

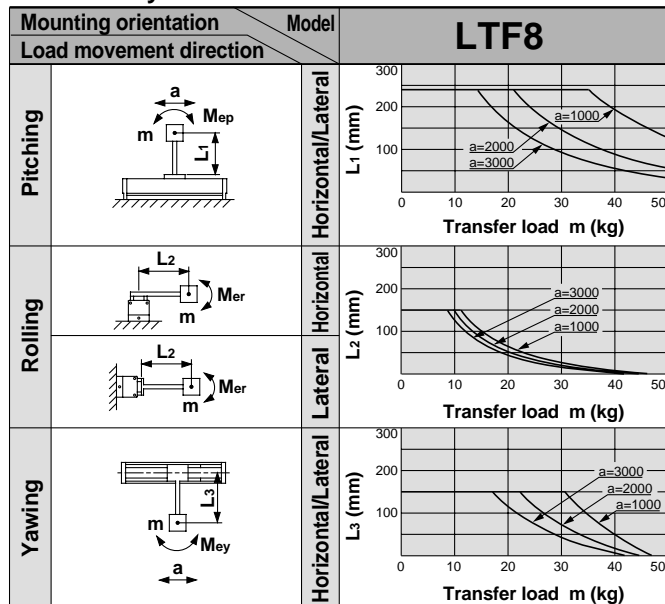
Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000	
Performance	Body weight (without motor) kg		3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1	
	Operating temperature range °C		5 to 40 (with no condensation)										
	Work load kg		50										
	Rated thrust N		360										
	Maximum speed mm/s		500					440	350	290	240		
	Positioning repeatability mm		±0.02										
Main parts	Motor		AC servomotor (200W)										
	Encoder		Incremental system										
	Lead screw		Ground ball screw ∅15mm, 10mm lead										
	Guide		Frame-type linear guide										
	Motor/Screw connection		With coupling										
Switch	Model		Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
			Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)										
			Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)										

Dog fittings for switch are attached to all types except type "Nil".

Allowable Moment (N·m)

Allowable dynamic moment

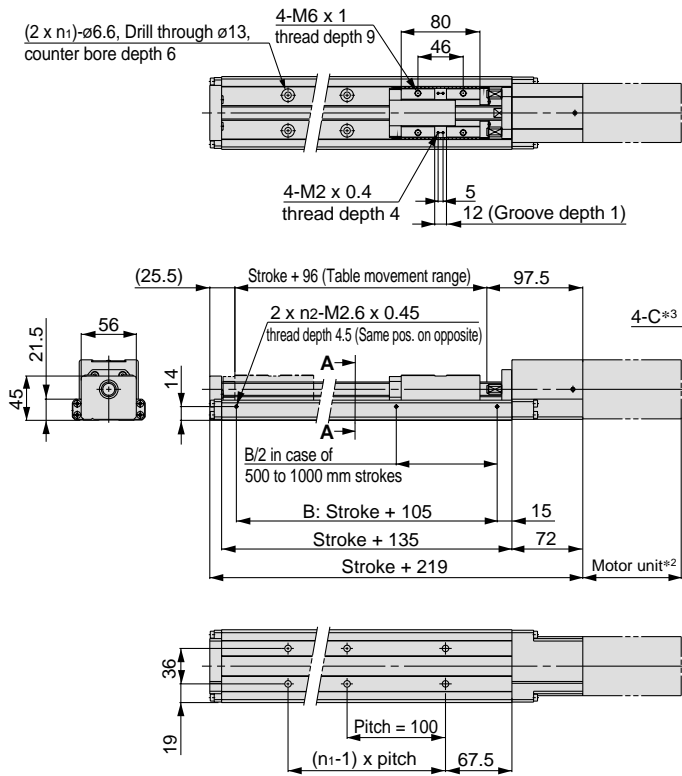


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

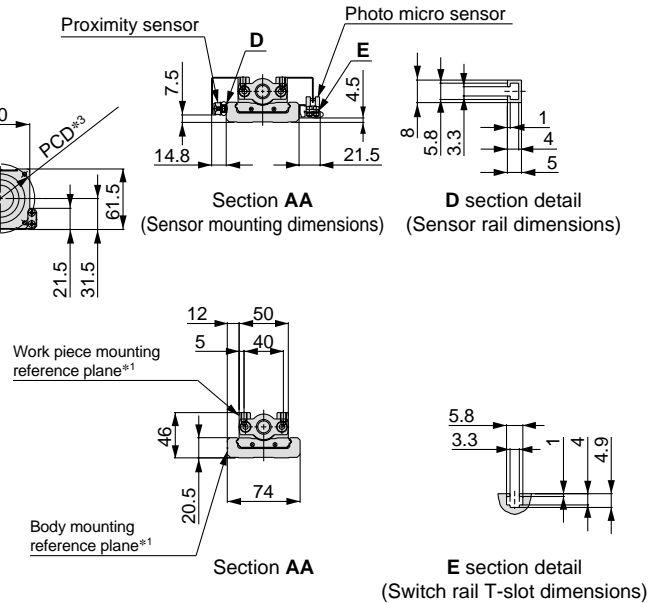
Refer to page 71 for deflection data.

Dimensions/LTF8□F□PH(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



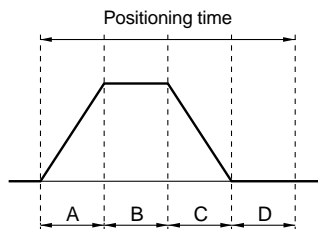
Model	Stroke	n1	n2
LTF8□F□PH- 100-□□-X10	100	2	1
LTF8□F□PH- 200-□□-X10	200	3	1
LTF8□F□PH- 300-□□-X10	300	4	1
LTF8□F□PH- 400-□□-X10	400	5	1
LTF8□F□PH- 500-□□-X10	500	6	2

Model	Stroke	n1	n2
LTF8□F□PH- 600-□□-X10	600	7	2
LTF8□F□PH- 700-□□-X10	700	8	2
LTF8□F□PH- 800-□□-X10	800	9	2
LTF8□F□PH- 900-□□-X10	900	10	2
LTF8□F□PH-1000-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E	95
		200/230	MSM022P1A	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1	89
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP	96.5
		200/230	SGME-02AF12	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **PL** — Stroke — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

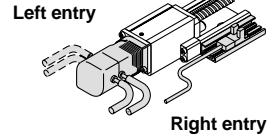
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction



Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

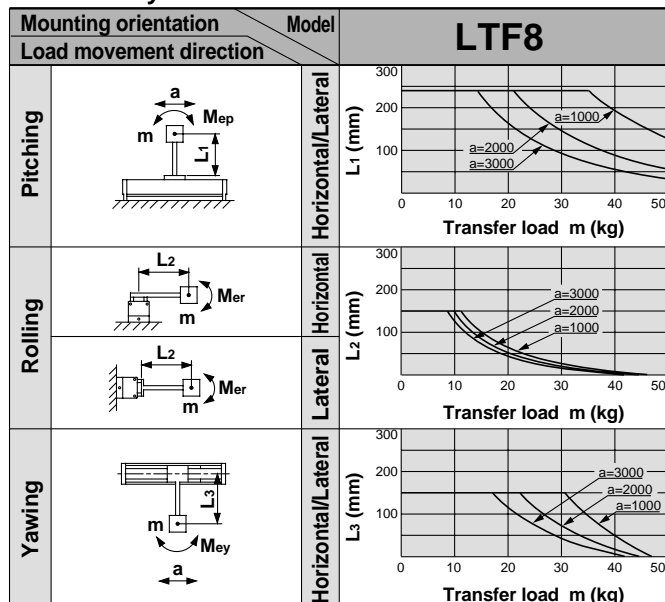
Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	
Performance	Body weight (without motor) kg			3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1	
	Operating temperature range °C			5 to 40 (with no condensation)										
	Work load kg			25										
	Rated thrust N			180										
	Maximum speed mm/s			1000				890	710	580	480			
	Positioning repeatability mm			±0.02										
Main parts	Motor			AC servomotor (200W)										
	Encoder			Incremental system										
	Lead screw			Ground ball screw ∅15mm, 20mm lead										
	Guide			Frame-type linear guide										
	Motor/Screw connection			With coupling										
Switch	Model			Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
				Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)										
				Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)										

Dog fittings for switch are attached to all types except type "Nil".

Allowable Moment (N·m)

Allowable dynamic moment

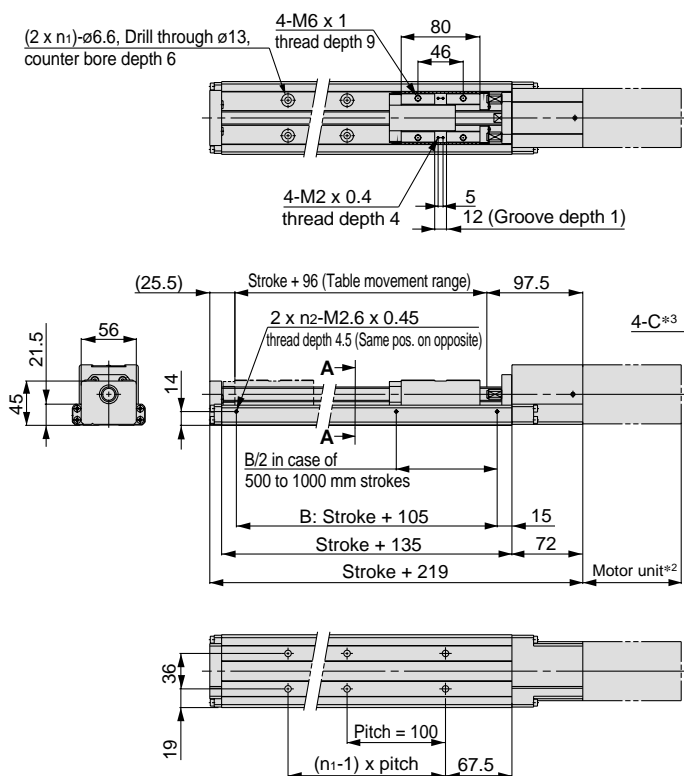


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

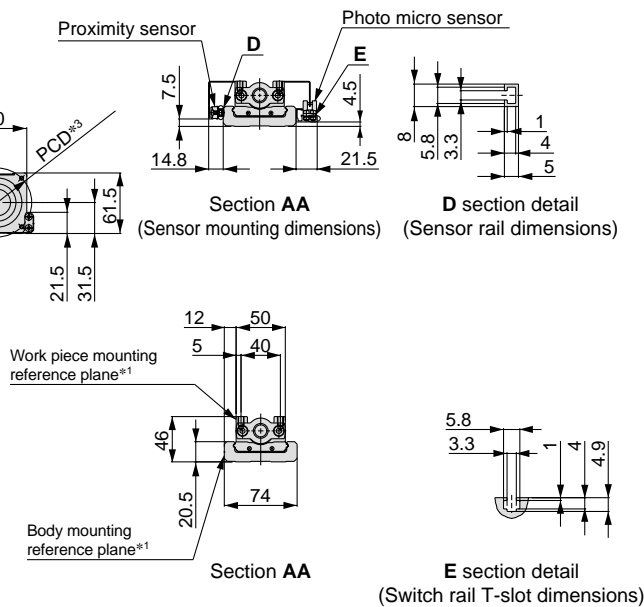
Refer to page 71 for deflection data.

Dimensions/LTF8□F□PL(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



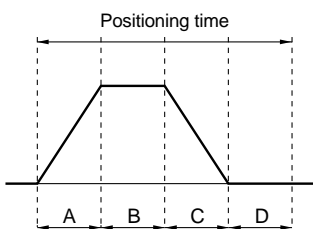
Model	Stroke	n1	n2
LTF8□F□PL- 100-□□-X10	100	2	1
LTF8□F□PL- 200-□□-X10	200	3	1
LTF8□F□PL- 300-□□-X10	300	4	1
LTF8□F□PL- 400-□□-X10	400	5	1
LTF8□F□PL- 500-□□-X10	500	6	2

Model	Stroke	n1	n2
LTF8□F□PL- 600-□□-X10	600	7	2
LTF8□F□PL- 700-□□-X10	700	8	2
LTF8□F□PL- 800-□□-X10	800	9	2
LTF8□F□PL- 900-□□-X10	900	10	2
LTF8□F□PL-1000-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.5 sec.)*

Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E	95
		200/230	MSM022P1A	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1	89
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP	96.5
		200/230	SGME-02AF12	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **NH** — Stroke — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

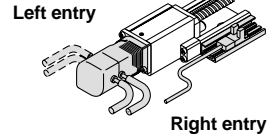
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction



Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

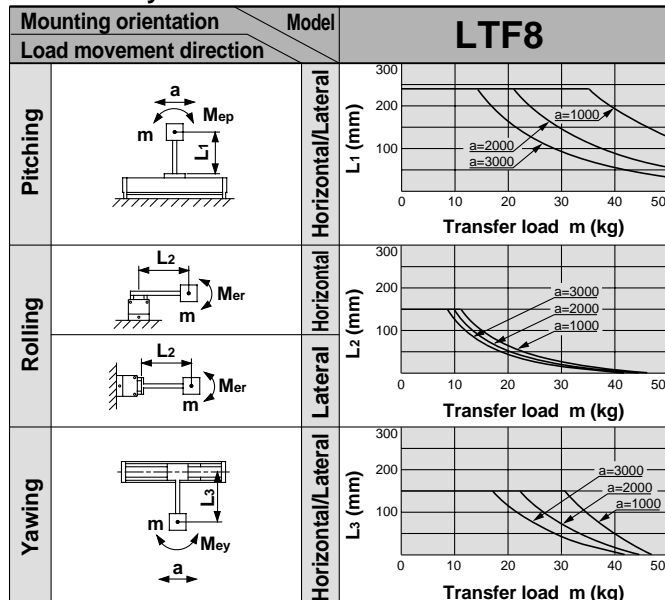
Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000		
Performance	Body weight (without motor) kg			3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1		
	Operating temperature range °C	5 to 40 (with no condensation)													
	Work load kg	50													
	Rated thrust N	360													
	Maximum speed mm/s	500						440		350		290		240	
	Positioning repeatability mm	±0.05													
Main parts	Motor	AC servomotor (200W)													
	Encoder	Incremental system													
	Lead screw	Rolled ball screw ∅15mm, 10mm lead													
	Guide	Frame-type linear guide													
	Motor/Screw connection	With coupling													
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)													
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)													
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)													

Dog fittings for switch are attached to all types except type "Nil".

Allowable Moment (N·m)

Allowable dynamic moment

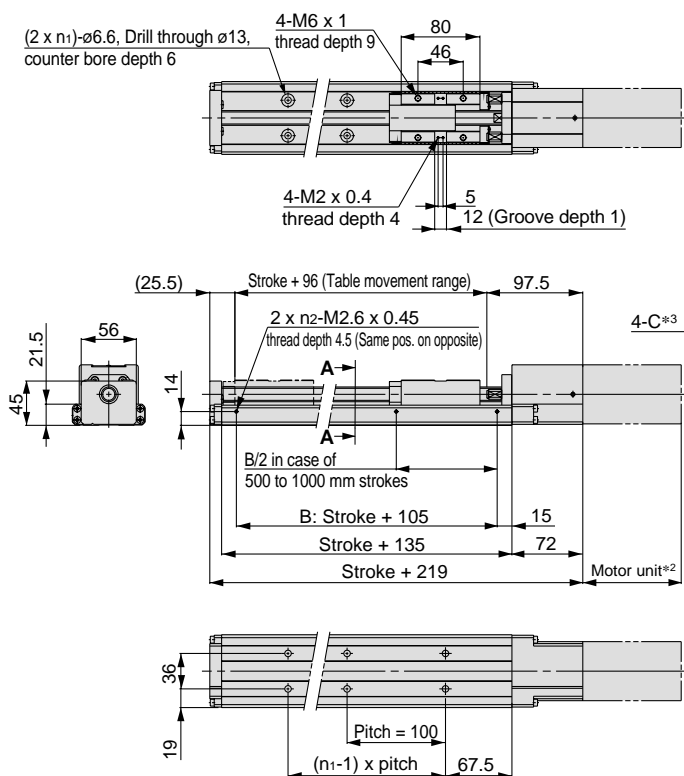


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

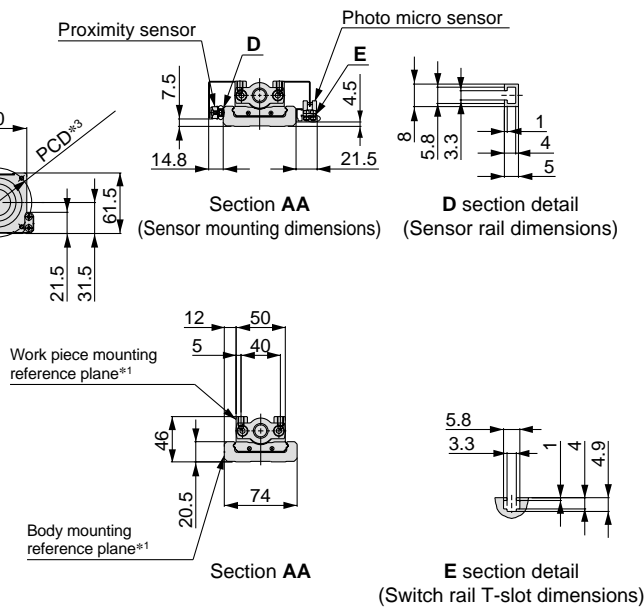
Refer to page 71 for deflection data.

Dimensions/LTF8□F□NH(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



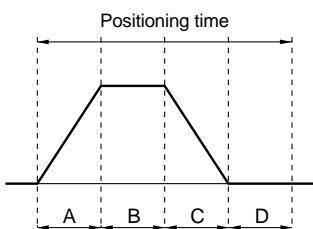
Model	Stroke	n ₁	n ₂
LTF8□F□NH- 100-□□-X10	100	2	1
LTF8□F□NH- 200-□□-X10	200	3	1
LTF8□F□NH- 300-□□-X10	300	4	1
LTF8□F□NH- 400-□□-X10	400	5	1
LTF8□F□NH- 500-□□-X10	500	6	2

Model	Stroke	n ₁	n ₂
LTF8□F□NH- 600-□□-X10	600	7	2
LTF8□F□NH- 700-□□-X10	700	8	2
LTF8□F□NH- 800-□□-X10	800	9	2
LTF8□F□NH- 900-□□-X10	900	10	2
LTF8□F□NH-1000-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.5 sec.)*

Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E	95
		200/230	MSM022P1A	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1	89
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP	96.5
		200/230	SGME-02AF12	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

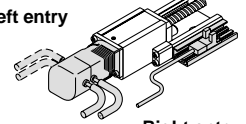
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **NL** — Stroke — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

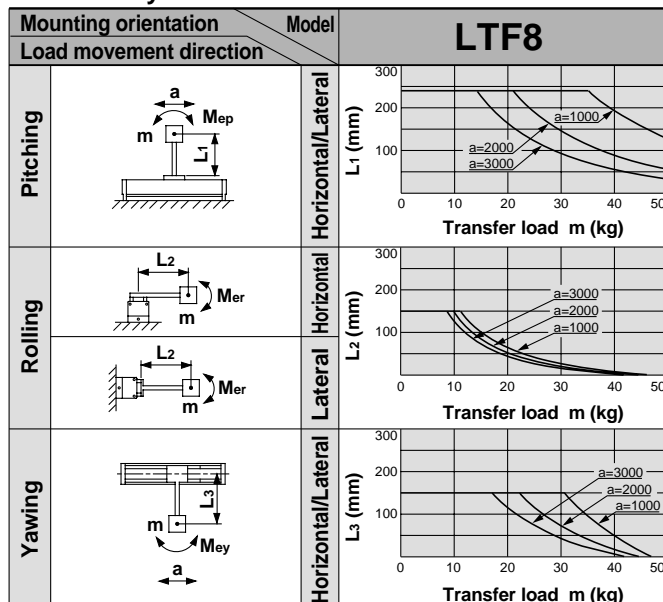
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	
Performance	Body weight (without motor) kg			3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1	
	Operating temperature range °C			5 to 40 (with no condensation)										
	Work load kg			25										
	Rated thrust N			180										
	Maximum speed mm/s			1000							890	710	580	480
	Positioning repeatability mm			±0.05										
Main parts	Motor			AC servomotor (200W)										
	Encoder			Incremental system										
	Lead screw			Rolled ball screw ∅15mm, 20mm lead										
	Guide			Frame-type linear guide										
	Motor/Screw connection			With coupling										
Switch	Model			Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
				Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)										
				Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)										

Allowable Moment (N·m)

Allowable dynamic moment

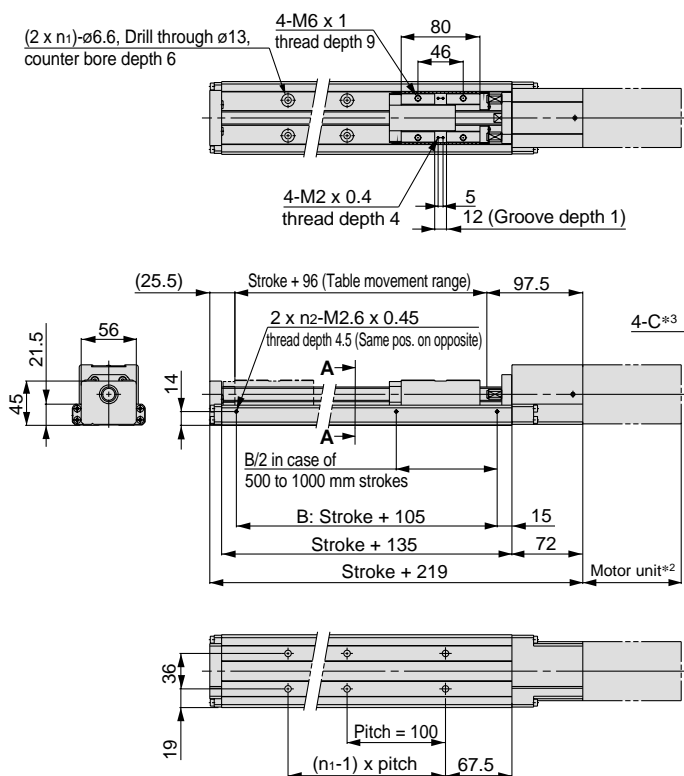


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

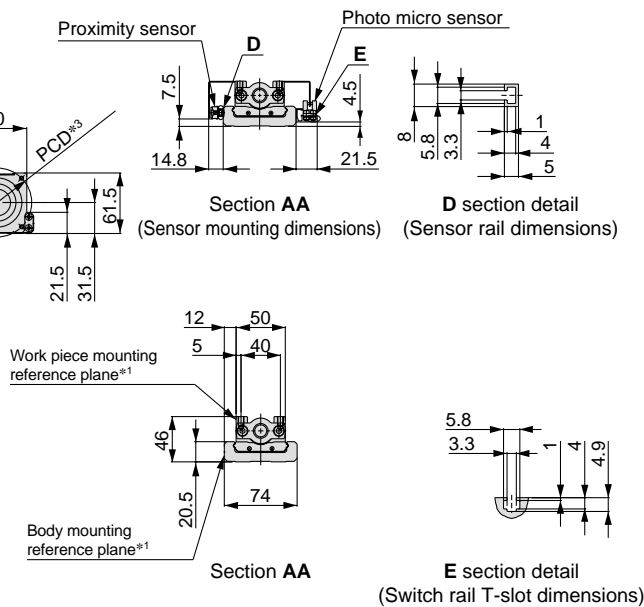
Refer to page 71 for deflection data.

Dimensions/LTF8□F□NL(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



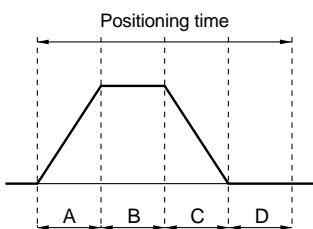
Model	Stroke	n ₁	n ₂
LTF8□F□NL- 100-□□-X10	100	2	1
LTF8□F□NL- 200-□□-X10	200	3	1
LTF8□F□NL- 300-□□-X10	300	4	1
LTF8□F□NL- 400-□□-X10	400	5	1
LTF8□F□NL- 500-□□-X10	500	6	2

Model	Stroke	n ₁	n ₂
LTF8□F□NL- 600-□□-X10	600	7	2
LTF8□F□NL- 700-□□-X10	700	8	2
LTF8□F□NL- 800-□□-X10	800	9	2
LTF8□F□NL- 900-□□-X10	900	10	2
LTF8□F□NL-1000-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1A	MSD021P1E	95
		200/230	MSM022P1A	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1	89
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12	SGDE-02BP	96.5
		200/230	SGME-02AF12	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **PF** — Stroke **K** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

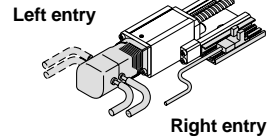
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

Motor/switch entry direction



Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

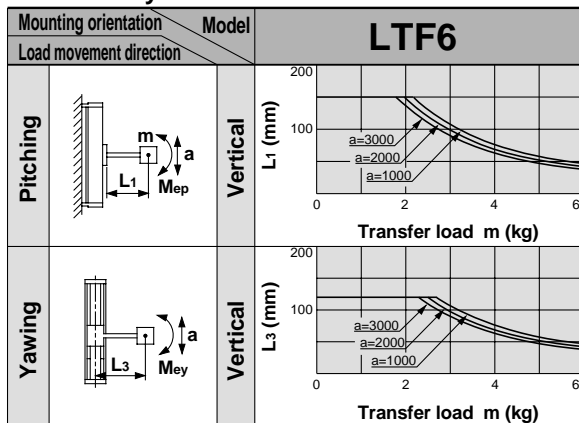
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							
Regenerative absorption unit		Refer to the selection guide below.							

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

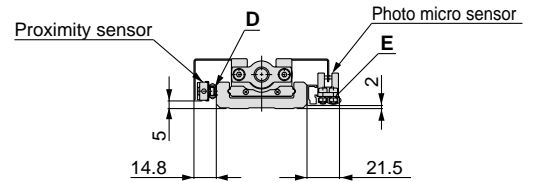
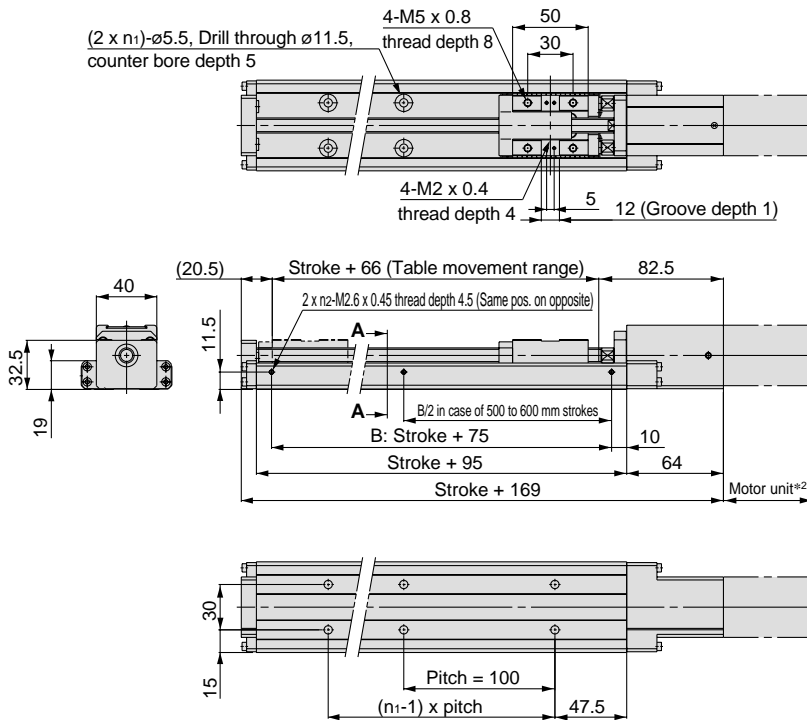
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

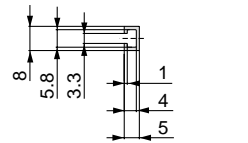
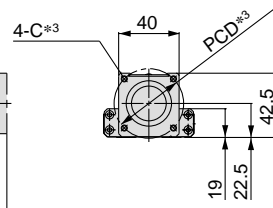
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF6□E□PF(X10)

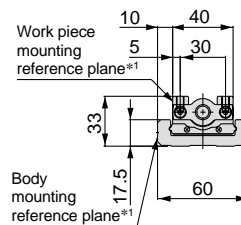
Scale: 20%



Section AA (Sensor mounting dimensions)



D section detail (Sensor rail dimensions)



E section detail (Switch rail T-slot dimensions)

Section AA

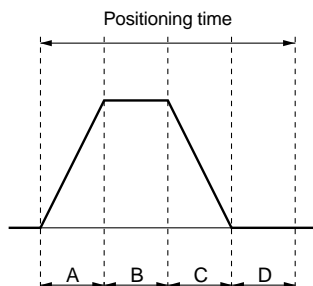
Model	Stroke	n1	n2
LTF6□E□PF-100K-□□-X10	100	2	1
LTF6□E□PF-200K-□□-X10	200	3	1
LTF6□E□PF-300K-□□-X10	300	4	1
LTF6□E□PF-400K-□□-X10	400	5	1
LTF6□E□PF-500K-□□-X10	500	6	2
LTF6□E□PF-600K-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1B	MSD011P1E	135
		200/230	MSM012P1B	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13B	MR-C10A1	114.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12B	SGDE-01BP	135
		200/230	SGME-01AF12B	SGDE-01AP	

- * Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **PH** — Stroke **K** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

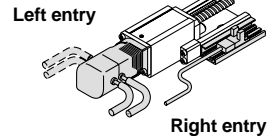
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction



Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

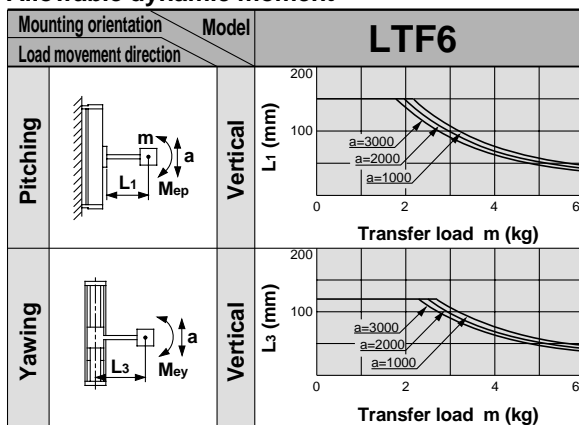
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	3						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							
Regenerative absorption unit		Refer to the selection guide below.							

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

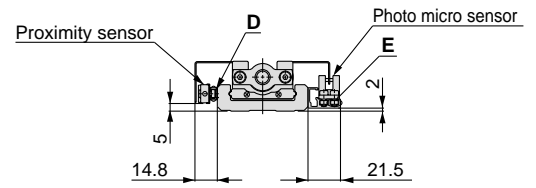
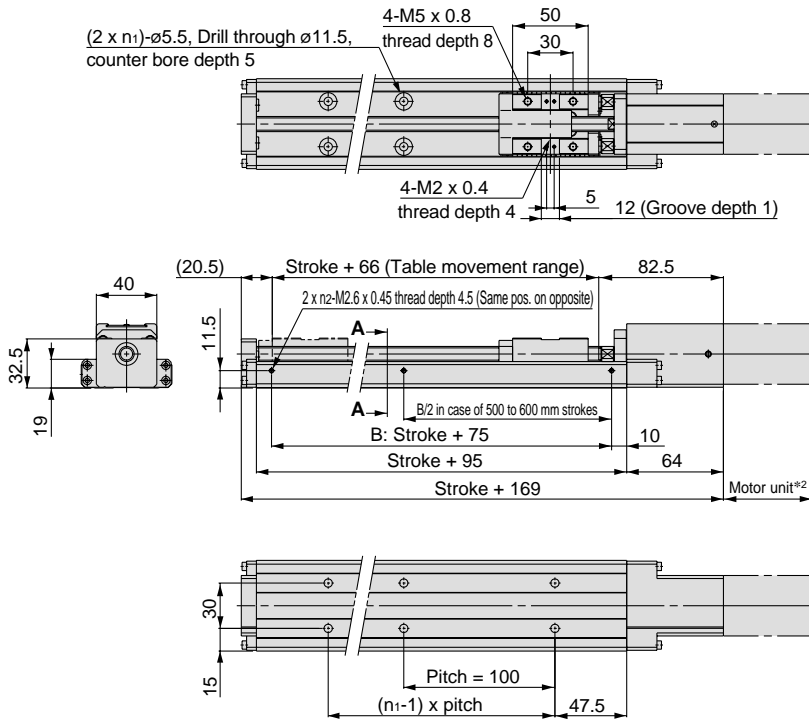
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

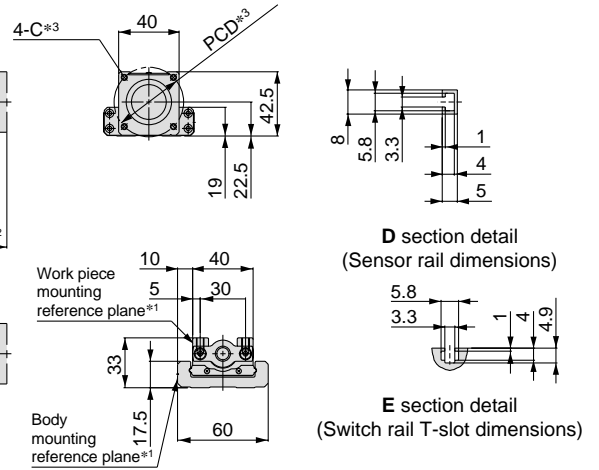
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF6□E□PH(X10)

Scale: 20%



Section AA (Sensor mounting dimensions)



Section AA

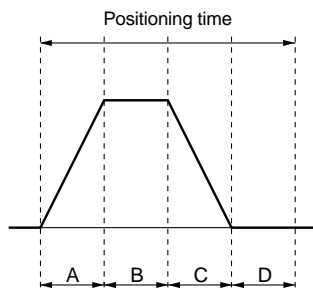
Model	Stroke	n1	n2
LTF6□E□PH-100K-□□-X10	100	2	1
LTF6□E□PH-200K-□□-X10	200	3	1
LTF6□E□PH-300K-□□-X10	300	4	1
LTF6□E□PH-400K-□□-X10	400	5	1
LTF6□E□PH-500K-□□-X10	500	6	2
LTF6□E□PH-600K-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1B	MSD011P1E	135
		200/230	MSM012P1B	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13B	MR-C10A1	114.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12B	SGDE-01BP	135
		200/230	SGME-01AF12B	SGDE-01AP	

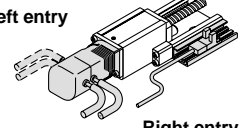
- * Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G** **E** **1** **NF** — Stroke **K** — **X10**

Motor/switch entry direction

Left entry



Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

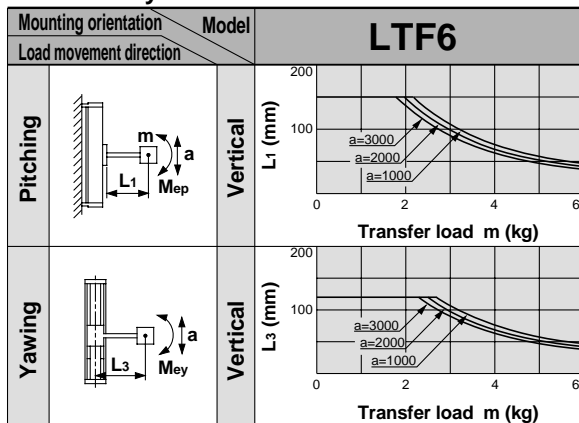
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	6						
	Rated thrust	N	300						
	Maximum speed	mm/s	300						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 6mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							
Regenerative absorption unit		Refer to the selection guide below.							

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) M_e : Allowable dynamic moment
 a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

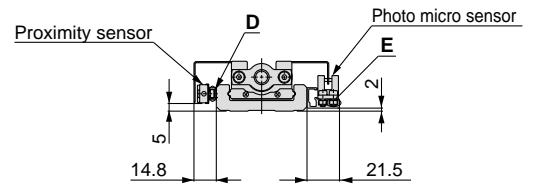
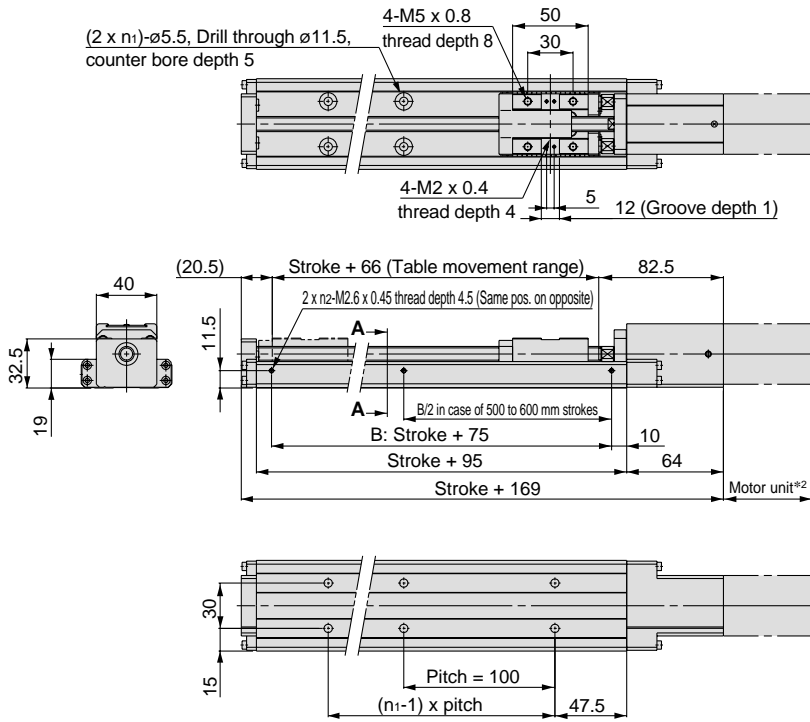
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

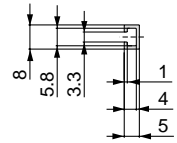
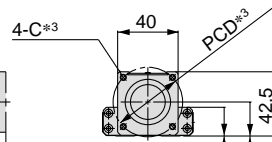
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF6□E□NF(X10)

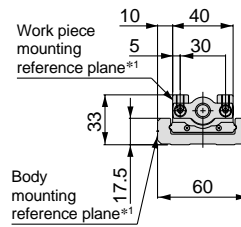
Scale: 20%



Section AA (Sensor mounting dimensions)



D section detail (Sensor rail dimensions)



E section detail (Switch rail T-slot dimensions)

Section AA

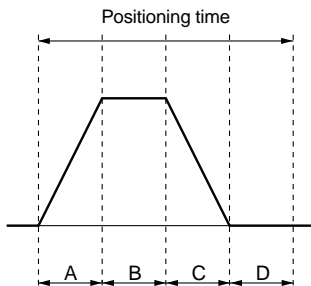
Model	Stroke	n1	n2
LTF6□E□NF- 100K-□□-X10	100	2	1
LTF6□E□NF- 200K-□□-X10	200	3	1
LTF6□E□NF- 300K-□□-X10	300	4	1
LTF6□E□NF- 400K-□□-X10	400	5	1
LTF6□E□NF- 500K-□□-X10	500	6	2
LTF6□E□NF- 600K-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	150	0.5	0.6	1.2	2.5	4.5
	300	0.5	0.6	0.9	1.6	2.6

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1B	MSD011P1E	135
		200/230	MSM012P1B	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13B	MR-C10A1	114.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12B	SGDE-01BP	135
		200/230	SGME-01AF12B	SGDE-01AP	

- * Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF6 **G E 1 NH** — Stroke **K** — **X10**

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

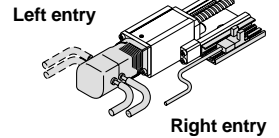
Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction



Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

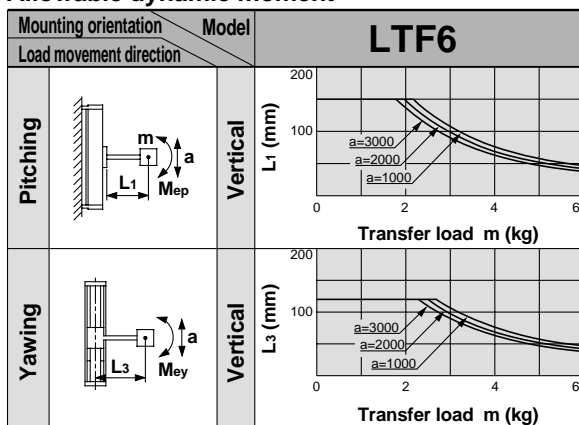
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600
Performance	Body weight (without motor)	kg		1.7	2.1	2.6	3.1	3.6	4.1
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	3						
	Rated thrust	N	180						
	Maximum speed	mm/s	500						
	Positioning repeatability	mm	±0.05						
Main parts	Motor	AC servomotor (100W) with brake							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ∅10mm, 10mm lead							
	Guide	Frame-type linear guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)							
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)							
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)							
Regenerative absorption unit		Refer to the selection guide below.							

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me : Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

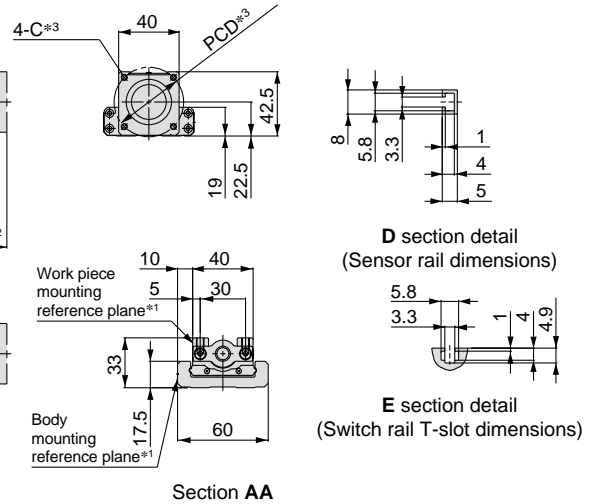
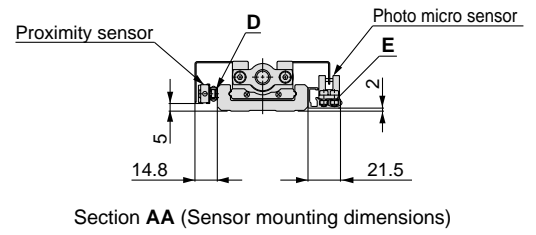
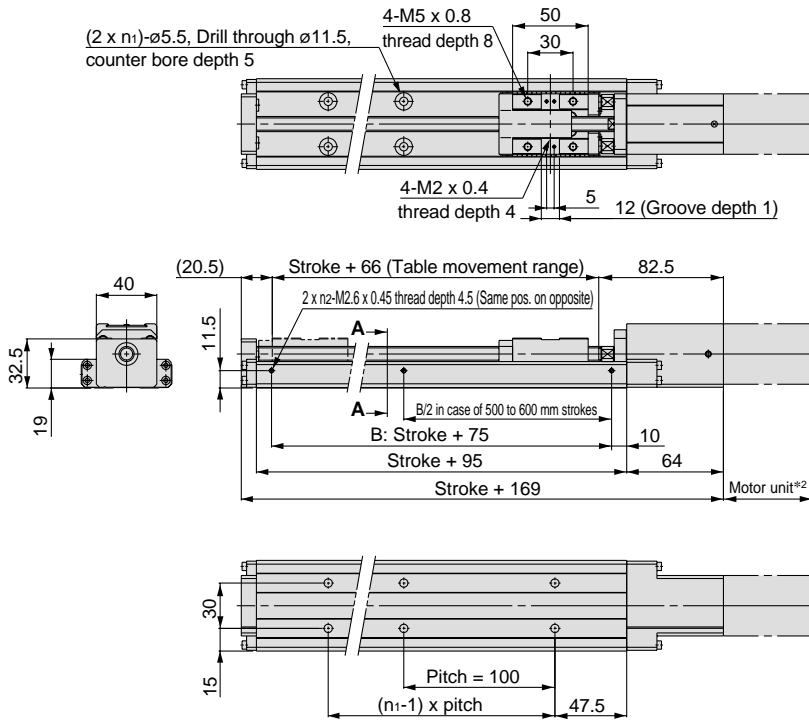
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF6□E□NH(X10)

Scale: 20%



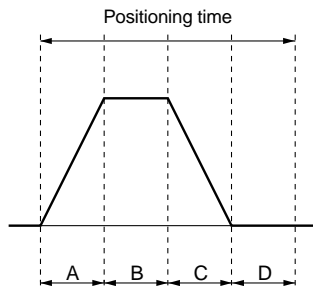
Model	Stroke	n1	n2
LTF6□E□NH- 100K-□□-X10	100	2	1
LTF6□E□NH- 200K-□□-X10	200	3	1
LTF6□E□NH- 300K-□□-X10	300	4	1
LTF6□E□NH- 400K-□□-X10	400	5	1
LTF6□E□NH- 500K-□□-X10	500	6	2
LTF6□E□NH- 600K-□□-X10	600	7	2

- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 69 for the guidelines for assembly and designing.

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	300	600
Speed (mm/s)	10	0.5	1.5	10.5	30.5	60.5
	100	0.5	0.6	1.5	3.5	6.5
	250	0.5	0.6	0.9	1.7	2.9
	500	0.5	0.6	0.8	1.2	1.8

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
- B: Constant velocity time
- C: Deceleration time
- D: Resting time (0.4 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1B	MSD011P1E	135
		200/230	MSM012P1B	MSD013P1E	
Mitsubishi Electric Corporation	100	100/115	HC-PQ13B	MR-C10A1	114.5
		200/230		MR-C10A	
Yasukawa Electric Corporation	100	100/115	SGME-01BF12B	SGDE-01BP	135
		200/230	SGME-01AF12B	SGDE-01AP	

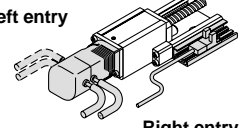
- * Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
- * For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **PH** — Stroke **K** — **X10**

Motor/switch entry direction

Left entry



Right entry

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

• **Power supply voltage**

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

• **Switch specifications**

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

• **Motor/switch entry direction**

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

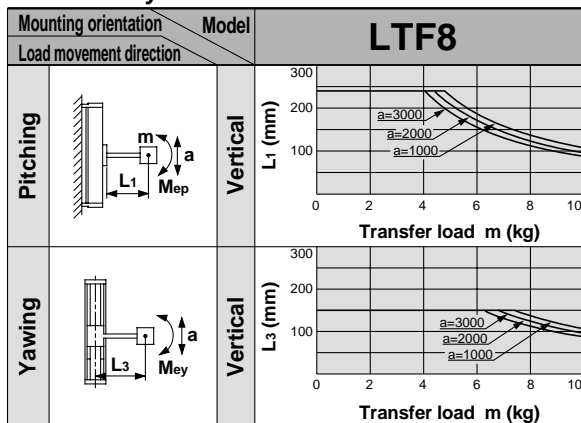
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg		3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	10										
	Rated thrust	N	360										
	Maximum speed	mm/s	500							440	350	290	240
	Positioning repeatability	mm	±0.02										
Main parts	Motor	AC servomotor (200W) with brake											
	Encoder	Incremental system											
	Lead screw	Ground ball screw ∅15mm, 10mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)											
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)											
Regenerative absorption unit		Refer to the selection guide below.											

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me : Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

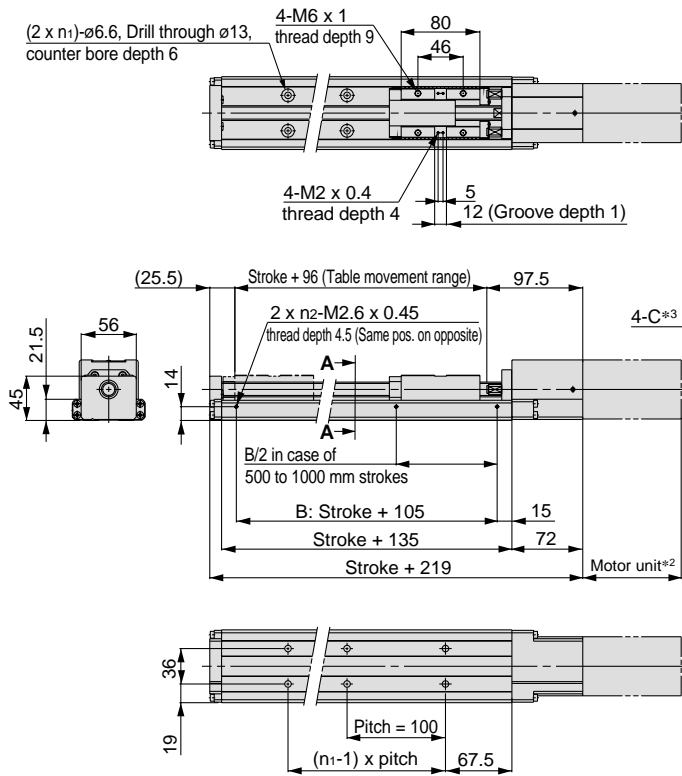
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption
+ Driver capacitor energy consumption (A)
+ Regenerative resistor energy consumption (B)

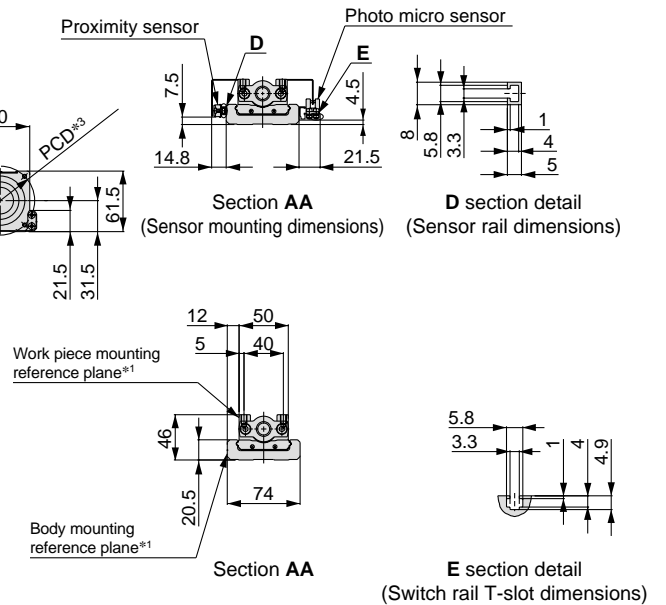
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF8□F□PH(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



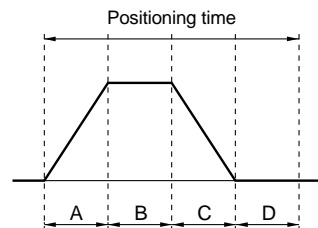
Model	Stroke	n1	n2
LTF8□F□PH- 100K-□□-X10	100	2	1
LTF8□F□PH- 200K-□□-X10	200	3	1
LTF8□F□PH- 300K-□□-X10	300	4	1
LTF8□F□PH- 400K-□□-X10	400	5	1
LTF8□F□PH- 500K-□□-X10	500	6	2

Model	Stroke	n1	n2
LTF8□F□PH- 600K-□□-X10	600	7	2
LTF8□F□PH- 700K-□□-X10	700	8	2
LTF8□F□PH- 800K-□□-X10	800	9	2
LTF8□F□PH- 900K-□□-X10	900	10	2
LTF8□F□PH-1000K-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1B	MSD021P1E	128
		200/230	MSM022P1B	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23B	MR-C20A1	121
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12B	SGDE-02BP	136
		200/230	SGME-02AF12B	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

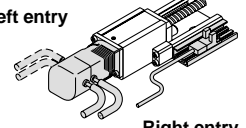
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **PL** — Stroke **K** — **X10**

Motor/switch entry direction

Left entry



Right entry

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

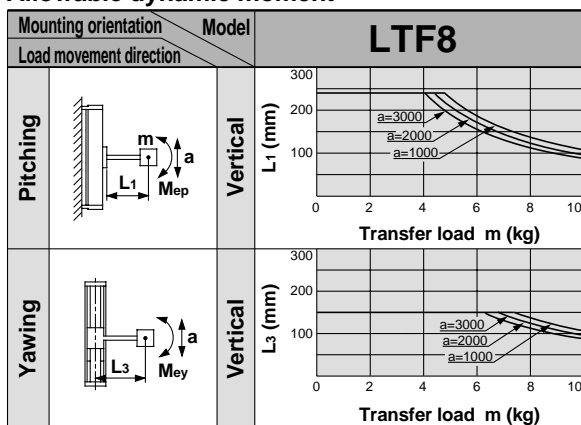
Dog fittings for switch are attached to all types except type "Nil".

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg		3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	5										
	Rated thrust	N	180										
	Maximum speed	mm/s	1000							890	710	580	480
	Positioning repeatability	mm	±0.02										
Main parts	Motor	AC servomotor (200W) with brake											
	Encoder	Incremental system											
	Lead screw	Ground ball screw ∅15mm, 20mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)											
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)											
Regenerative absorption unit		Refer to the selection guide below.											

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

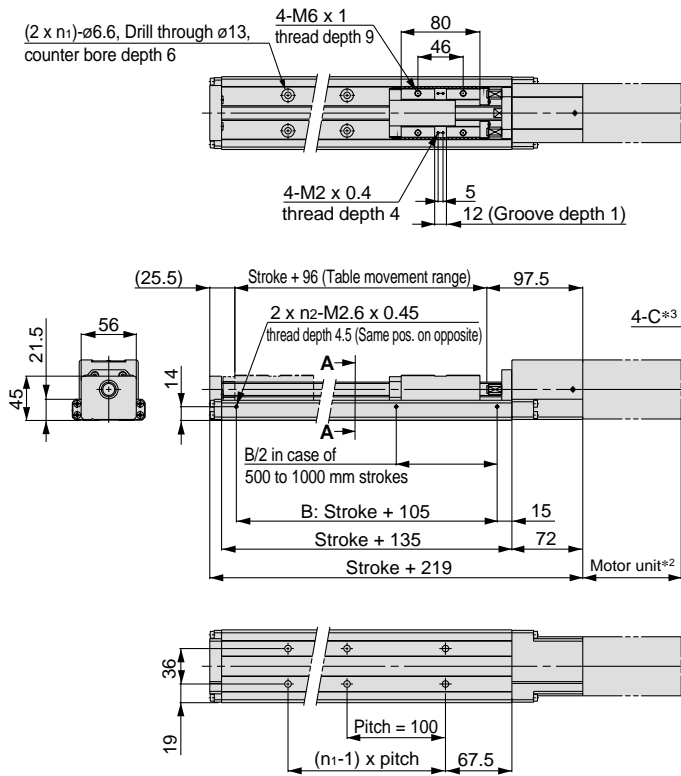
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

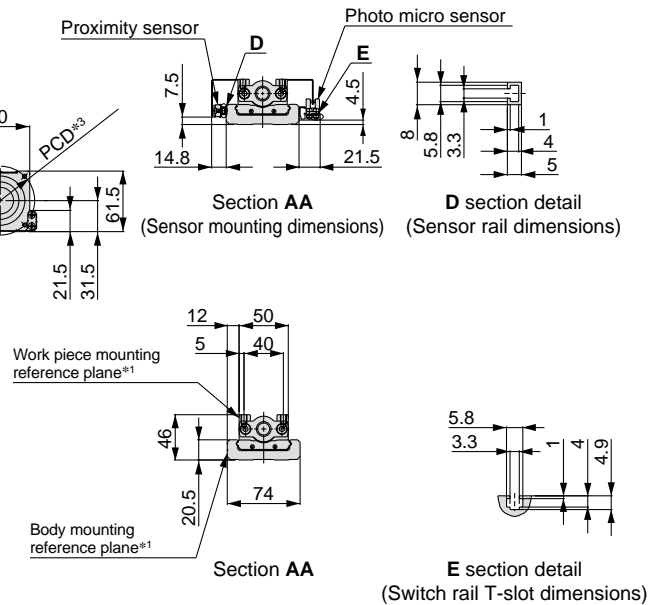
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF8□F□PL(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



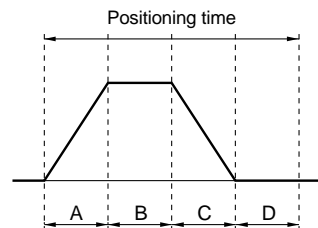
Model	Stroke	n ₁	n ₂
LTF8□F□PL- 100K-□□-X10	100	2	1
LTF8□F□PL- 200K-□□-X10	200	3	1
LTF8□F□PL- 300K-□□-X10	300	4	1
LTF8□F□PL- 400K-□□-X10	400	5	1
LTF8□F□PL- 500K-□□-X10	500	6	2

Model	Stroke	n ₁	n ₂
LTF8□F□PL- 600K-□□-X10	600	7	2
LTF8□F□PL- 700K-□□-X10	700	8	2
LTF8□F□PL- 800K-□□-X10	800	9	2
LTF8□F□PL- 900K-□□-X10	900	10	2
LTF8□F□PL-1000K-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²
- * The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1B	MSD021P1E	128
		200/230	MSM022P1B	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23B	MR-C20A1	121
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12B	SGDE-02BP	136
		200/230	SGME-02AF12B	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

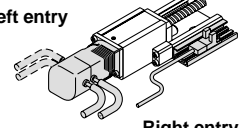
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **NH** — Stroke **K** — **X10**

Motor/switch entry direction

Left entry



Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

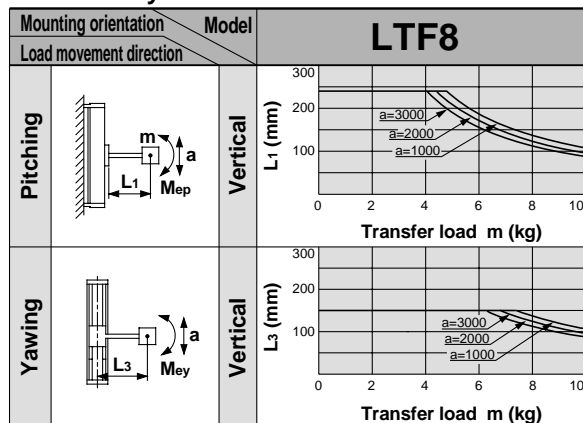
Dog fittings for switch are attached to all types except type "Nil".

Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000	
Performance	Body weight (without motor)	kg	3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1	
	Operating temperature range	°C	5 to 40 (with no condensation)										
	Work load	kg	10										
	Rated thrust	N	360										
	Maximum speed	mm/s	500					440	350	290	240		
	Positioning repeatability	mm	±0.05										
Main parts	Motor	AC servomotor (200W) with brake											
	Encoder	Incremental system											
	Lead screw	Rolled ball screw ∅15mm, 10mm lead											
	Guide	Frame-type linear guide											
	Motor/Screw connection	With coupling											
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)											
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)											
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)											
Regenerative absorption unit		Refer to the selection guide below.											

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption

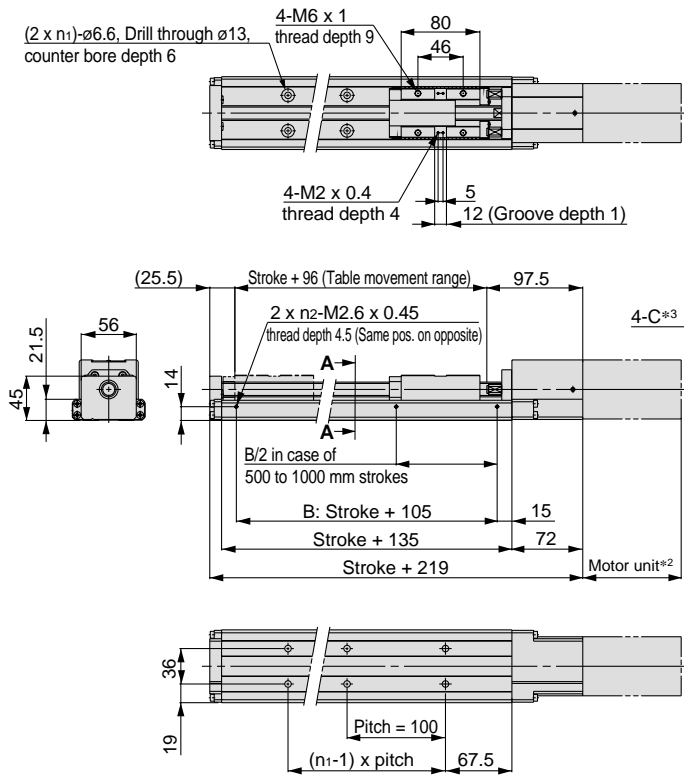
+ Driver capacitor energy consumption (A)

+ Regenerative resistor energy consumption (B)

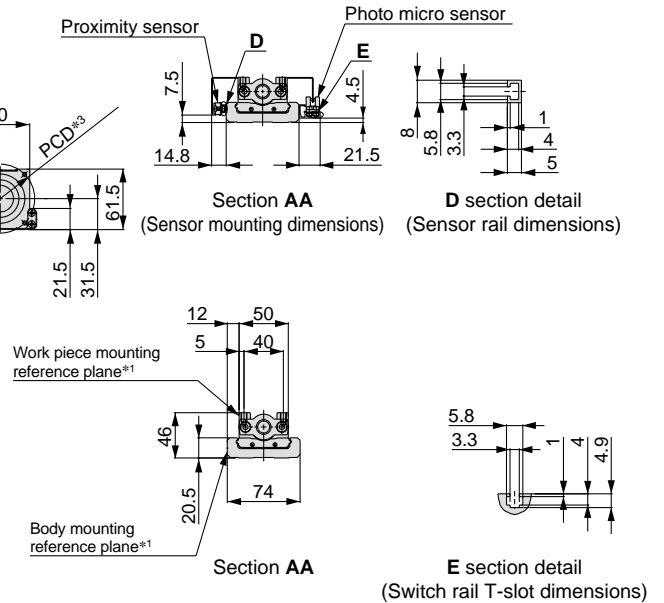
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF8□F□NH(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



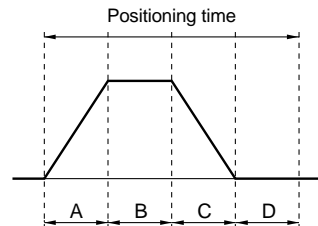
Model	Stroke	n ₁	n ₂
LTF8□F□NH- 100K-□□-X10	100	2	1
LTF8□F□NH- 200K-□□-X10	200	3	1
LTF8□F□NH- 300K-□□-X10	300	4	1
LTF8□F□NH- 400K-□□-X10	400	5	1
LTF8□F□NH- 500K-□□-X10	500	6	2

Model	Stroke	n ₁	n ₂
LTF8□F□NH- 600K-□□-X10	600	7	2
LTF8□F□NH- 700K-□□-X10	700	8	2
LTF8□F□NH- 800K-□□-X10	800	9	2
LTF8□F□NH- 900K-□□-X10	900	10	2
LTF8□F□NH-1000K-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	250	0.6	0.7	1.0	2.6	4.6
	500	0.6	0.7	0.9	1.7	2.7

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1B	MSD021P1E	128
		200/230	MSM022P1B	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23B	MR-C20A1	121
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12B	SGDE-02BP	136
		200/230	SGME-02AF12B	SGDE-02AP	

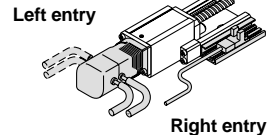
* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

How to Order

LTF8 **G** **F** **1** **NL** — Stroke **K** — **X10**

Motor/switch entry direction



Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Power supply voltage

1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

Switch specifications

Nil	Without switch and switch rail
1	Photo micro sensor 1 pc., Photo micro sensor rail 1 pc.
2	Photo micro sensor 2 pcs., Photo micro sensor rail 1 pc.
3	Photo micro sensor 3 pcs., Photo micro sensor rail 1 pc.
4	Proximity switch (A contact) 1 pc., Proximity switch rail 1 pc.
5	Proximity switch (A contact) 2 pcs., Proximity switch rail 1 pc.
6	Proximity switch (B contact) 2 pcs., Proximity switch rail 1 pc.
7	Proximity switch (A contact) 1 pc., (B contact) 2 pcs., Proximity switch rail 1 pc.
A	Photo micro sensor rail 1 pc.
B	Proximity switch rail 1 pc.

Motor/switch entry direction

Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

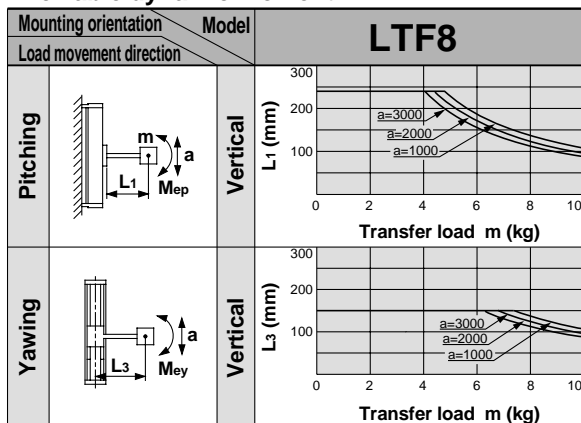
Dog fittings for switch are attached to all types except type "Nil".

Specifications

Standard stroke		mm	100	200	300	400	500	600	700	800	900	1000
Performance	Body weight (without motor)	kg	3.4	4.3	5.1	6.0	6.8	7.7	8.5	9.4	10.2	11.1
	Operating temperature range	°C	5 to 40 (with no condensation)									
	Work load	kg	5									
	Rated thrust	N	180									
	Maximum speed	mm/s	1000						890	710	580	480
	Positioning repeatability	mm	±0.05									
Main parts	Motor	AC servomotor (200W) with brake										
	Encoder	Incremental system										
	Lead screw	Rolled ball screw ∅15mm, 20mm lead										
	Guide	Frame-type linear guide										
	Motor/Screw connection	With coupling										
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 93 for details.)										
		Proximity switch GXL-N12FT (A contact) (Refer to page 92 for details.)										
		Proximity switch GXL-N12FTB (B contact) (Refer to page 92 for details.)										
Regenerative absorption unit		Refer to the selection guide below.										

Allowable Moment (N·m)

Allowable dynamic moment



m : Transfer load (kg) Me: Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

Regenerative Absorption Unit Selection Guide

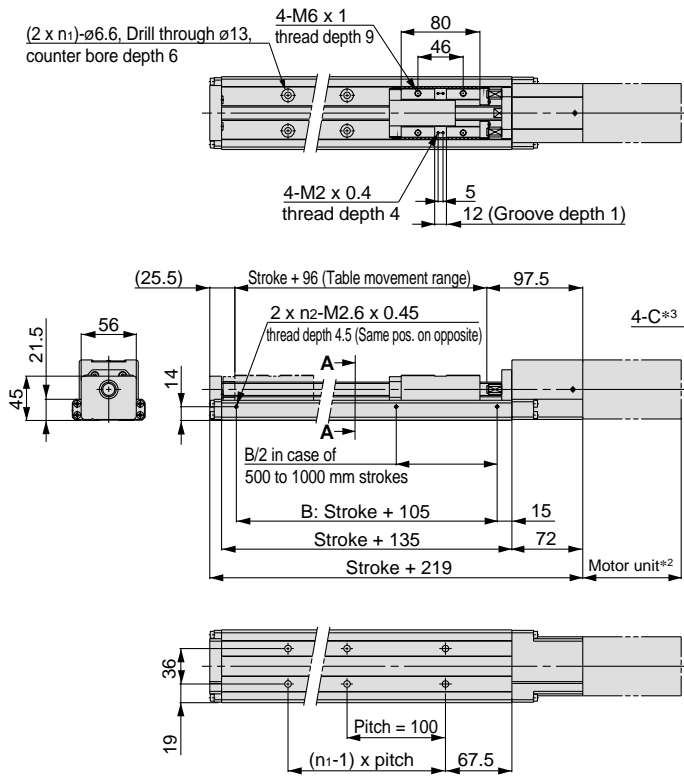
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

Regenerative energy = Motor coil energy consumption
+ Driver capacitor energy consumption (A)
+ Regenerative resistor energy consumption (B)

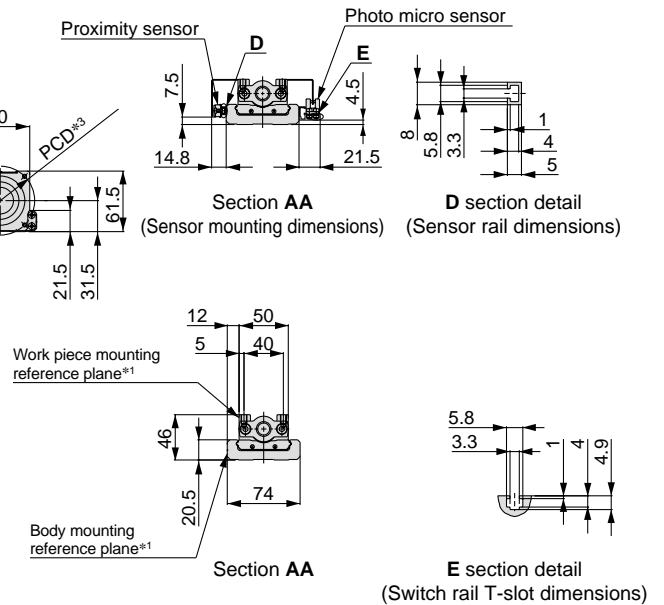
(A) and (B) vary depending on each motor and driver. Use of a regenerative absorption unit or regenerative resistor is recommended under any conditions when a vertical specification is used. Contact SMC for questions regarding selections.

Dimensions/LTF8□F□NL(X10)

Scale: 13%



- *1. The body and work piece mounting reference planes are to be used as guidelines for equipment mounting. Refer to page 68 for the mounting procedure.
- *2. For the motor dimensions, refer to "Non-standard Motor."
- *3. For the dimensions of the motor mounting position, refer to the dimensions on page 70 for the guidelines for assembly and designing.



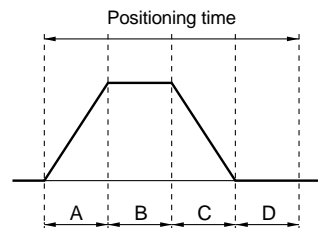
Model	Stroke	n1	n2
LTF8□F□NL- 100K-□□-X10	100	2	1
LTF8□F□NL- 200K-□□-X10	200	3	1
LTF8□F□NL- 300K-□□-X10	300	4	1
LTF8□F□NL- 400K-□□-X10	400	5	1
LTF8□F□NL- 500K-□□-X10	500	6	2

Model	Stroke	n1	n2
LTF8□F□NL- 600K-□□-X10	600	7	2
LTF8□F□NL- 700K-□□-X10	700	8	2
LTF8□F□NL- 800K-□□-X10	800	9	2
LTF8□F□NL- 900K-□□-X10	900	10	2
LTF8□F□NL-1000K-□□-X10	1000	11	2

Positioning Time Guide

		Positioning time (sec.)				
Positioning distance (mm)		1	10	100	500	1000
Speed (mm/s)	10	0.6	1.6	10.6	50.6	100.6
	100	0.6	0.7	1.6	5.6	10.6
	500	0.6	0.7	0.9	1.7	2.7
	1000	0.6	0.7	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.5 sec.)*
- Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1B	MSD021P1E	128
		200/230	MSM022P1B	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23B	MR-C20A1	121
		200/230		MR-C20A	
Yasukawa Electric Corporation	200	100/115	SGME-02BF12B	SGDE-02BP	136
		200/230	SGME-02AF12B	SGDE-02AP	

* Refer to pages starting with 89 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

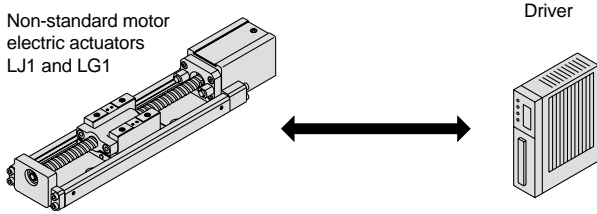
* For a non-standard motor specification when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 66 for part numbers.

Series LTF Options

Non-standard Motor Cables

These are cables for connecting non-standard motors and drivers. Cable lengths other than those shown below should be arranged by the customer.

Non-standard motor electric actuators LJ1 and LG1



How to order

LJ1 - 1 - G 05 B

Compatible model

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Brake

Nil	Without brake
B	With brake

Cable length

05	5m
----	----

Applicable cables

LTF (non-standard motor)

Model	Manufacturer part no.
LJ1-1-G05*1	MFMCA0050AEB (for motor) MFECA0050EAB (for encoder)
LJ1-1-G05B	MFMCA0050AEB (for motor) MFECA0050EAB (for encoder) MFMCB0050CET (for brake)
LJ1-1-R05	(for motor)*2 MR-JCCBL5M-L (for encoder)
LJ1-1-Y05*3	DP9320081-2 (for motor) DP9320089-2 (for encoder)
LJ1-1-Y05B	DP9320083-2 (for motor/brake) DP9320089-2 (for encoder)

*1 When the Matsushita Electric Industrial Co., Ltd. motor driver is selected, in addition to the cable, a power connector (MOLEX 5569 - 10R) and an interface connector (Sumitomo/3-M Limited 10126-3000VE) are also required.

*2 No cable is provided for the Mitsubishi Electric Corporation motor and brake. An electric cable with a sectional area of 0.75 mm² (600 V vinyl cable) must be procured by the customer.

*3 When the Yasukawa Electric Corporation motor driver is selected, a digital operator and PC are required for selecting the various parameters.

Please refer to the technical literature of each manufacturer for further details.

Non-standard Motor Driver Regenerative Absorption Unit/Regenerative Resistor

This is a regenerative absorption unit and regenerative resistor for a non-standard motor. Make a selection providing an allowance beyond the calculated capacity.

How to order

LJ1 - 7 - G

Compatible model

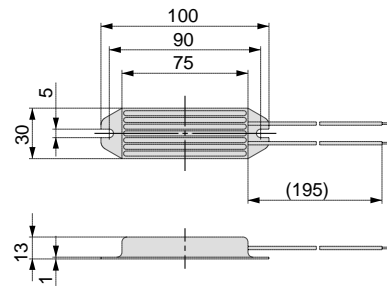
G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Applicable types

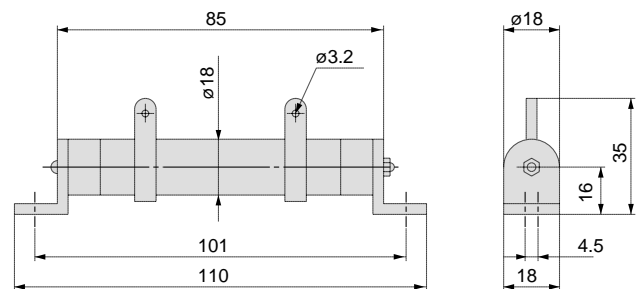
LTF (non-standard motor)

Model	Manufacturer part no.
LJ1-7-G	DVO P0820
LJ1-7-R	MR-RB013
LJ1-7-Y	JUSP-RG08

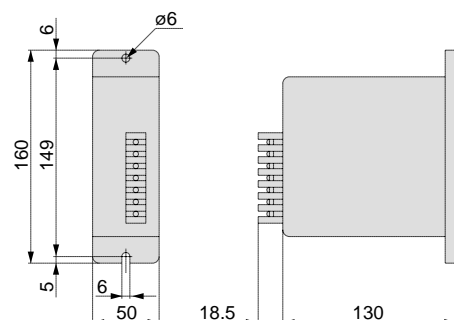
LJ1-7-G/Matsushita Electric Industrial Co., Ltd.



LJ1-7-R/Mitsubishi Electric Corporation



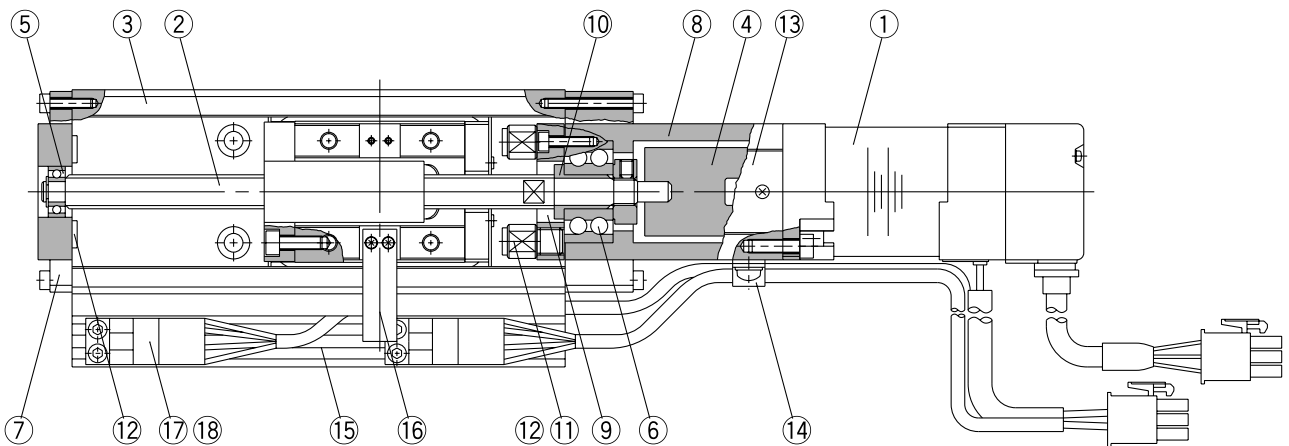
LJ1-7-Y/Yasukawa Electric Corporation



Series LTF Construction

Construction

LTF6/LTF8



Parts list

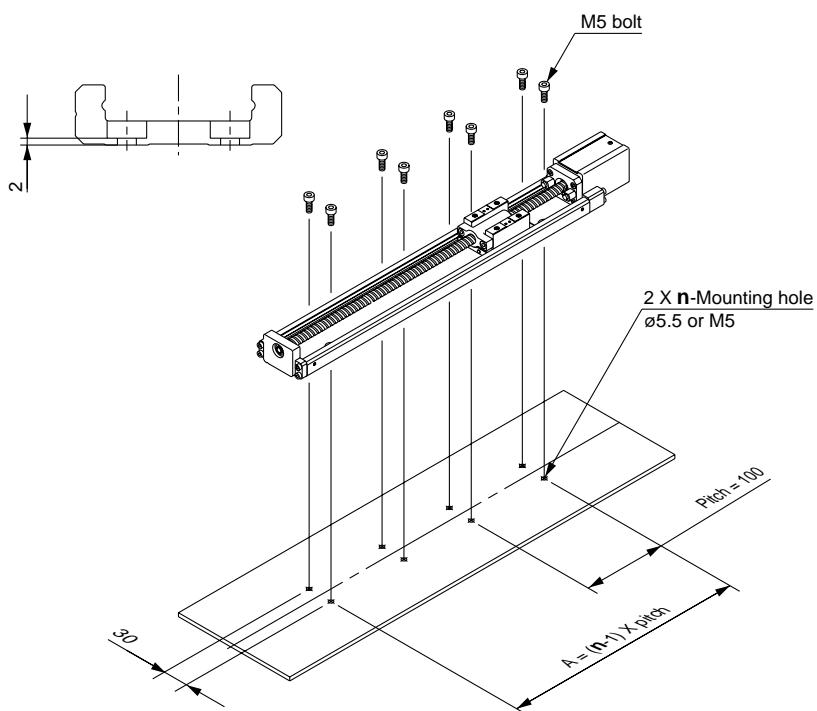
No.	Description	Material	Note
1	AC servomotor	—	100W/200W
2	Lead screw	—	Ball screw
3	Frame-type linear guide	—	
4	Coupling	—	
5	Bearing R	—	
6	Bearing F	—	
7	Housing A	Aluminum alloy	
8	Housing B	Aluminum alloy	
9	Bearing retainer	Carbon steel	

No.	Description	Material	Note
10	Spacer	Stainless steel	
11	Bumper bolt	Alloy steel	
12	Bumper	Resin	
13	Housing plate	Mild steel	
14	Cable clip	Resin	
15	Photo micro sensor rail	Aluminum alloy	
16	Dog fitting for switch	Mild steel	Chromate
17	Photo micro sensor		
18	Connector cable for sensor		

Series LTF Mounting

Top Mount

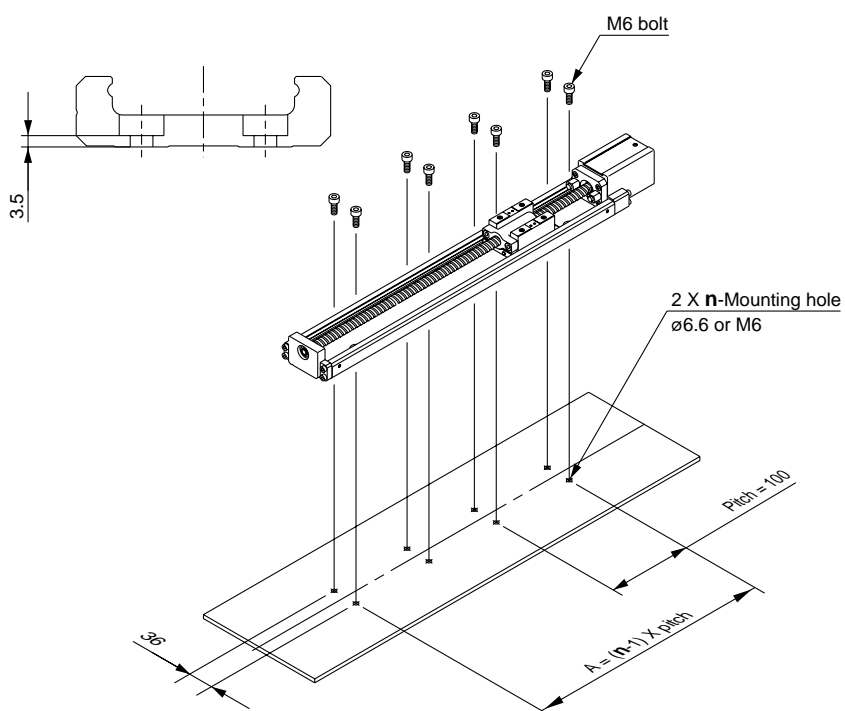
LTF6



Mounting hole quantity

Stroke	n	Quantity
100	2	4
200	3	6
300	4	8
400	5	10
500	6	12
600	7	14

LTF8



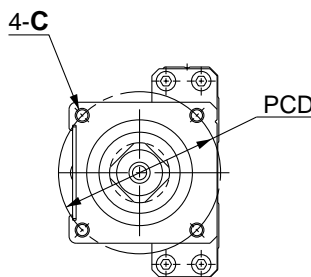
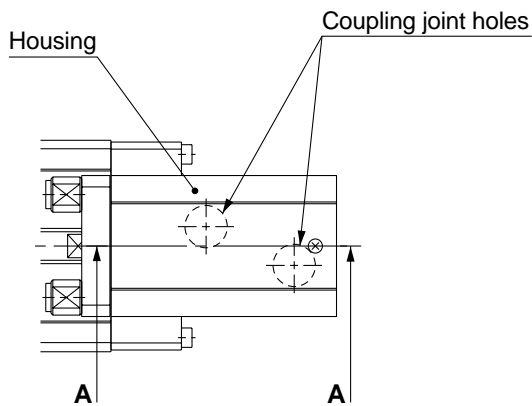
Mounting hole quantity

Stroke	n	Quantity	Stroke	n	Quantity
100	2	4	600	7	14
200	3	6	700	8	16
300	4	8	800	9	18
400	5	10	900	10	20
500	6	12	1000	11	22

Series LTF Non-standard Motor Mounting Dimensions

Non-standard Motor Mounting Dimensions

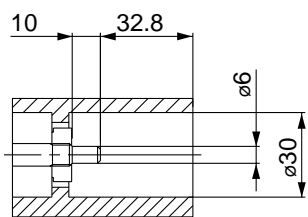
LTF6



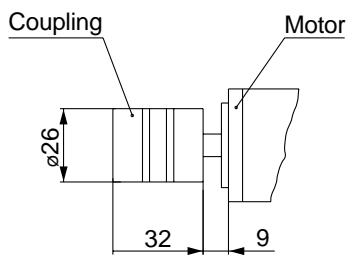
Motor mounting area dimensions

Manufacturer	Mitsubishi Electric Corporation Yasukawa Electric Corporation	Matsushita Electric Industrial Co., Ltd.
C (Thread size)	M4 x 0.7	M3 x 0.5
Effective thread length (mm)	8	6
Quantity	2	4
P.C.D.	46	45

* When mounting a coupling on the motor, mount it within the dimensional range shown on the left.



Section AA (Housing interior)

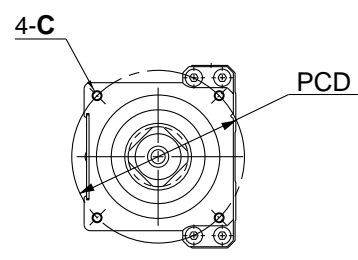
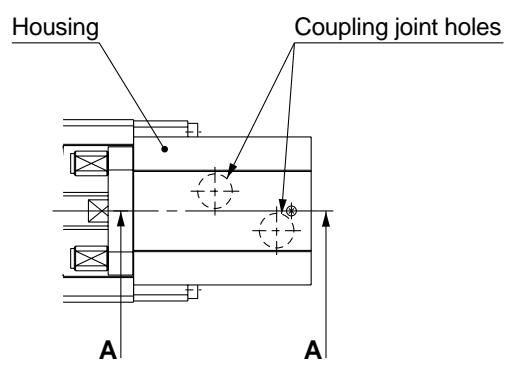


Coupling mounting dimensions*

Series LTF Non-standard Motor Mounting Dimensions

Non-standard Motor Mounting Dimensions

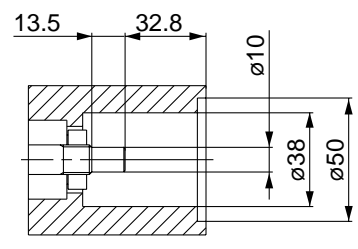
LTF8



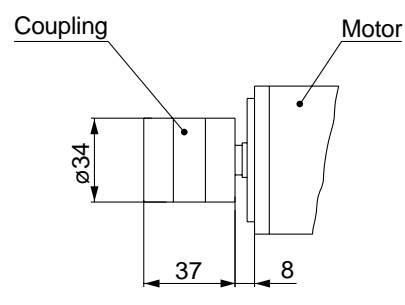
Motor mounting area dimensions

Manufacturer	Mitsubishi Electric Corporation Yasukawa Electric Corporation	Matsushita Electric Industrial Co., Ltd.
C (Thread size)	M5 x 0.8	M4 x 0.7
Effective thread length (mm)	10	8
Quantity	4	4
P.C.D.	70	75

* When mounting a coupling on the motor, mount it within the dimensional range shown on the left.



Section AA (Housing interior)



Coupling mounting dimensions*

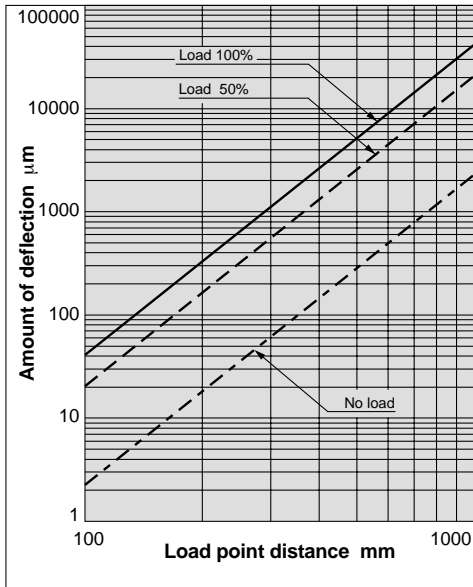
Series LTF Deflection Data

Deflection Data

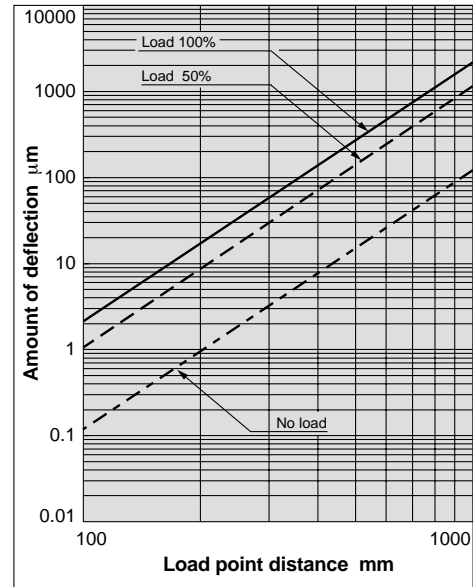
The load and the amount of deflection at load point W are shown in the graphs below for each series.

LTF6

Horizontal

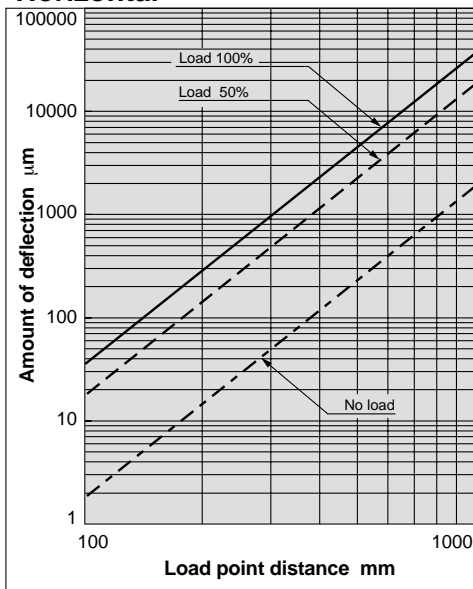


Lateral

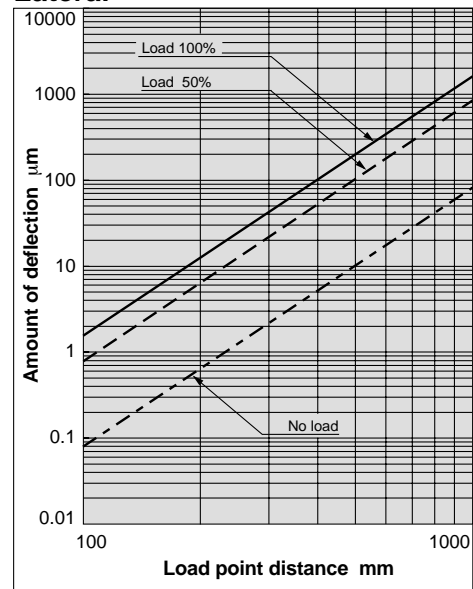


LTF8

Horizontal



Lateral



With single end support and table moved to the end of the stroke

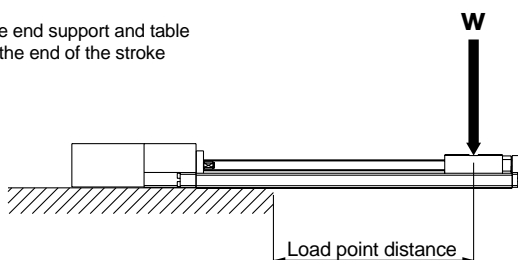


Figure 1. Horizontal

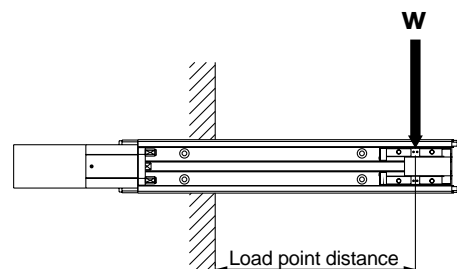
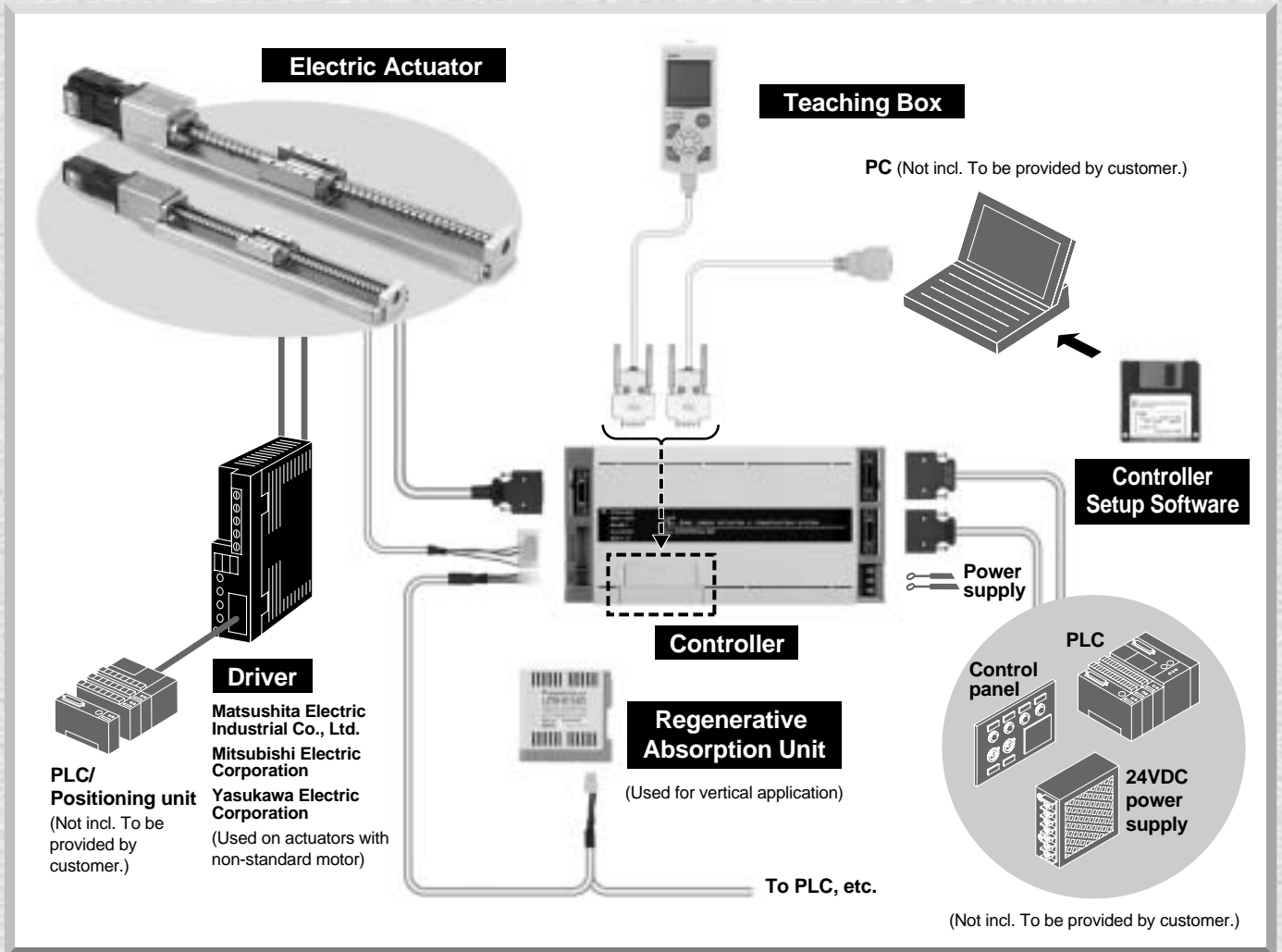


Figure 2. Lateral



Dedicated Controller Series LC1

Dedicated Controller for Standard AC Servomotor



■ Dedicated Controller/LC1	_____	P.73
• Controller setup software	_____	P.80
• Dedicated teaching box	_____	P.82
■ Options	_____	P.85
■ Dedicated Regenerative Absorption Unit/LC7R	_____	P.86
■ Non-standard Motor Compatible Drivers	_____	P.89

How to Order

LC1- 1 H 2V F 1 L 3

Number of axes

1	1 axis
---	--------

Actuator classification

H	Series LTF (Incremental encoder)
---	----------------------------------

Applicable actuators

Symbol	Motor capacity	Compatible actuator models
2H	100W	LTF6E□□□-□□□
3H	200W	LTF8F□□□-□□□
2V ^{*1)} *2)	100W	LTF6E□□□-□□□K
3V ^{*1)} *2)	200W	LTF8F□□□-□□□K

Note 2) Be sure to use a regenerative absorption unit (LC7R-K1□□□) with this controller (with brake).

Screw lead

F	6mm
H	10mm
L	20mm

Power supply

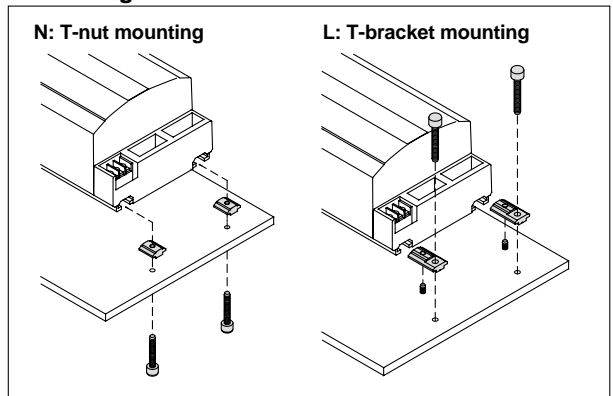
1 ^{*1)}	100/110V AC (50/60Hz)
2 ^{*1)}	200/220V AC (50/60Hz)

*1) Consult SMC if the supply voltage for LC1-1H□V□1 will be 110V AC or more, or the supply voltage for LC1-1H□V□2 will be 220V AC or more.

Mounting bracket

3	M3
5	M5

Mounting*



* This controller includes the accessories listed below.

LC1-1-□□ (Either T-nuts or T-brackets for mounting)
 LC1-1-1000 (Controller connector)
 LC1-1-2000 (Controller connector)
 (Refer to page 85.)

Note) The following options are necessary for operating and setting the controller.

[LC1-1-S1 PC-98 (MS-DOS)
 LC1-1-W1 (Windows 95 Japanese)
 LC1-1-W2 (Windows 95 English)
 and
 LC1-1-R□□ (dedicated communication cable)]
 (Refer to pages 80, 81, and 85.)

or

LC1-1-T1-□□ (Teaching box) are required.
 For ordering information, refer to the option part numbers on page 82.

Performance/Specifications

General specifications

Item	Model	LC1-1H□□□1	LC1-1H□□□2
Power supply		100/110V AC ±10%, 50/60Hz (100V AC, 50/60Hz for LC1-1H□V□1)	200/220V AC ±10%, 50/60Hz (200V AC ±10% for LC1-1H3□2) (200V AC, 50/60Hz for LC1-1H□V□2)
Leakage current		5mA or less	
Dimensions		80 x 120 x 244mm	
Weight		2.2kg	

Actuator control

Item	Model	LC1-1H2H□□	LC1-1H3H□□	LC1-1H2V□□	LC1-1H3V□□
Compatible actuator model		LTF6E□□□□-□□□□	LTF8F□□□□-□□□□	LTF6E□□□□-□□□□K	LTF6E□□□□-□□□□K
Motor capacity		100W	200W	100W	200W
Operating temperature range		5 to 50°C	5 to 40°C	5 to 50°C	5 to 40°C
Electric power		300VA	640VA	300VA	640VA
Control system		AC software servo/PTP control			
Position detection system		Incremental encoder			
Home position return direction		Can be selected between the motor side and the side opposite the motor.			
Maximum positioning point setting		1008 points (when step designation is actuated)			
Movement command		Absolute and incremental used in combination			
Position designation range		0.00mm to 4000.00mm ^{Note)}			
Speed designation range		1mm/s to 2500mm/s ^{Note)}			
Acceleration/deceleration designation range		Trapezoidal acceleration/deceleration 1mm/s ² to 9800mm/s ² ^{Note)}			

Note) There are cases in which the position, speed and acceleration designations are not realized, depending on the actuator that is connected and the operating conditions.

Programming

Item	Performance/Specifications
Means of programming	Dedicated controller setup software (LC1-1-S1, LC1-1-W1, LC1-1-W2) and dedicated teaching box (LC1-1-T1-□□)
Functions	Programming (JOG teaching, direct teaching*), Operation, Monitor, Test, Alarm reset
Number of programs	8 programs
Number of steps	1016 steps (127 steps x 8 programs)

* Direct teaching is only available with LC1-1-W1 and LC1-1-W2.

Operating configuration

Item	Performance/Specifications
Operating methods	Operation by PLC, operating panel, etc., via control terminal; Operation by PC (controller setup software); Operation by teaching box
Summary of operations	Program batch execution (program designated operation), Step designated execution (position movement, point designated operation)
Test run functions	Program test, Step no. designated operation, JOG operation, Input/output operation
Monitor functions	Executed program indication, Input/output monitor

Peripheral device control

Item	Performance/Specifications
General purpose input	6 inputs, Photo-coupler insulation, 24V DC, 5mA
General purpose output	6 outputs, Open collector output, 35V DC max., 80mA/output (maximum load current)
Control commands	Output ON/OFF, Input condition wait, Condition jump, Time limit input wait

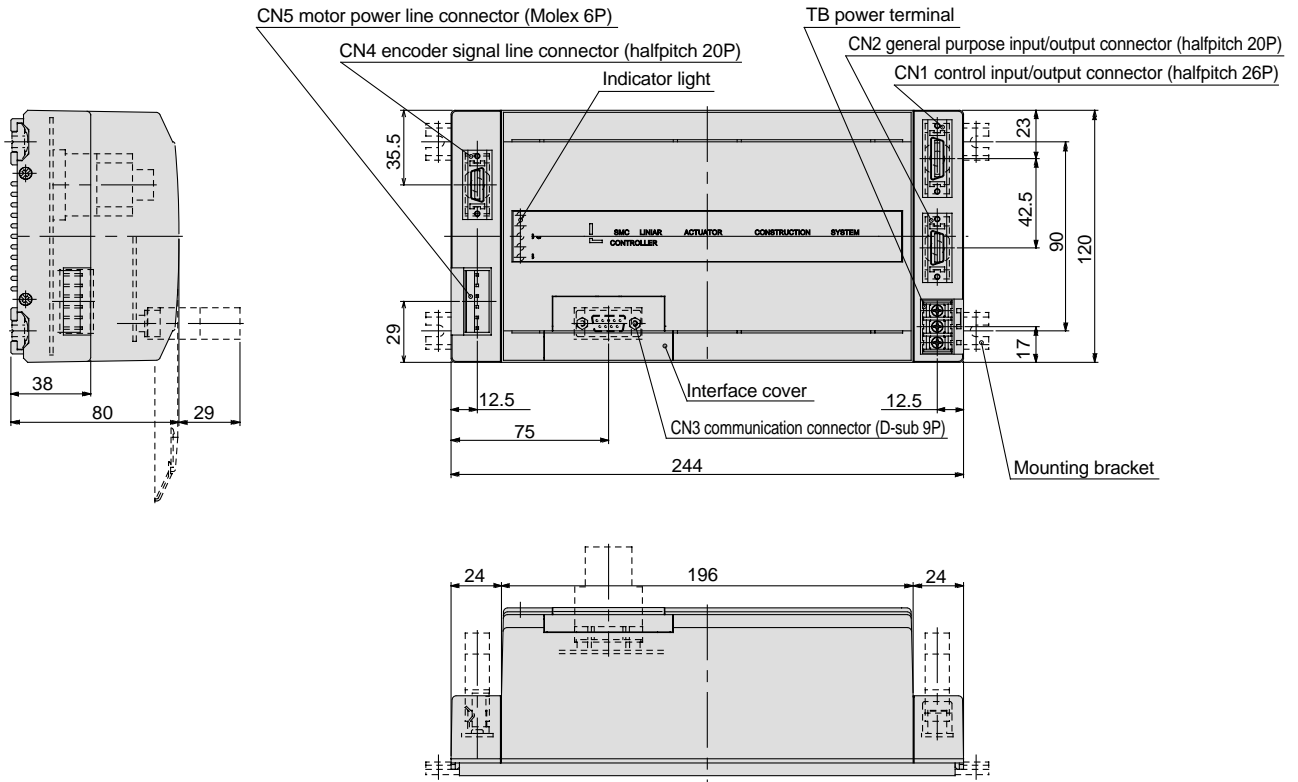
Safety items

Item	Performance/Specifications
Protection functions	Over current, Over load, Over speed, Encoder error, Abnormal driver temperature, Abnormal drive power supply, Communication error, Battery error, Abnormal parameter, Limit out

Series LC1

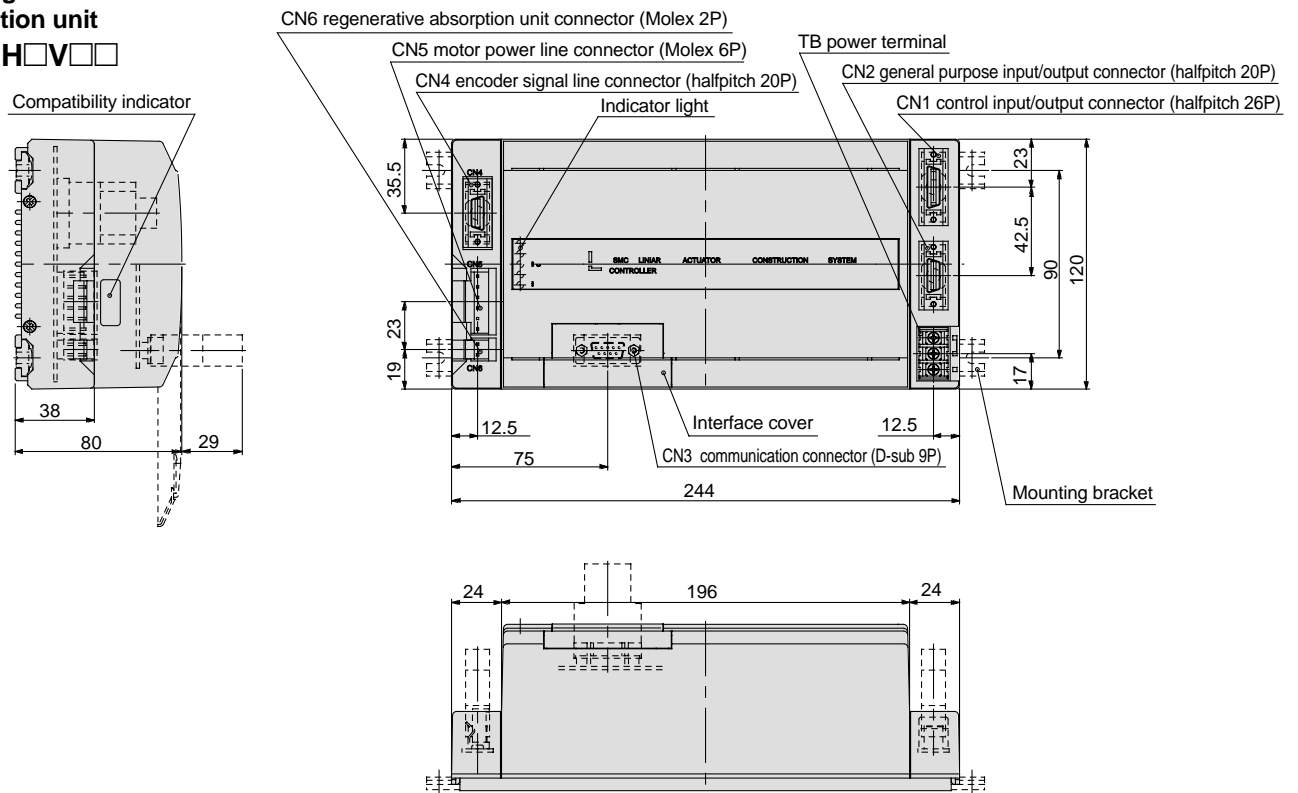
Dimensions

LC1-1H□□□□



With regenerative absorption unit

LC1-1H□V□□



Controller Mounting

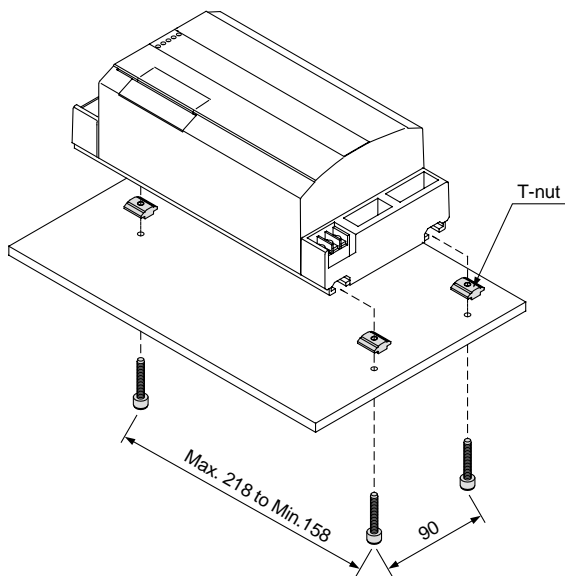
Mounting of the controller is performed by means of the two T-grooves provided on the bottom surface.

Mounting is possible from above or below using the special T-nuts or T-brackets. Refer to page 199 for further details.

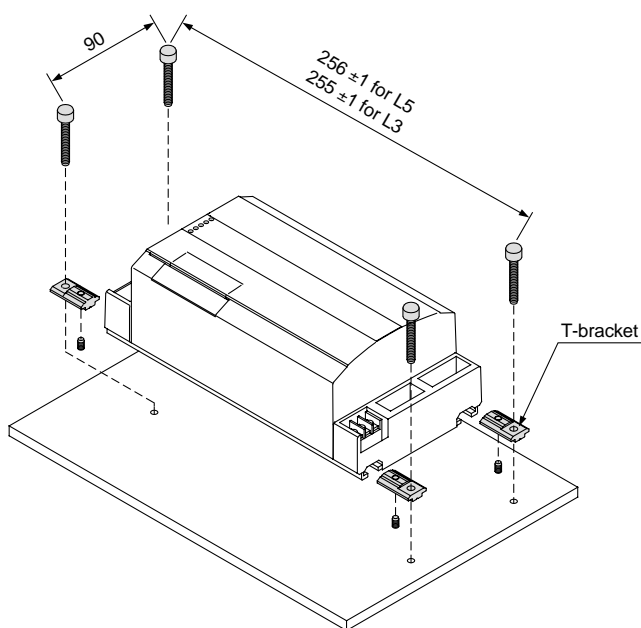
Note) This controller comes with either the T-nuts or T-brackets as accessories.

Controller model	Mounting screw	Mounting bracket assembly
LC1-1H□□□□-N3	M3 x 0.5	LC1-1-N3
LC1-1H□□□□-N5	M5 x 0.8	LC1-1-N5
LC1-1H□□□□-L3	M3	LC1-1-L3
LC1-1H□□□□-L5	M5	LC1-1-L5

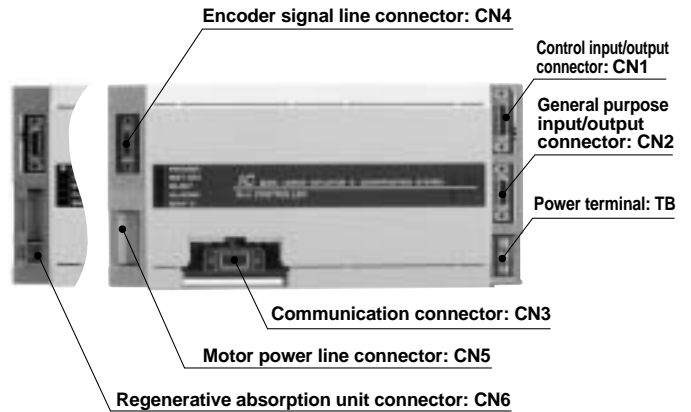
Mounting with T-nuts



Mounting with T-brackets



Part Descriptions



Controller Command Setting List

Actuator control commands

Classification	Function	Instruction	Parameter value
Movement	Absolute movement command	MOVA	Address (speed)
	Incremental movement command	MOVI	± Movement (speed)
Setting	Acceleration setting command	ASET	Acceleration

I/O control commands

Classification	Function	Instruction	Parameter value
Output control	Output ON command	O-SET	General purpose output no.
	Output OFF command	O-RES	General purpose output no.
	Output reversal command	O-NOT	General purpose output no.
Input wait	AND input wait command	I-AND	General purpose input no., State
	OR input wait command	I-OR	General purpose input no., State
Input wait with time out function	AND input time out jump command	T-AND	General purpose input no., State (P-no.) label
	OR input time out jump command	T-OR	General purpose input no., State (P-no.) label
	AND input time out subroutine call command	C-AND	General purpose input no., State (P-no.) label
	OR input time out subroutine call command	C-OR	General purpose input no., State (P-no.) label
Condition jump	AND input condition jump command	J-AND	General purpose input no., State (P-no.) label
	OR input condition jump command	J-OR	General purpose input no., State (P-no.) label

Program control commands

Classification	Function	Instruction	Parameter value
Jump	Unconditional jump command	JMP	(P-no.) label
Sub-routine	Subroutine call command	CALL	(P-no.) label
	Subroutine end declaration	RET	
Loop	Loop start command	FOR	Loop frequency
	Loop end command	NEXT	
End	Program end declaration	END	
Timer	Timer command	TIM	Timer amount

Series LC1

Connection Examples

Control Input/Output Terminal: CN1

Terminal to perform actuator operation (connects PLC and operating panel)

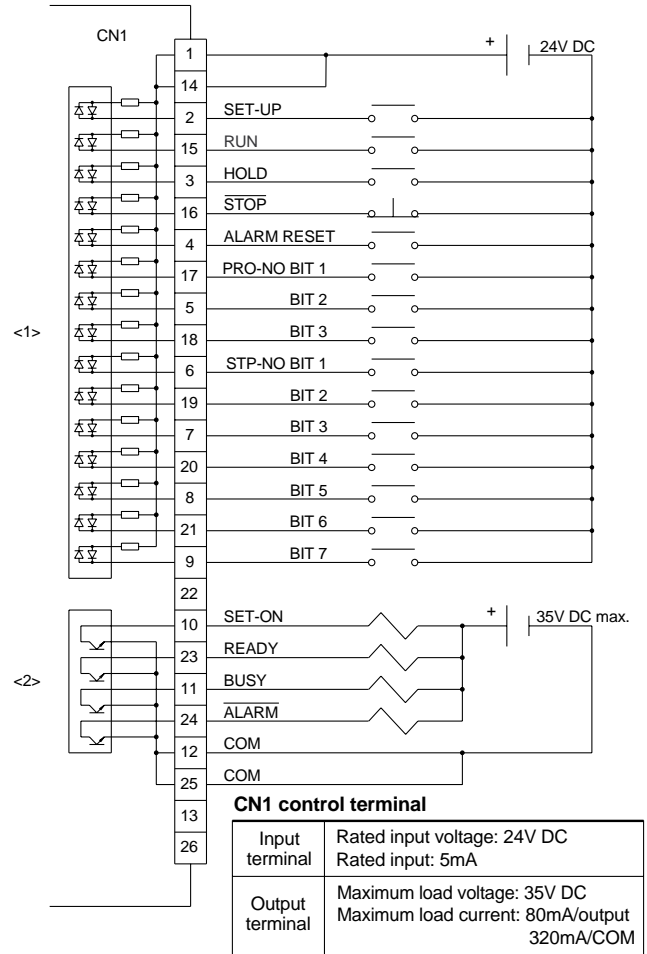
CN1. Control input terminal list

Terminal	Pin no.	Description	Function
+24V	1, 14	Common	The positive common of the input terminal.
SET-UP	2	Starting preparation	The terminal that performs setup operations (actuator starting preparation).
RUN	15	Starting	The terminal that performs program start.
Pro-no. bit1	17	Program designation	The terminal that designates the program to be executed. Can designate 8 types of programs with a total of 3 bits. (Set by the binary system.)
Pro-no. bit2	5		
Pro-no. bit3	18		
Stp-no. bit1	6	Step designation	The terminal that designates the step to be executed. Used when executing steps (position movement). (Set by the binary system.)
Stp-no. bit2	19		
Stp-no. bit3	7		
Stp-no. bit4	20		
Stp-no. bit5	8		
Stp-no. bit6	21		
Stp-no. bit7	9		
HOLD	3	Temporary stop	Temporarily stops the program run by means of the ON input.
STOP	16	Emergency stop (nonlogical input)	Performs an emergency stop when ON input stops.
ALARM RESET	4	Alarm release	Releases the alarm being generated by means of the ON input.

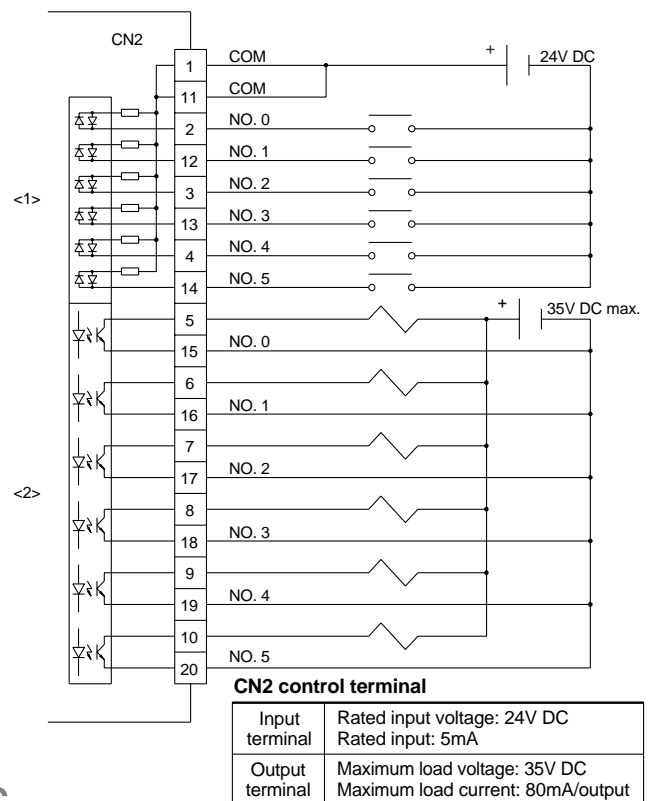
CN1. Control output terminal list

Terminal	Pin no.	Description	Function
READY	23	System ready signal	Indicates ability to perform control terminal input and communication via the dedicated communication cable when ON.
SET-ON	10	Start readiness signal	Indicates that the SET-UP operation (start ready operation: return to home position after servo ON) is complete when ON. The state in which the program can be run.
BUSY	11	Operating signal	Indicates operation in progress when ON. ON when program is being executed and when returning to the home position.
ALARM	24	Alarm output	When this signal is OFF, an alarm is being generated for the actuator/controller.
COM	12, 25	Common	The output terminal common.

Control input/output terminal: CN1

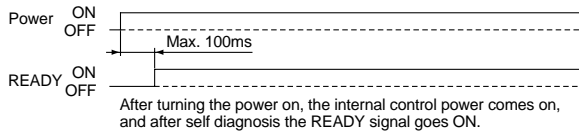


General purpose input/output terminal: CN2

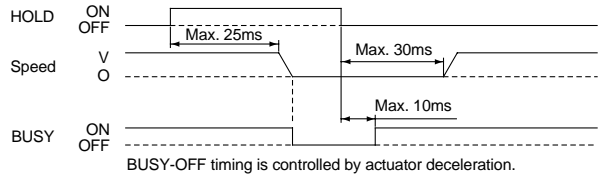


Control Method/Timing

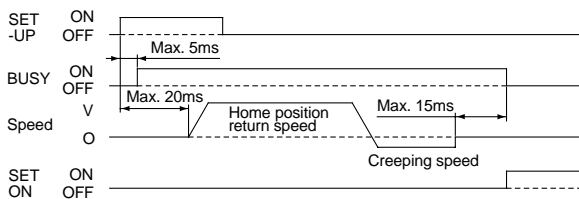
Timing for READY signal generation immediately after turning on power



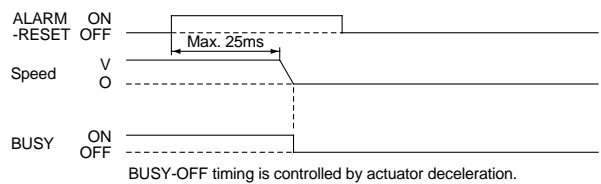
Timing for temporary stop during operation



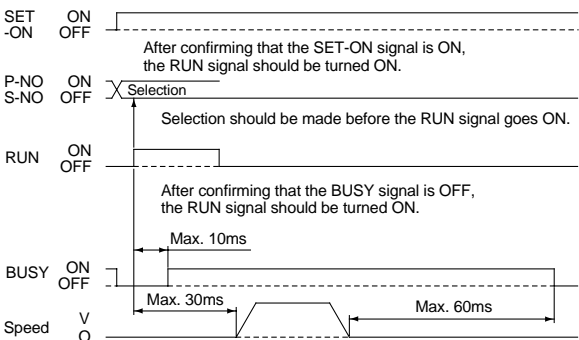
Timing for home position return



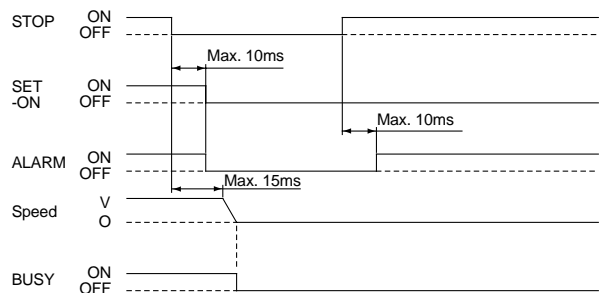
Timing for stop by ALARM-RESET during operation



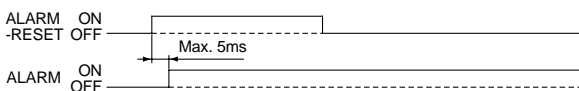
Timing for program/step execution



Timing for emergency stop during operation



Timing for alarm reset



Response time with respect to controller input signals

The following factors exist for delay of response with respect to controller input signals.

- 1) Scanning delay of the controller input signal
- 2) Delay by the input signal analysis computation
- 3) Delay of command analysis processing

Factors (1) and (2) above apply to delay with respect to the SET-ON, ALARM-RESET and STOP signals.

Factors (1), (2) and (3) above apply to delay with respect to cancellation of the RUN and HOLD signals.

When signals are applied to the controller by means of a PLC, the PLC processing delay and the controller input signal scan delay should be considered, and **the signal state should be maintained for 50ms or longer.**

It is recommended that the input signal state be initialized with the response signal to the input signal as a condition.

Windows/LC1-1-W2 (English)

Windows edition controller setup software includes all of the functions of PC-98 (MS-DOS) edition software, and the following functions have also been added.

- Direct teaching
- Program printing
- Batch editing and sending/receiving of all programs
- Batch management and multiple saving of parameters and programs

Operating environment

Computer	A model with a Pentium 75MHz or faster CPU, and able to fully operate Windows 95.
OS	Windows 95
Memory	16MB or more
Hard disk	5MB or more of disk space required

- The dedicated communications cable (LC1-1-R□□□) is required when using this software.
- This software cannot be used with Windows 3.1.



Windows/LC1-1-W2 (English)

The screenshot shows the 'Program Editor - Project1 - [Program0]' window. It features a menu bar (File, Edit, View, JOG, Help) and a toolbar with various icons. Below the toolbar is a numeric keypad and function keys (ENTER, C). The main area contains a table with 13 rows and 11 columns. The columns are: Step, Label, Instruction, Position (x0.01mm), Speed (mm/s), Acceleration (mm/s{2}), General-Purpose I/O, Jump (P-No., Label), Loop (Cycles), and Timer (x0.1s). The first six rows contain data, while rows 7-13 are empty. At the bottom, there is a 'JOG Stop' button and a status bar with the text 'Enter position. [(-)0-400000x0.01mm]'.

Step	Label	Instruction	Position x0.01mm	Speed mm/s	Acceleration mm/s{2}	General-Purpose I/O	Jump P-No.	Jump Label	Loop Cycles	Timer x0.1s
1		ASET	xxx	xxx	2000	xxx	xxx	xxx	xxx	xxx
2	1	MOVA	10000	100	xxx	xxx	xxx	xxx	xxx	xxx
3		MOVA	5000	125	xxx	xxx	xxx	xxx	xxx	xxx
4		MOVA	0	150	xxx	xxx	xxx	xxx	xxx	xxx
5		JMP	xxx	xxx	xxx	xxx	0	1	xxx	xxx
6		END	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
7										
8										
9										
10										
11										
12										
13										

Screen example

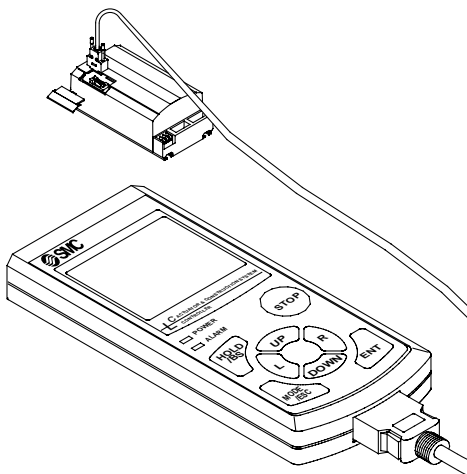
- The contents of this software and the registered product specifications may change without prior notice.
- Duplicating, copying or reproducing of this software, in whole or in part, is prohibited without prior consent from SMC.
- SMC owns the copyright of this software.
- The intellectual property rights and other rights concerning this software are solely owned by SMC. This also applies to any future version upgrades and revised versions of this software.
- SMC does not assume any compensatory responsibility for any damage or loss of profit, etc., resulting from the use of this software.
- Windows and Microsoft are registered trade marks of Microsoft Corporation.
- MS-DOS is a registered trade mark of Microsoft Corporation.
- Pentium is a trade mark of Intel Corporation.
- PC-98 Series is a registered trade mark of NEC Corporation.



- Interactive input display
- Programming with the same language as PC software

Able to execute operations such as programming and parameter changes, which up until now have been performed from a PC.

* The special cable is packed with the teaching box. (2 to 5m)



How to Order

LC1-1-T1-0 **2**

• Cable length

2	2m
3	3m
4	4m
5	5m

Performance/Specifications

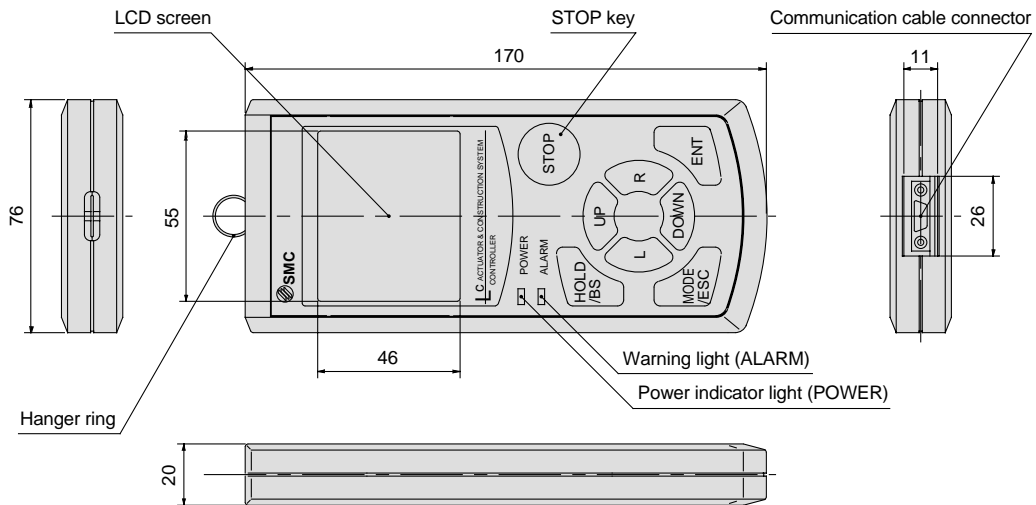
General specifications

	LC1-1-T1-0□
Power supply	Supplied from LC1
Dimensions (mm)	170 x 76 x 20
Weight (g)	158
Case type	Resin case
Display unit	46 x 55mm LCD
Operating unit	Key switches, LED indicators
Cable length	2m, 3m, 4m, 5m

Basic performance

	Performance/Specifications
Compatible controller	LC1 (all models)
Operating temperature range	5 to 50°C
Functions	Programming, Parameter change, Setup, Operation, JOG operation, Monitor, Alarm reset, JOG teaching
Monitor functions	Movement position, Movement speed
Protection functions	Over current, Over load, Over speed, Encoder error, Abnormal driver temperature, Abnormal drive power supply, Communication error, Battery error, Limit out, Abnormal driver parameter, RAM malfunction
Protection function indicator	Alarm code

Dimensions



Alarm Code List

Alarm code	Alarm	Reset	Description
10	Emergency stop	○	An emergency stop condition exists or has occurred in the past due to the controller setup software or the CN1 control STOP terminal.
11	Limit switch ON	○	Limit switch is turned ON.
12	Battery error	●	The memory backup battery voltage is low. Contact SMC.
13	Communication error	○	Communication with the controller is interrupted.
14	RAM malfunction	●	The parameter is damaged.
15	Soft stroke limit	○	The program is about to exceed the stroke length set by the parameter.
20	Over current	●	Three times the rated current or more is flowing into the driver unit.
21	Over load	●	The driver unit continuously received a current exceeding the rated current for a prescribed time or longer.
22	Over speed	●	The controller exceeded the maximum operational speed.
24	Abnormal driver temperature	●	A temperature increase of the driver unit activated the temperature sensor.
25	Encoder error	●	An encoder or actuator cable malfunction has occurred.
26	Abnormal drive current	●	The driver unit power supply is shut off due to a regeneration problem, etc.
28	Abnormal driver parameter	●	A driver parameter abnormality in the controller system has occurred.
30	Unsuccessful home position return	○	Trying to execute a program/step without completing the setup (home position return).
31	No designated speed	○	No speed designation with MOVA or MOV1, and no prior speed designation found.
32	No jump destination	○	No label found at the program designated jump destination.
33	Nesting exceeded	○	Sub-routine nesting (calling a sub-routine from another sub-routine) exceeds 14 levels.
34	No return destination	○	No return destination found for the RET command operation.
35	Executing FOR	○	A forbidden command is found between FOR and NEXT.
36	No FOR	○	NEXT command was executed without executing FOR command.
37	No operation program	○	Trying to execute a program/step with no commands.
38	Invalid movement command	○	Trying to execute a command other than MOVA, MOV1, or ASET with a step (position movement) designated operation.
39	Format error	○	An error is found in the attached value of a command being programmed.

* Refer to the Series LC1 instruction manual for alarm details.

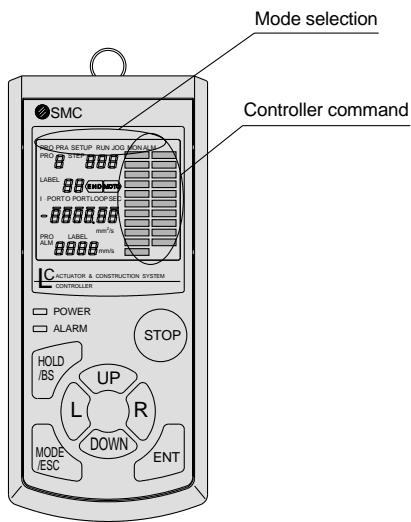
* Explanation of "Reset" symbols above:

○: Can be reset by the alarm reset.

●: Turning OFF the controller power is required for resetting.

Series LC1

Key Arrangement and Functions



	Mode	Display	Function
	Main modes	Programming mode	PRO
Parameter input/output mode		PRA	Sets a parameter.
Home position return mode		SETUP	Directs home position return.
Operation mode		RUN	Directs a program operation.
JOG operation mode		JOG	Executes a JOG operation.
Monitor mode		MON	Monitors operating condition.
Alarm reset mode		ALM	Directs alarm code display and clear.

For the operation of each mode, refer to the product's instruction manual.

Key	Functions
UP	Moves upward for item selections. Also used to increase values for data entry. In combination with L/R keys, this key drives the actuator at high speed during a JOG operation.
DOWN	Moves downward for item selections. Also used to decrease values for data entry.
L	Moves to the left for item selections. Also used to move a numerical value place to the left for data entry. It drives the actuator to the end side during a JOG operation.
R	Moves to the right for item selections. Also used to move a numerical value place to the right for data entry. It drives the actuator to the motor side during a JOG operation.
HOLD/BS	Returns to the previous mode during item selections. It becomes the temporary stop key during actuator operation.
MODE/ESC	Returns to the main mode during item selections. It exits all modes.
STOP	Becomes the emergency stop key during actuator operation. In combination with the ENT key, it launches JOG teaching and aids program editing.
ENT	Determines data during item selections. In combination with the STOP key, it launches JOG teaching and aids program editing.

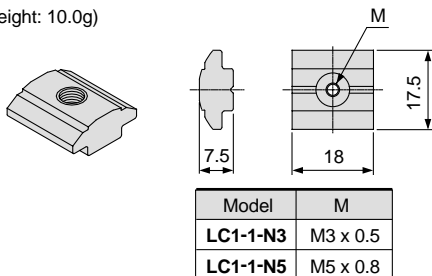
T-nuts and T-brackets for Mounting

Be sure to use when mounting the controller.

Note) The controller unit includes either T-nuts or T-brackets.

T-nuts

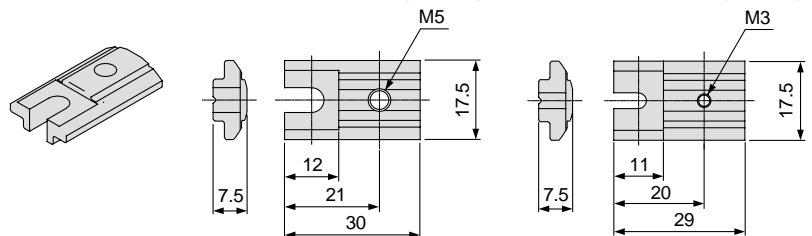
(Weight: 10.0g)



T-brackets

Model **LC1-1-L5** (Weight: 16.0g)

Model **LC1-1-L3** (Weight: 15.5g)

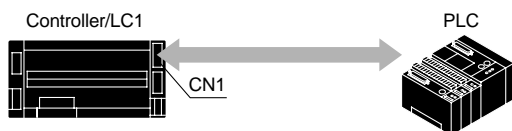


Controller Connectors

These are connectors 'all halfpitch type' used for CN1 (control input/output) and CN2 (general purpose input/output).

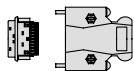
Note) The controller unit includes a controller connector for use with CN1 and CN2.

CN1 (Control input/output)



Controller connector (CN1: Control input/output)

Model **LC1-1-1000**



- 10326-52A0-008
- Halfpitch hood (26P)
- Sumitomo/3M Limited
- 10126-3000VE
- Halfpitch plug (26P)
- Sumitomo/3M Limited

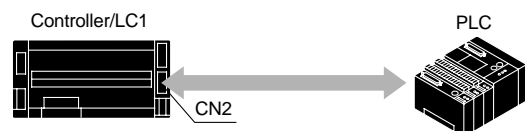
Single side wired controller connector (CN1: Control input/output)

Model **LC1-1-1050**



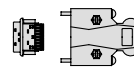
Cable is connected to LC1-1-1000.

CN2 (General purpose input/output)



Controller connector (CN2: General purpose input/output)

Model **LC1-1-2000**



- 10320-52A0-008
- Halfpitch hood (20P)
- Sumitomo/3M Limited
- 10120-3000VE
- Halfpitch plug (20P)
- Sumitomo/3M Limited

Single side wired controller connector (CN2: General purpose input/output)

Model **LC1-1-2050**



Cable is connected to LC1-1-2000.

Dedicated Communication Cables

These are cables used to connect controllers and PCs.

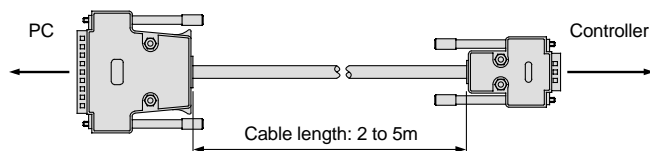
Note) Be aware of the configuration of the connector on the PC when selecting a dedicated communication cable..



Dedicated communication cable (D-sub) (For NEC PC-98 Series)

Model **LC1-1-R□D**

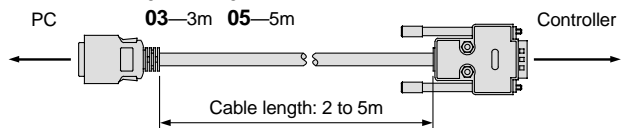
- Cable length
- 02—2m 04—4m
- 03—3m 05—5m



Dedicated communication cable (halfpitch) (For NEC PC-98 Series)

Model **LC1-1-R□H**

- Cable length
- 02—2m 04—4m
- 03—3m 05—5m

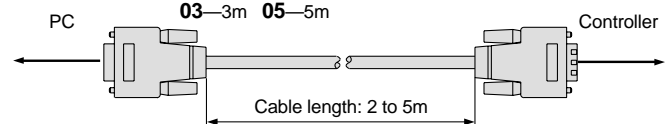


* PC-98 Series is a registered trade mark of NEC Corporation.

Dedicated communication cable (IBM PC/AT compatible computer)

Model **LC1-1-R□C**

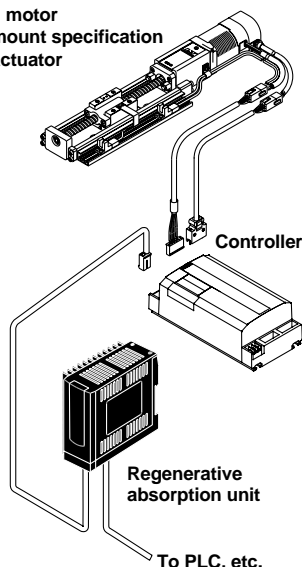
- Cable length
- 02—2m 04—4m
- 03—3m 05—5m





The regenerative absorption unit absorbs the energy (regenerative energy) that is generated by the motor when it decelerates. It is used to prevent drive power abnormality in the controller.

Standard motor vertical mount specification electric actuator



⚠ Danger

1. Contact SMC if the connected controller power supply voltage will be 110V AC or 220V AC, as this may cause fire or malfunction.
2. Secure a distance of 50mm or more between the body and control panel interior or other equipment, as this may cause fire or malfunction.
3. Confirm that there are no problems with terminal polarity, pin numbers, and crimping before connecting, as they may cause damage, malfunction, injuries, or fire.
4. Set up a circuit that shuts off the connected controller main power supply if trouble occurs in the regenerative absorption unit.
5. The regenerative absorption unit (LC7R) is exclusively for use with series LC1 controller connection. Therefore, never connect it to other equipment as this may cause fire or malfunction.

How to Order

Regenerative Absorption Unit

LC7R—K1 A

Connected controller power supply voltage ^{Note 1)}

1	100V AC (50/60Hz)
2	200V AC (50/60Hz)

• Accessory type

Nil	Without accessory
S1	Series LC1 connector and contact pin + Regenerative absorption unit connector and contact pin
C1	Series LC1 connection cable (0.5m) ^{Note 2)}

Note 1) Consult SMC if the connected controller power supply voltage will be 110V AC or 220V AC.

Note 2) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Single Option

LC7R—1—

• Accessory type

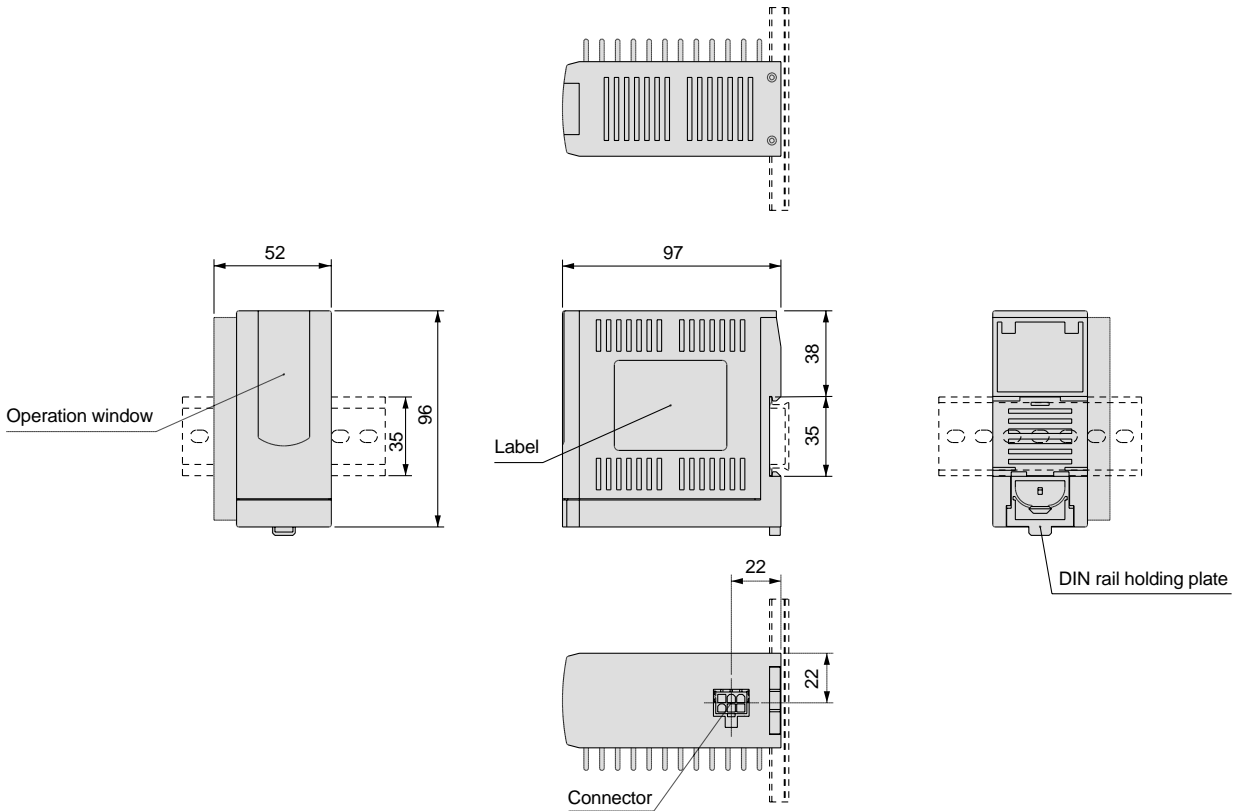
S0	Regenerative absorption unit connector and pin
S1	Series LC1 connector and pin
C1	Series LC1 connection cable (0.5m) ^{Note)}

Note) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Specifications

Model	LC7R-K11A <input type="checkbox"/>	LC7R-K12A <input type="checkbox"/>
Regeneration method	Heat exchange method based on resistance	
Regenerative resistance capacity	40W	
Regenerative operation voltage	180V	380V
Protective circuit	Regenerative voltage input mis-wiring protection Over current protection, Overheating protection (Normally closed, Radiator sensor OFF at 100°C)	
Ambient operating temperature	0 to 40°C	
Connected controller power voltage	100V AC	200V AC
External connection method	Connector	
Insulation resistance	500V DC, 50MΩ or more	
Mounting	DIN rail mount	

Dimensions



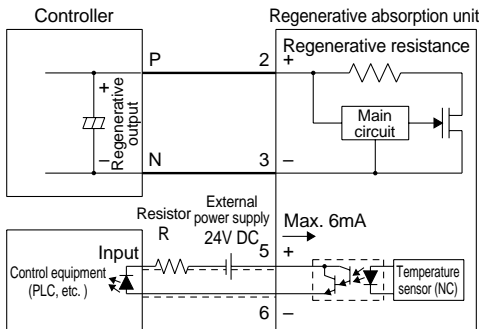
Connection Examples

• Electrical wire

———— Cover O.D.: Max. 3.1mm (AWG18 to 20) [0.5m or less]
 - - - - - Cover O.D.: Max. 3.1mm (AWG18 to 24) [1m or less]

• Temperature control output terminal

Maximum rated voltage: 30V
 Maximum rated current: 6mA



Note) Select 6mA or less for resistor R after confirming the input capacity of the control equipment.

• Regenerative absorption unit connectors [Manufacturer: Molex Japan Co., Ltd.]

Description	Part no.	Quantity
Receptacle	5557-06R	1
Female terminal	5556PBTL	6

• Wiring tools [Manufacturer: Molex Japan Co., Ltd.]

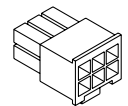
Wiring tools should be provided by customer.

Description	Part no.
Crimping tool	57026-5000 (for UL1007) 57027-5000 (for UL1015)
Puller	57031-6000

• Contact pin number

Terminal	Pin no.	Description
Vin (P)	2	Regenerative absorption unit power input (positive)
Vin (N)	3	Regenerative absorption unit power input (negative)
Vout (P)	1	Extended regenerative resistance output (positive)
Vout (N)	4	Extended regenerative resistance output (negative)
ALM (P)	5	Temperature control output terminal (positive)
ALM (N)	6	Temperature control output terminal (negative)

Insertion side

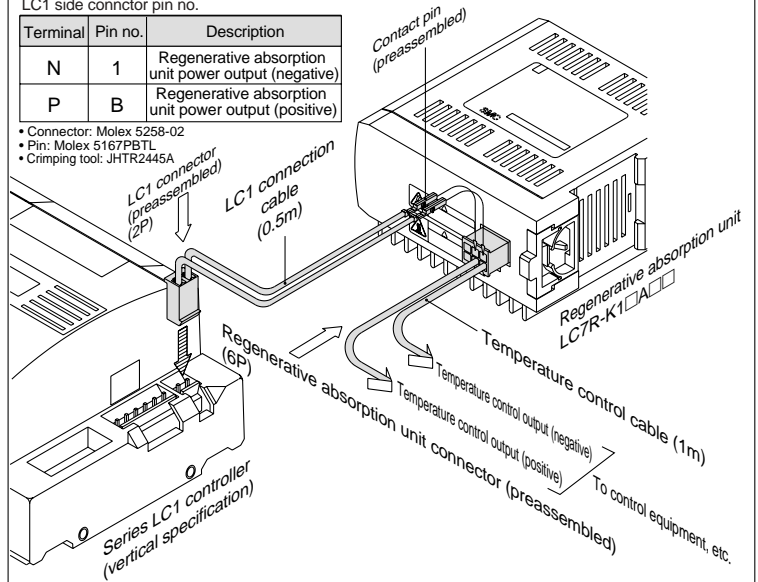


LC7R connection method

LC1 side connector pin no.

Terminal	Pin no.	Description
N	1	Regenerative absorption unit power output (negative)
P	B	Regenerative absorption unit power output (positive)

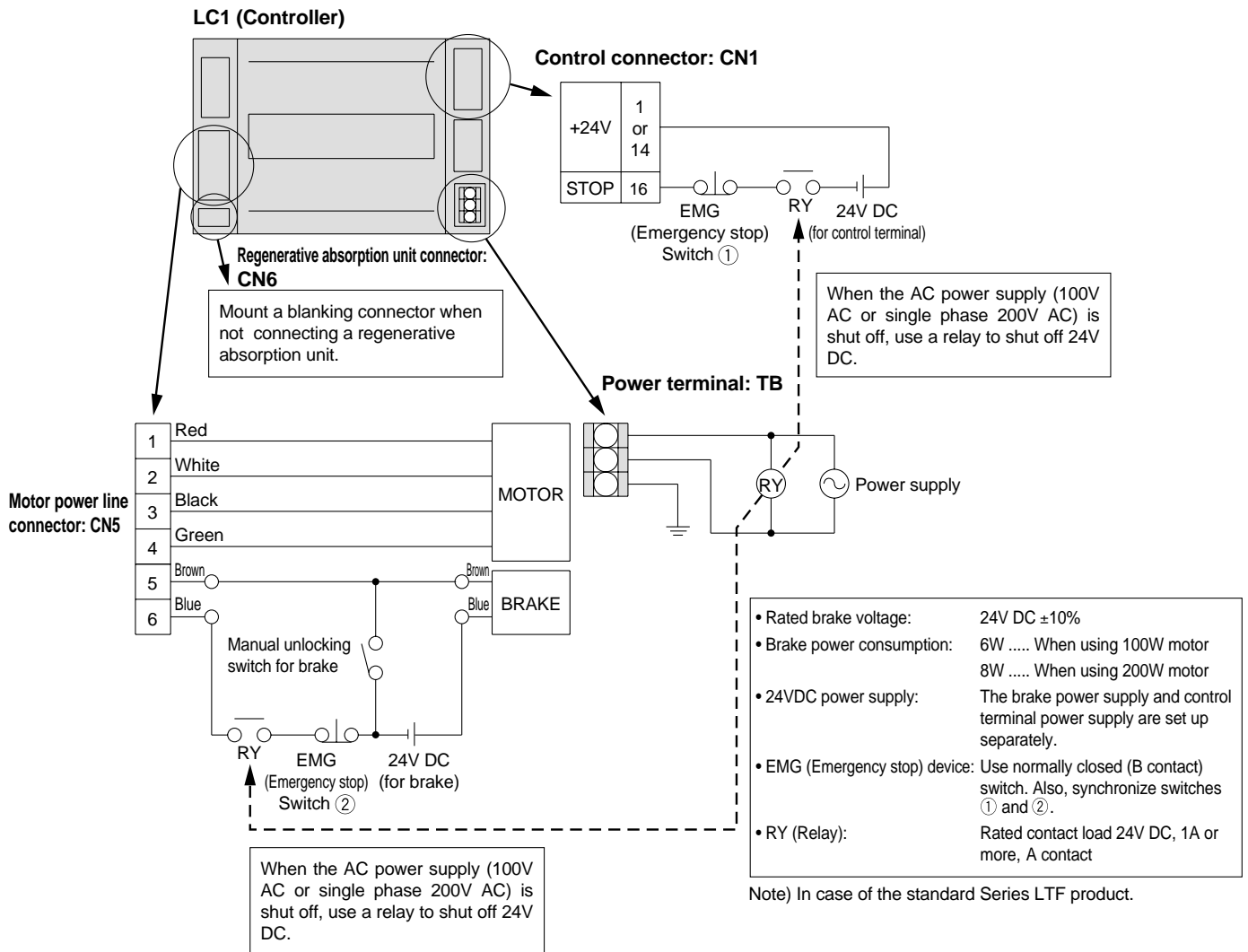
- Connector: Molex 5258-02
- Pin: Molex 5167PBTL
- Crimping tool: JHTR2445A



Series LC7R

Brake Wiring Example

A wiring example for controller (Series LC1) connectors and a brake is shown below. The brake is in a de-energized condition and locked. 24VDC is required to unlock it. The brake terminal is located in the motor power line connector (CN5), and it is connected to the relay switch inside the controller. By connecting the wiring to this terminal, turning on and off of the brake is controlled by the controller. (The brake does not have polarity.)



⚠ Danger

1. When not connecting a regenerative absorption unit, use a blanking plate to cover CN6, as there is a danger of electrocution or injury.
2. The manual brake unlocking switch unlocks the brake during maintenance or an emergency. Mount the switch when it is necessary for maintenance, etc. Be sure to turn the switch off for purposes other than maintenance, etc. The brake will not operate with the switch on at emergency.
3. If the manual brake unlocking switch is not mounted, the brake cannot be unlocked for an emergency.

⚠ Caution

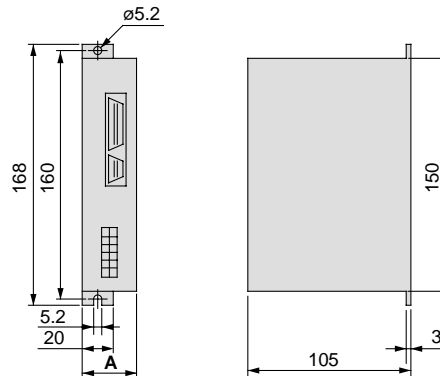
1. A regenerative absorption unit is required depending on actuator operating conditions. Read the instruction manual for the regenerative absorption unit when one is connected.

Non-Standard Motor Compatible Drivers

Matsushita Electric Industrial Co., Ltd. Drivers for LTF (For the holding brake wiring, refer to technical information provided by each manufacturer.)

Dimensions

Driver



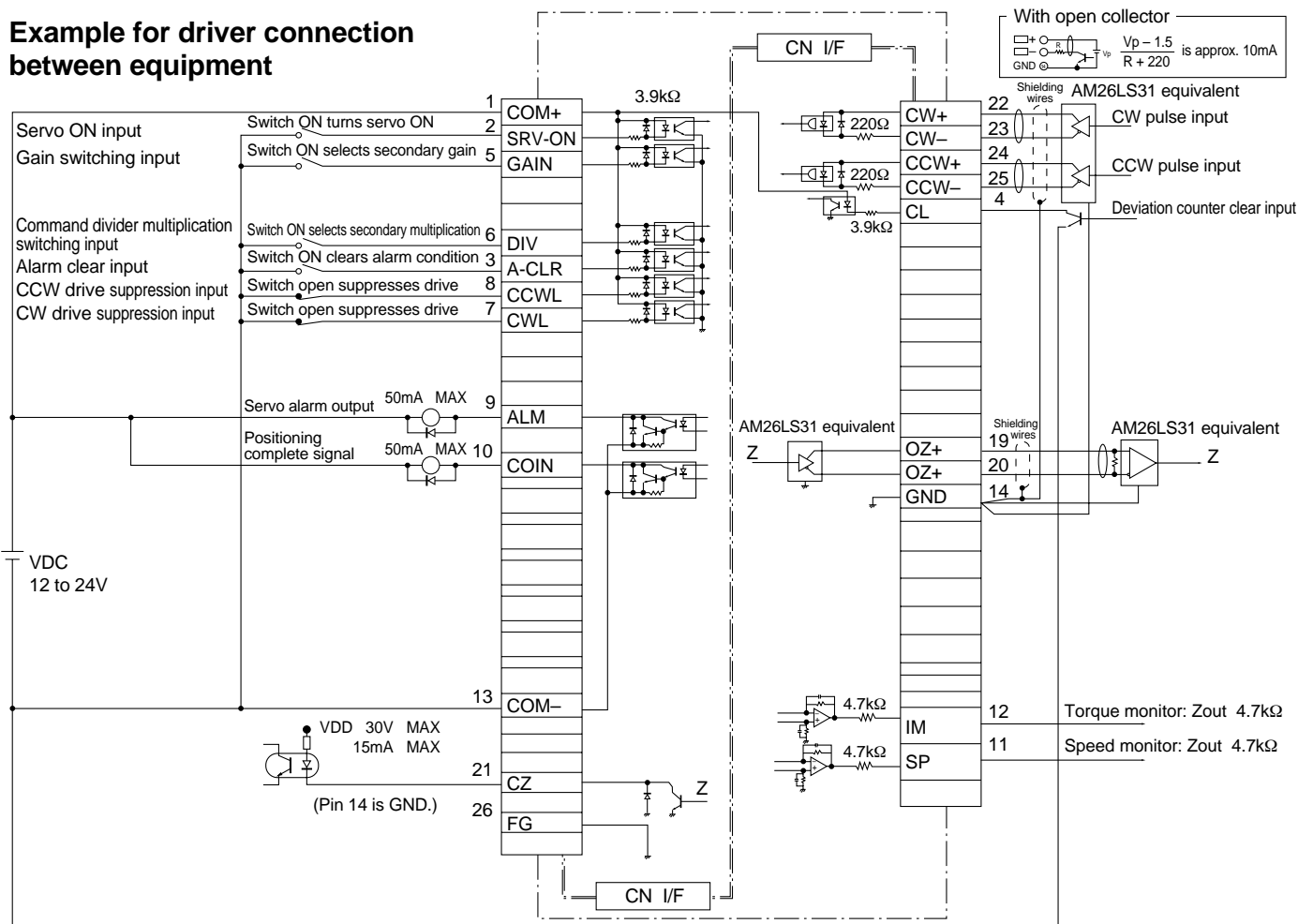
Driver dimensions

Driver model	A
MSD013P1E	35
MSD011P1E	45
MSD023P1E	
MSD021P1E	60

Driver input/output signal list (CN-1/F connector)

Pin no.	Symbol	Signal description	Pin no.	Symbol	Signal description
1	COM+	Control signal power supply	12	IM	Torque monitor signal
2	SRV-ON	Servo ON input	13	COM-	Control signal power supply
3	A-CLR	Alarm clear input	14	GND	
4	CL	Counter clear input	19	OZ+	Z phase output
5	GAIN	Gain switching input	20	OZ-	Z phase output
6	DIV	Command divider switching input	21	CZ	Z phase output
7	CWL	CW drive suppression input	22	CW+	CW pulse input
8	CCWL	CCW drive suppression input	23	CW-	CW pulse input
9	ALM	Servo alarm output	24	CCW+	CCW pulse input
10	COIN	Positioning complete signal output	25	CCW-	CCW pulse input
11	SP	Speed monitor signal	26	FG	Frame ground

Example for driver connection between equipment

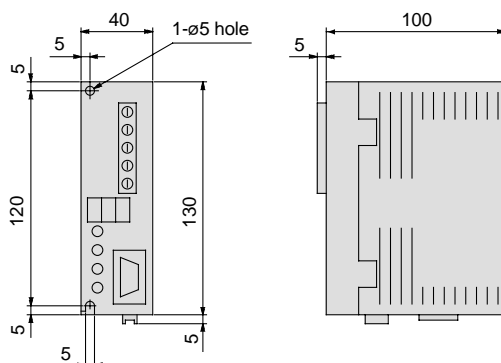


Non-standard Motor Compatible Drivers

Mitsubishi Electric Corporation Drivers for LTF (For the holding brake wiring, refer to technical information provided by each manufacturer.)

Dimensions (RS-232C without optional unit)

Driver

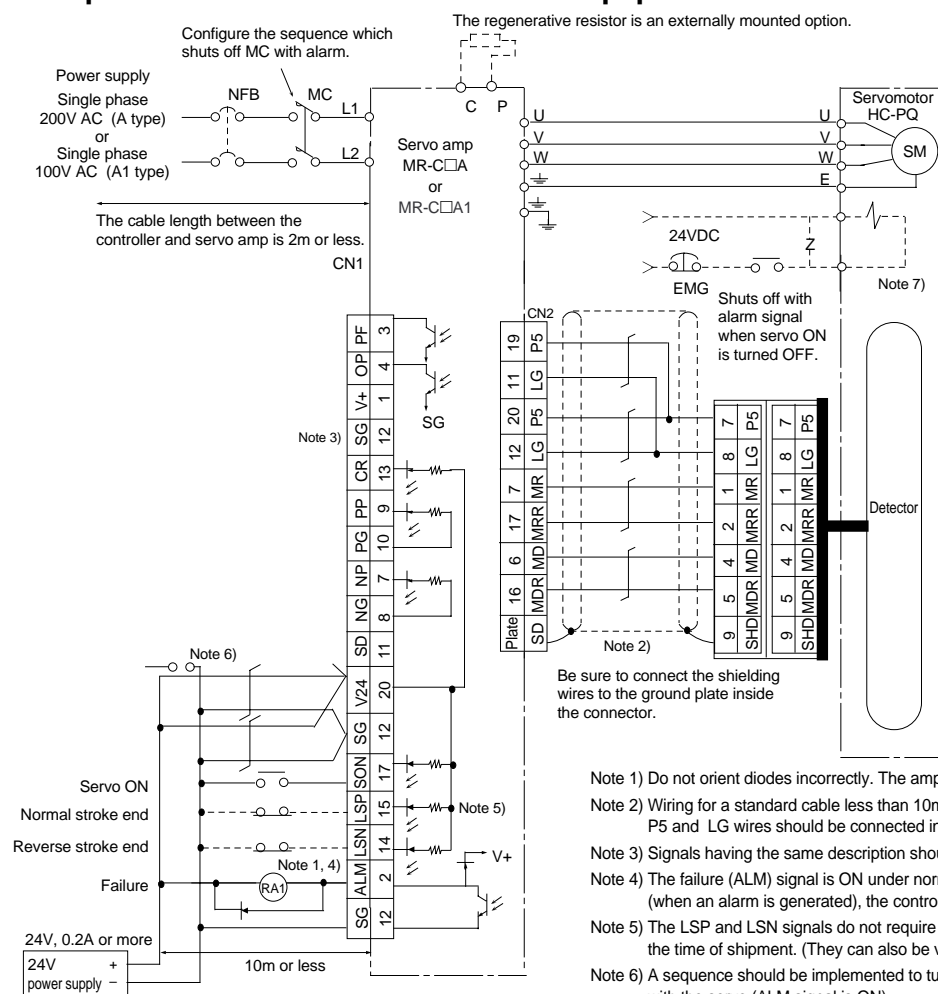


Driver dimensions Driver input/output signal list (CN-1/F connector)

Driver model
MR-C10A
MR-C20A
MR-C10A1
MR-C20A1

Pin no.	Symbol	Signal description	Pin no.	Symbol	Signal description
1	V+	Digital output power supply	11	SD	Shield
2	ALM	Failure	12	SG	Interface power supply common
3	PF	Positioning complete	13	CR	Clear
4	OP	Z phase pulse	14	LSN	Reverse stroke end
5	SG	Interface power supply common	15	LSP	Normal stroke end
7	NP	Reverse pulse line	16	V5	Interface power supply
8	NG	Reverse pulse line	17	SON	Servo ON
9	PP	Normal pulse line	19	OPC	Open collector power supply
10	PG	Normal pulse line	20	V24	Interface power supply

Example for driver connection between equipment

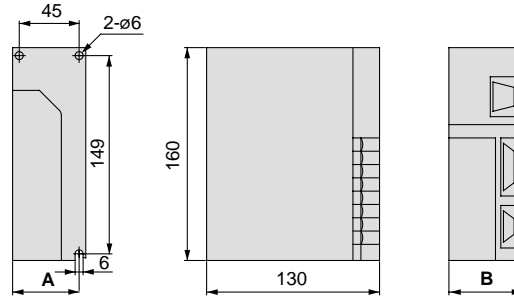


Non-standard Motor Compatible Drivers

Yasukawa Electric Corporation Drivers for LTF (For the holding brake wiring, refer to technical information provided by each manufacturer.)

Dimensions

Driver



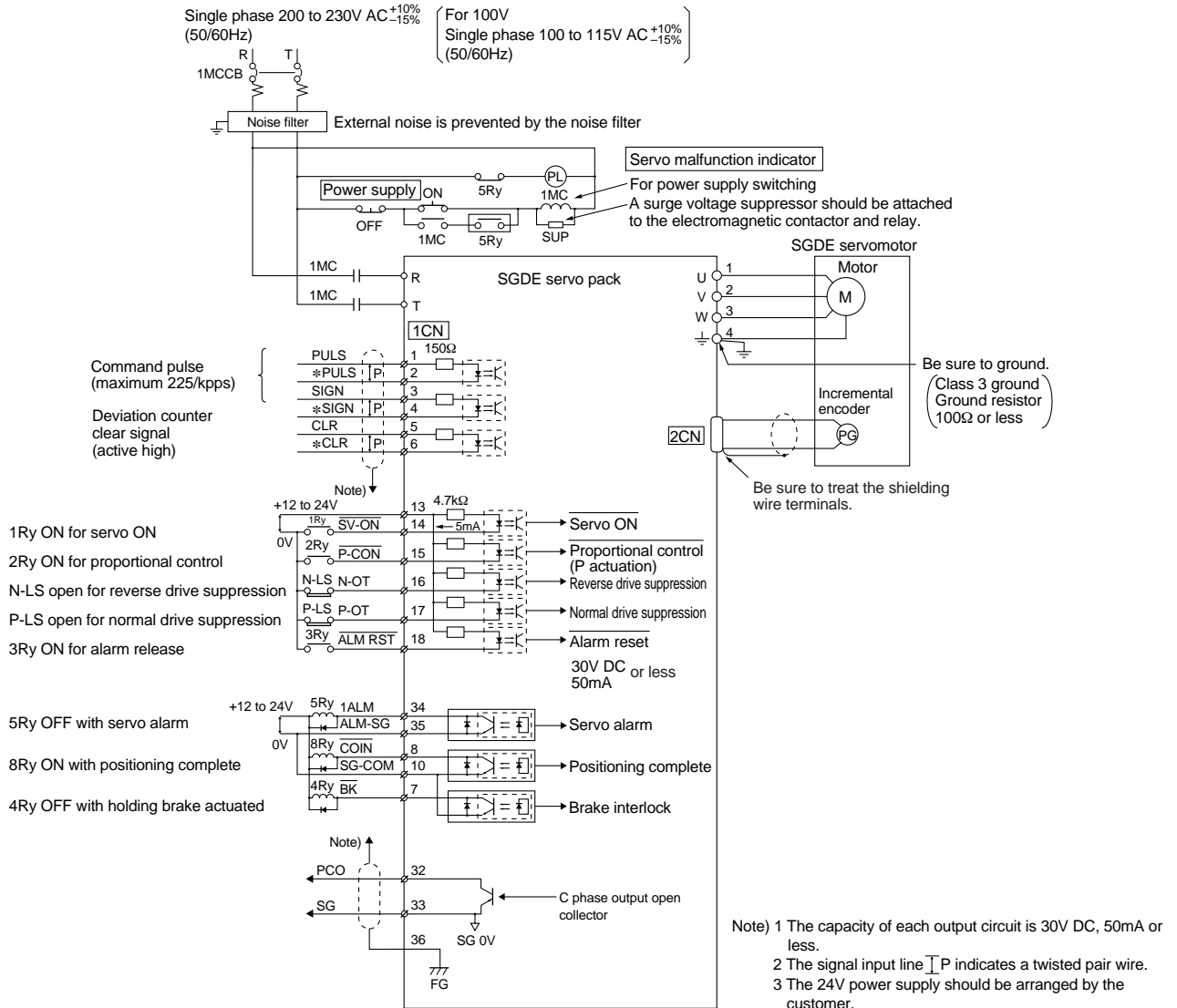
Driver dimensions

Driver model	A	B
SGDE-01AP		
SGDE-01BP	50	55
SGDE-02AP		
SGDE-02BP	65	75

Driver input/output signal list (CN-1/F connector)

Pin no.	Signal	Signal description	Pin no.	Signal	Signal description
1	PULS	Command pulse input	14	S-ON	Servo ON input
2	*PULS	Command pulse input	15	P-ON	P actuation input
3	SIGN	Command code input	16	P-OT	Normal rotation suppression input
4	*SIGN	Command code input	17	N-OT	Reverse rotation suppression input
5	CLR	Deviation counter clear input	18	ALMRST	Alarm reset input
6	*CLR	Deviation counter clear input	32	PCO	PG output C phase
7	BK	Brake interlock signal output	33	SG	0V
8	COIN	Positioning complete signal output	34	ALM	Servo alarm output
10	SG	0V	35	SG	0V
13	P-IN	External power supply input	36	FG	Frame ground

Example for driver connection between equipment



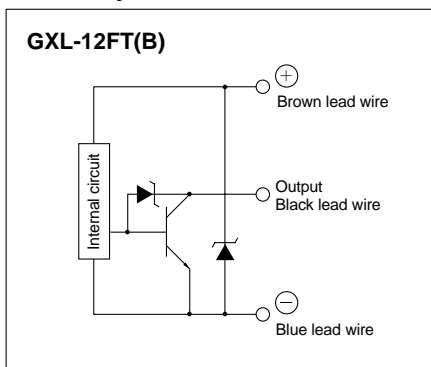
Applicable switch models

Applicable model	Part no.	Switch type		
LTF	GXL-N12FT	Standard	N.O. (A contact)	3 wire
	GXL-N12FTB	Standard	N.C. (B contact)	3 wire

Switch specifications (SUNX Corporation)

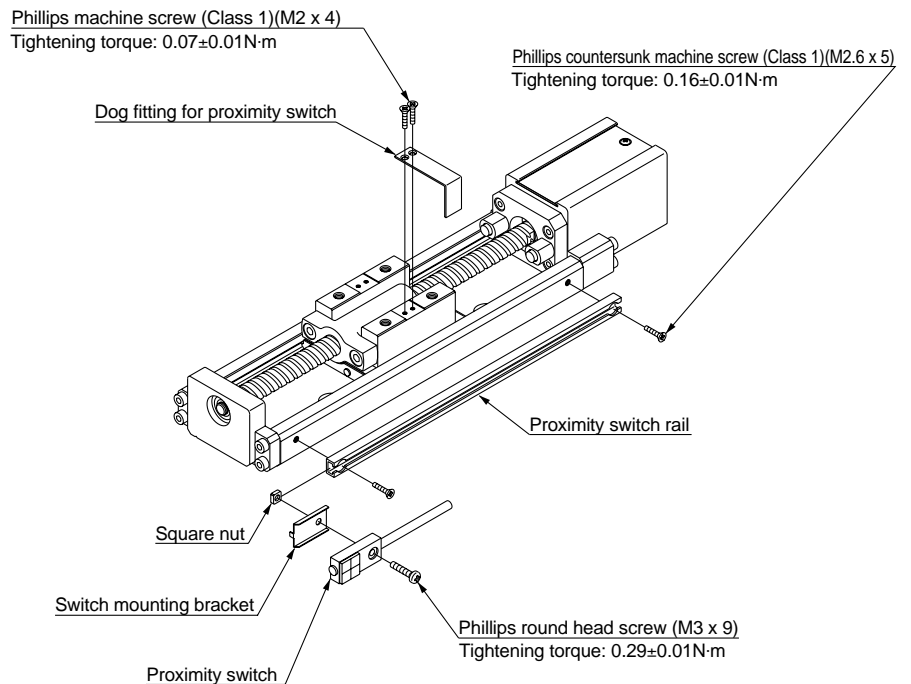
Part no.	GXL-N12FT(B)		
Repeatability	Direction of detecting axis, Perpendicular to detecting axis: 0.04mm or less		
Power supply voltage	12 to 24V DC $\pm 10\%$, Ripple P-P 10% or less		
Current consumption	15mA		
Output	NPN Maximum load current: 100mA Maximum applied voltage: 30V DC Residual voltage: 1V or less (At 100 mA inrush current) 0.4V or less (At 16 mA inrush current)		
Maximum response frequency	500Hz		
Indicator light	Red LED (lights up when ON)		
Environmental resistance	Ambient temperature	-10° to 55°C	
	Ambient humidity	45 to 85% RH	
	Noise resistance	Power line: 240Vp, pulse width of 0.5 μs	
Detecting distance fluctuation	Temperature characteristics	Within $\pm 15\%$ – 10% of detecting distance at 20°C within ambient temperature range	
	Voltage characteristics	Within $\pm 2\%$ with $\pm 10\%$ fluctuation of operating voltage	
Cable	CN-13-C3 (\square 3.8mm 3 wire heavy duty cable 3m)		

Proximity switch internal circuit



Be sure to use the mounting screws included, and mount the proximity switch as shown in the drawing to the right. Mount the dog fitting for proximity switch as illustrated to the right. Always use the proper tightening torque and use a thread locking agent on screws to prevent loosening.

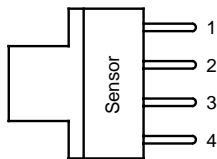
Proximity Switch/Dog Fitting for Proximity Switch Mounting



Standard Photo Micro Sensor for Home Position (OMRON Corporation)

Rating

Power supply voltage	5 to 24V DC $\pm 10\%$, Ripple (p-p) 10% or less
Current consumption	35mA or less
Control output	5 to 24VDC load current (Ic) 100mA, Residual voltage 0.8V or less Load current (Ic) 40mA, Residual voltage 0.4V or less
Ambient temperature	Operation: -25 to 55°C (When stored: -30 to 80°C)
Ambient humidity	Operation: 5 to 85%RH (When stored: 5 to 95%RH)
Part no.	EE-SX674
Part no. of connector with code	EE-1010
Applicable actuator	LTF



Terminal arrangement

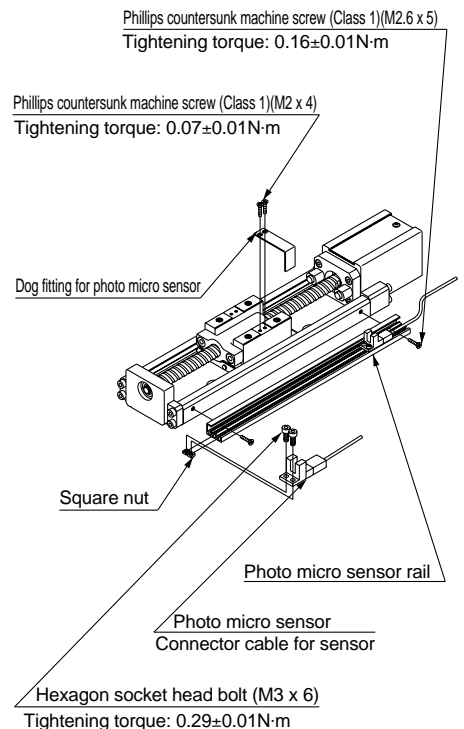
1	Brown	Vcc (+)
2	White	L
3	Black	OUTPUT
4	Blue	GND (OV) (-)

* Normally ON when light is blocked.
However, if the (L) terminal and (+) terminal are shorted, it changes to ON when light enters.

Output level circuit

Operating condition of output transistor	ON when light enters	ON when light is blocked
Output circuit	<p>* Normally ON when light is blocked. However, if the (L) terminal and (+) terminal are shorted, it changes to ON when light enters.</p>	
Time chart	<p>(“L” and “+” shorted)</p> <p>Light enters: [ON pulse]</p> <p>Light blocked: [OFF pulse]</p> <p>Lighted indicator light (Red): [ON pulse]</p> <p>Light Off: [OFF pulse]</p> <p>Output transistor: ON [ON pulse], OFF [OFF pulse]</p> <p>Load 1 (Relay): Operate [ON pulse], Return [OFF pulse]</p> <p>Load 2: H [ON pulse], L [OFF pulse]</p>	<p>(“L” and “+” open)</p> <p>Light enters: [ON pulse]</p> <p>Light blocked: [OFF pulse]</p> <p>Lighted indicator light (Red): [ON pulse]</p> <p>Light Off: [OFF pulse]</p> <p>Output transistor: ON [OFF pulse], OFF [ON pulse]</p> <p>Load 1 (Relay): Operate [OFF pulse], Return [ON pulse]</p> <p>Load 2: H [OFF pulse], L [ON pulse]</p>

Photo Micro Sensor/ Dog Fitting for Photo Micro Sensor Mounting



Be sure to use the attached mounting screws.
Mount the photo micro sensor as illustrated to the right.
Mount the dog fitting for photo micro sensor as illustrated to the right.
Be sure to observe the prescribed tightening torque. Use special adhesive for screws for locking.

Inquiry Sheet

Fill out the form and contact the nearest SMC sales office or distributor.


Name of customer	Company name			
	Dept.		Contact person	
Contact telephone/ fax no.	Telephone		Fax	
Mounting orientation	Horizontal, Horizontal wall mount, Horizontal reverse mount, Vertical			
Work piece load (kg)				
Stroke (mm)				
Speed (mm/s)				
Positioning repeatability (mm)	±0.1, ±0.05, ±0.02			
<p>Components</p> <p>Circle components provided by customer.</p>	<p>Units required</p> <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; width: 40px; height: 20px; display: flex; align-items: center; justify-content: center;">□</div> ⇒ <div style="border: 1px solid black; width: 60px; height: 20px; display: flex; align-items: center; justify-content: center;">□</div> ⇒ <div style="border: 1px solid black; width: 60px; height: 20px; display: flex; align-items: center; justify-content: center;">□</div> ⇒ <div style="border: 1px solid black; width: 60px; height: 20px; display: flex; align-items: center; justify-content: center;">□</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> Controller Driver Motor Actuator </div> <ul style="list-style-type: none"> • Actuator only • Actuator + Motor • Actuator + Motor + Driver (controller) <div style="text-align: right; margin-right: 20px;">} Proceed to ①.</div> <p>① Motor/Driver: Yes (Manufacturer: _____, Part no.: _____) : No — Proceed to ②.</p> <p>② Controller/Driver selection:</p> <p>a) Controller provided by customer PLC (Manufacturer: _____, Part no.: _____) Positioning unit (pulse output function): Yes, No</p> <p>b) Driver specifications Power supply: 24V DC, 100V AC, 200V AC International standard compatibility: None, CE, UL</p> <p>c) Motor type: AC servomotor, Stepper motor (2 phase/5 phase), Brushless motor</p>			
Operation pattern Describe in detail.				
Tact time	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p style="text-align: center;">Speed</p> <p style="text-align: center;">Time</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Confirm the amount of time in seconds needed to cover the moving distance.</p> <p>Moving distance: _____ mm</p> <p>t = Tact time: _____ s</p> <p>S = Cycle time: _____ s</p> </div> </div>			
Work piece moment	<p>Example) Projection distance</p> <div style="display: flex; align-items: center; justify-content: center;"> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 60%;"> <p>X: _____ mm</p> <p>Y: _____ mm</p> <p>Z: _____ mm</p> </div> </div>			
Environment	General, Clean room, Mist environment, Dusty environment			





Series LTF

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 10218 Note 1), JIS 8433 Note 2) and other safety practices.

 **Caution:** Operator error could result in injury or equipment damage.

 **Warning:** Operator error could result in serious injury or loss of life.

 **Danger:** In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 10218: Manipulating industrial robots - Safety

Note 2) JIS 8433: General Rules for Robot Safety

Warning

1. The compatibility of electric actuators is the responsibility of the person who designs the system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate this equipment.

Electric actuators can be dangerous if an operator is unfamiliar with them. Assembly, handling or repair of systems using electric actuators should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above, and shut off the power supply for this equipment.
3. Before machinery/equipment is restarted, confirm that safety measures are in effect.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, medical equipment, food and beverages, or safety equipment.
3. An application which has the possibility of having negative effects on people, property or animals, requiring special safety analysis.



Series LTF

Electric Actuator Precautions 1

Be sure to read before handling.

Design

Warning

- 1. There is a possibility of dangerous sudden action by actuators if sliding parts of machinery are twisted due to external forces, etc.**
In such cases, human injury may occur, e.g., by catching hands or feet in the machinery, or damage to the machinery itself may occur. Therefore, the machine should be adjusted for smooth operation and designed to avoid such dangers.
- 2. A protective cover is recommended to minimize the risk of human injury.**
If a driven object and moving parts of an actuator pose a danger of human injury, design the structure to avoid contact with the human body.
- 3. Securely tighten all stationary parts and connected parts of electric actuators so that they will not become loose.**
Avoid use in locations where direct vibration or impact shock, etc., will be applied to the body of the actuator.
- 4. In cases where dangerous conditions may result from power failure or malfunction of the product, install safety equipment to prevent damage to machinery and human injury. Consideration must also be given to drop prevention with regard to suspension equipment and lifting mechanisms.**
- 5. Consider possible loss of power sources.**
Take measures to protect against human injury and machine damage in the event that there is a loss of air pressure, electricity or hydraulic power.
- 6. Consider emergency stops.**
Design so that human injury and/or damage to machinery and equipment will not be caused when machinery is stopped by a safety device under abnormal conditions such as a power outage or a manual emergency stop.
- 7. Consider the action when operation is restarted after an emergency stop or abnormal stop.**
Design the machinery so that human injury or equipment damage will not occur upon restart of operation.

Operation

Caution

- 1. In order to ensure proper operation, be certain to read the instruction manual carefully. As a rule, handling or usage/operation other than that contained in the instruction manual are prohibited.**
- 2. The actuator can be used with a load directly applied within the allowable range. However, design for an appropriate connecting method and careful alignment are necessary when a load with external support and guide mechanisms is connected.**
Please note that the reference plane for actuator body mounting should only be used as a guideline to install the body. Never use it as a reference plane to align the entire equipment with external support and guide mechanisms.
The longer the stroke is, the larger the variation in the axial center becomes. Therefore, devise a connection method to absorb the variation.

Operation

Caution

- 3. Since the bearing parts and parts surrounding the lead screw are adjusted at the time of shipment, do not change the setting of the adjusted parts.**
- 4. The product can be used without lubrication. In case the product is to be lubricated, use lithium grease (JIS 2).**
- 5. If the actuator will be used in an environment where it will be exposed to chips, dust, cutting oil (water, liquids), etc., a cover or other protection should be provided.**
- 6. See to it that no repeated bending stress or stretching force is applied to the motor cable.**
- 7. Since no protective cover is installed on the product, provide an external protective cover protecting the entire product wherever possible.**
Using the product in an environment where it is exposed to water, liquid coolant or dust such as iron powder will cause an adverse effect to the ball screw and the guide. Therefore, an external cover is also required for dust prevention.
- 8. Secure the work piece firmly on the top of the table using the four mounting holes.**
Never use the actuator with the work piece mounted only on one side of the table.
- 9. If the electric actuator is repeatedly operated for short stroke cycles (20mm for LJ, 10mm for LX), this may cause loss of grease. Therefore, operate the actuator for a full stroke once every scores of cycles.**

Selection

Warning

- 1. Confirm the specifications.**

The products in this catalog should not be used outside the range of specifications, as this may cause damage or malfunction, etc. (Refer to specifications.)

Caution

- 1. The operation of the actuator should be confirmed at a low speed. Operate it at the prescribed speed only after proper operation is confirmed.**



Series LTF

Electric Actuator Precautions 2

Be sure to read before handling.

Mounting

Caution

1. Do not use until you verify that the equipment can operate properly.
2. The product should be mounted and operated after thoroughly reading the instruction manual and understanding its contents.
3. Do not dent, scratch or cause other damage to the body and table mounting surfaces.

This may cause a loss of parallelism in the mounting surfaces, looseness in the guide unit, an increase in operating resistance or other problems.

4. When attaching a work load, do not apply strong impact shock or a large moment.

If an outside force exceeding the allowable moment is applied, this may cause looseness in the guide unit, an increase in sliding resistance or other problems.

5. When connecting a load having an external support or guide mechanism, be sure to select a suitable connection method and perform careful alignment.
6. Take care that cables are not caught by actuator movement.
7. Do not use in locations where there is vibration or impact shock. Contact SMC before using in this kind of environment, as damage may result.
8. Give adequate consideration to the arrangement of wiring, etc., when mounting. If wiring is forced into inappropriate arrangement, this may lead to breaks in the wiring and result in malfunction.
9. Avoid use in the following environments.
 1. Locations with a lot of debris or dust, or where chips may enter.
 2. Locations where the ambient temperature exceeds the range of 5 to 40°C.
 3. Locations where the ambient humidity exceeds the range of 10 to 90%.
 4. Locations where corrosive or combustible gases are generated.
 5. Locations where strong magnetic or electric fields are generated.
 6. Locations where direct vibration or impact shock, etc., will be applied to the actuator unit.

Grounding

Caution

1. Be sure to carry out grounding in order to ensure the noise tolerance of the controller.
2. Dedicated grounding should be used as much as possible. Grounding should be to a type 3 ground. (Ground resistance of 100Ω or less.)
3. Use a wire with a sectional area of 2 mm² or larger for grounding. Grounding should be as close as possible to the controller, and the ground wires should be as short as possible.
4. In the unlikely event that malfunction is caused by the ground, it may be disconnected.

Power Supply

Caution

1. In cases where voltage fluctuations greatly exceed the prescribed voltage, a constant voltage transformer, etc., should be used to operate within the prescribed range.
2. Use a power supply that has low noise between lines and between power and ground. In cases where noise is high, an isolation transformer should be used.
3. The power supply line to the controller and the interface power supply line to general input/output and control terminals (24V DC) must be wired separately in different systems.
4. To minimize the voltage drop, use 100/200 V AC and 24 V DC wires with the largest sectional areas possible and keep the wiring length as short as possible.
5. The 100/200 V AC wire must not be bundled with or arranged in close proximity with the input/output lines of control terminals or encoder signal lines. If possible, keep a 100 mm or larger distance from such lines.
6. To prevent surges from lightning, connect a varistor for lightning. Ground the surge absorber for lightning separately from the grounding of the controller.

Operating Environment

Caution

1. Do not use the actuator in an environment where there is possible danger of corrosion.
2. Install a protective cover on the entire product in an environment where a large amount of dust is present or where the product is exposed to water or oil drops.
3. Do not use the actuator in an environment where a strong magnetic field is present.

Maintenance

Warning

1. Perform maintenance according to the procedures indicated in the instruction manual.

If handled improperly, malfunction and damage of machinery or equipment may occur.

2. Removal of equipment

When equipment is to be removed, first confirm that measures are in place to prevent dropping or runaway of driven objects, etc., and then proceed after shutting off the electric power. When starting up again, proceed with caution after confirming that conditions are safe.



Photo Micro Sensor and Proximity Switches Precautions

Be sure to read before handling.

Refer to the main pages for precautions on respective series.

Operating Environment

Warning

- 1. Never use in an atmosphere of explosive gases.**
The construction of auto switches is not intended to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.
- 2. Do not use in an area where a magnetic field is generated.**
Auto switches will malfunction or magnets inside actuators will become demagnetized.
- 3. Do not use in an environment where the auto switch will be continually exposed to water.**
Do not use switches in applications where they will be continually exposed to water splash or spray. Poor insulation or swelling of the potting resin inside switches may cause malfunction.
- 4. Do not use in an environment with oil or chemicals.**
Consult SMC if auto switches will be used in an environment with coolant, cleaning solvent, various oils or chemicals. If auto switches are used under these conditions for even a short time, they may be adversely affected by improper insulation, malfunction due to swelling of the potting resin, or hardening of the lead wires.
- 5. Do not use in an environment with temperature cycles.**
Consult SMC if switches are used where there are temperature cycles other than normal air temperature changes, as they may be adversely affected internally.
- 6. Do not use in an area where surges are generated.**
When there are units (solenoid type lifter, high frequency induction furnace, motor, etc.) which generate a large amount of surge in the area around actuators with solid state auto switches, this may cause deterioration or damage to the internal circuit elements of the switch. Avoid sources of surge generation and crossed lines.
- 7. Avoid accumulation of iron waste or close contact with magnetic substances.**
When a large amount of ferrous waste such as machining chips or spatter is accumulated, or a magnetic substance (something attracted by a magnet) is brought into close proximity with an auto switch actuator, it may cause auto switches to malfunction due to a loss of the magnetic force inside the actuator.
- 8. Keep the sensor away from splashes of organic solvents, acids, alkalis aromatic hydrocarbons or chloroaliphatic hydrocarbons.**
Melting may be caused by such chemicals splashed on the sensor, resulting in possible decline of performance.

Other

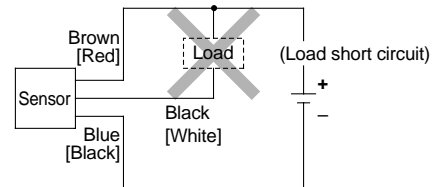
Warning

- 1. Consult SMC concerning water resistance, flexibility of lead wires, and usage at welding sites, etc.**

Incorrect Usage

Caution

- 1. Do not operate beyond the rated voltage range.**
If applying voltage over the rated voltage range, equipment may be damaged.
- 2. Avoid incorrect wiring such as polarity of power supply.**
Otherwise, equipment may be damaged.
- 3. Do not short circuit the load. (Do not connect to power supply.)**
Otherwise, equipment may be damaged.

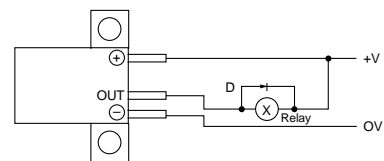


Note) Lead wire colors inside [] are those prior to conformity with IEC standards.

Other

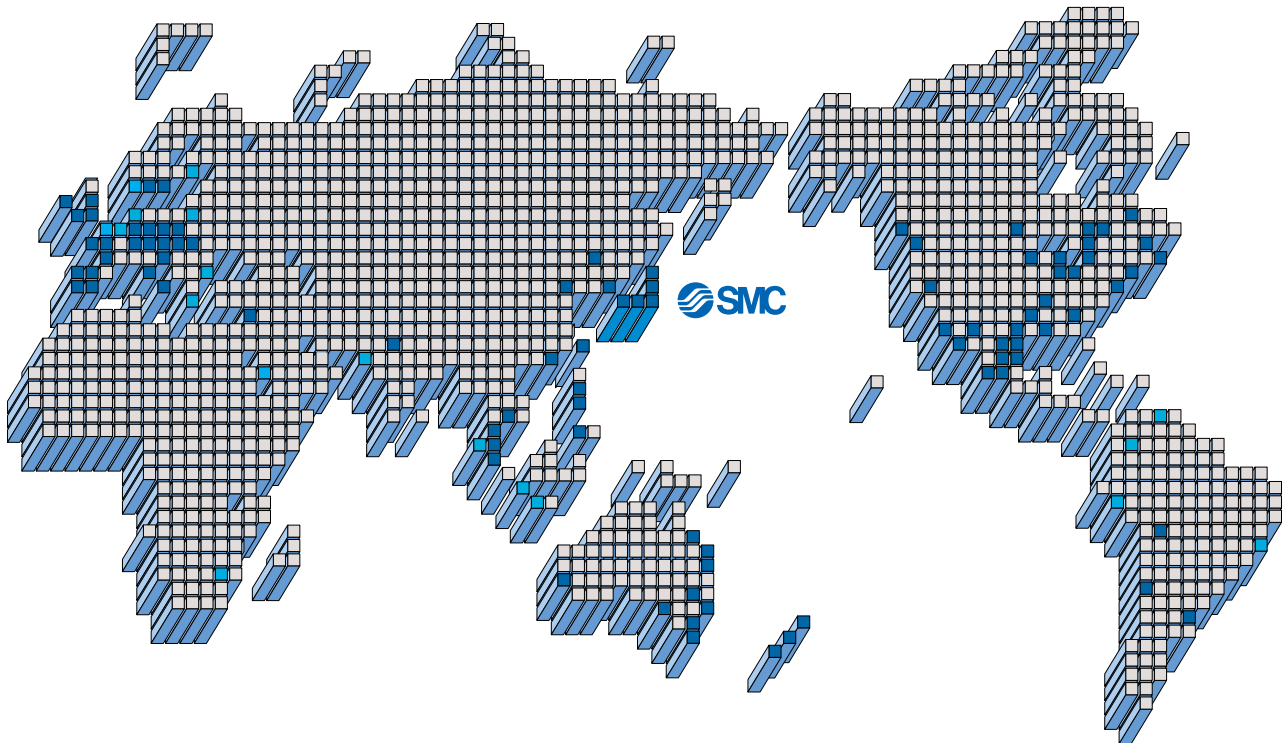
Caution

- 1. Power lines and high voltage lines should not be in the same piping or duct with wiring of the photo micro sensor, as the system may malfunction or be damaged due to induction. Separate wiring or individual piping is required to avoid such trouble.**
- 2. If operating with a small induction load such as a relay, wire as shown in the figure below. (In this case, be sure to connect a reverse voltage suppression diode.)**





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SMC Corporation

1-16-4 Shimbashi, Minato-ku, Tokyo 105-8659 JAPAN

Tel: 03-3502-2740 Fax: 03-3508-2480

URL <http://www.smcworld.com>

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This catalog is printed on recycled paper with concern for the global environment.

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

Printed in Japan.



e-Rodless Actuator

- New**
- Remote control type
 - 5-point stoppable type has been added.

Integrated control type

Remote control type

Positioning repeatability

Both ends: ± 0.01 mm
 Intermediate: ± 0.1 mm



Cam follower guide type
Series E-MY2C
 High precision guide type
Series E-MY2H

No programming required

Realizing electric controllability similar to that of an air cylinder by 3 step operation



Stroke adjustment

- 1 Movable stroke adjusting unit
- 2 Small incremental adjustments can be made by using an adjusting bolt

Auto operation
 Possible to operate by using the same signals as those for a solenoid valve (with a PLC)

Stroke learning

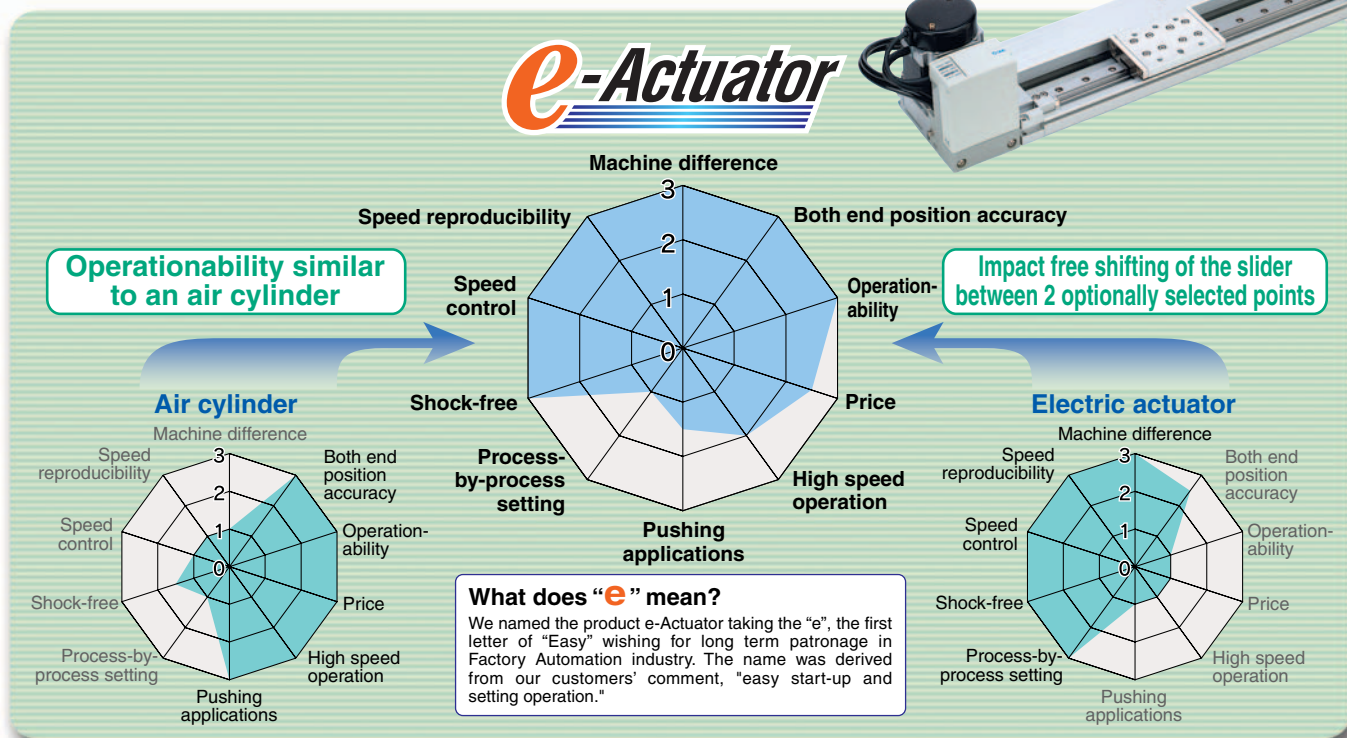
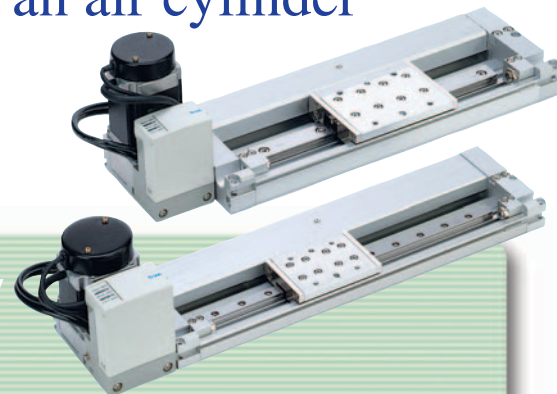
Press STROKE STUDY switch

Speed and acceleration setting

Adjust SPEED, ACCELERATION

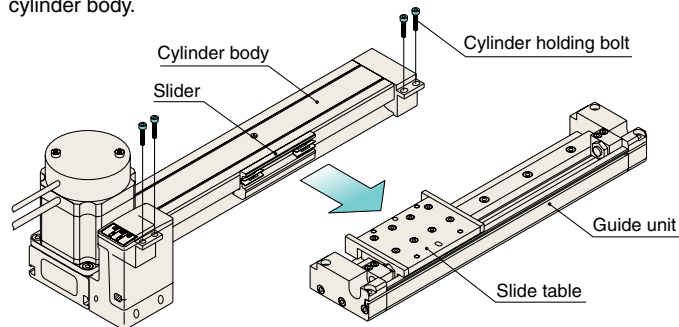
Having both the operationability of an air cylinder and the speed controllability of an electric actuator

New actuator concept

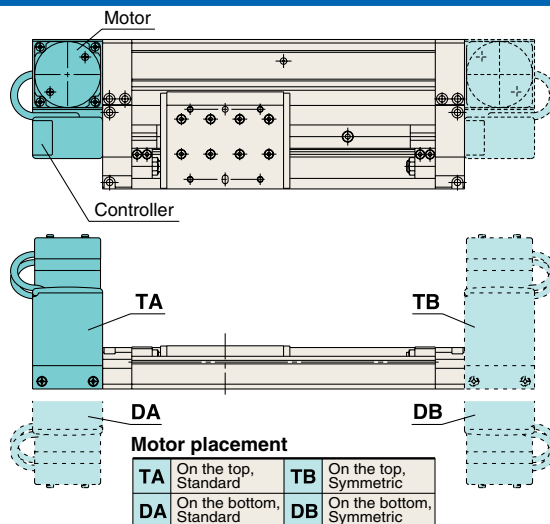


Easy Maintenance

The actuating part and the guide unit can be separated from the cylinder body.



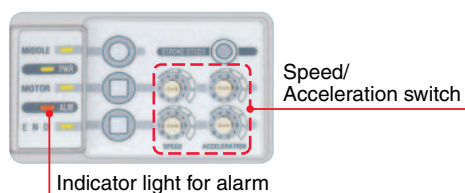
Motor Placement: Mounting position of the motor is user selectable and can either be on the top, bottom, left, or right of the actuator.



New Locking Functions

Settings for speed/acceleration can be locked. If the speed/acceleration switch is changed in the middle of locking, the alarm light will blink. However, the motion will continue in accordance with the preprogrammed settings.

* Settings for locking a stroke and intermediate position are not applicable.



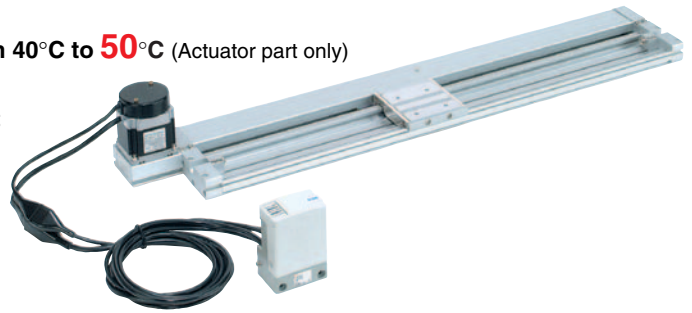
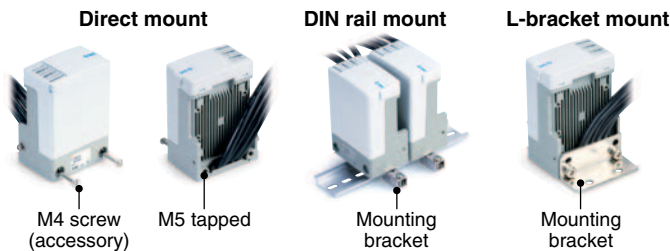
Manual Operation Is Possible.



New Remote Control Type

Easy to reset after installation as a result of the remote controller. Suited for installing where it is difficult to reach because the controller can be operated in an easily accessible location.

- Cable length is selectable from 1 m, 3 m and 5 m
- Improvement in the maximum operating temperature from 40°C to 50°C (Actuator part only)
- Mounting method can be selected among 3 types



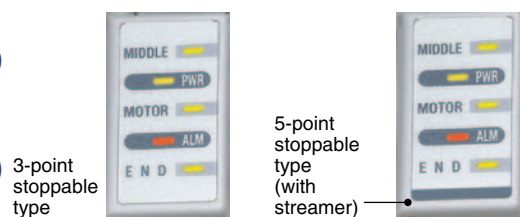
Intermediate Stop Is Possible.

3-point stoppable type (2-point for both ends and 1-point for an intermediate stop)

One intermediate stop is possible beside stops at both ends.

New 5-point stoppable type (2-point for both ends and 3-point for an intermediate stop)

5-point positioning is possible at any preferred locations.



New Stop Functions by External Inputs (5-point stoppable type only)

Stop command by an external input such as a PLC or PC makes it possible to decelerate or stop a slider (as programmed).

Repeatability of stop functions by external stop

Travelling speed (mm/s)	100	500	1000
Repeatability (mm)	±0.5	±1.0	±2.0

Note) The valves shown are to be used as a selection guide and are not guaranteed.

Application example 1

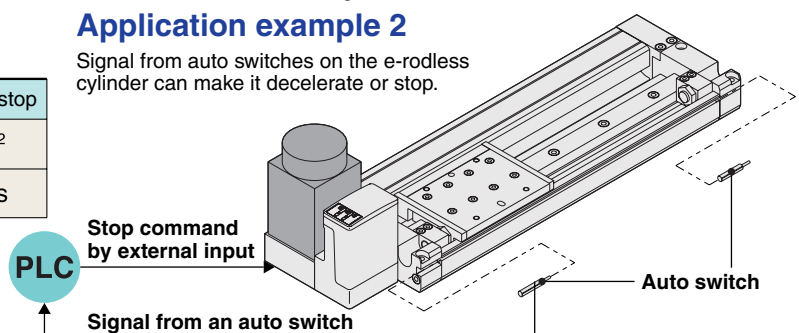
Quick start-up is possible after stopping.

Stop method	Stop by external inputs	Emergency stop
Stopping acceleration (deceleration speed)	Value of a switch for setting acceleration	4.9 m/s ²
Initial motion speed after stopping	Value of a switch for speed	50 mm/s

* Settings for emergency acceleration and speed cannot be changed.

Application example 2

Signal from auto switches on the e-rodless cylinder can make it decelerate or stop.



How to Reset Alarm

- Alarm reset by external input such as PLC, PC etc. Alarm occurring in the e-rodless actuator can be reset by the controller.
- Alarm reset manually by controller
* Perform an alarm reset after the probable cause of the alarm has been removed.

Variations

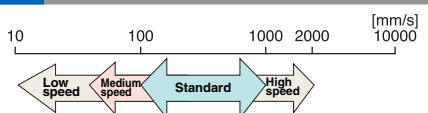
Series	E-MY2C		E-MY2H	
Guide type	Cam follower guide		High precision guide	
Controller type	Integrated controller/Remote controller			
Nominal size	16	25	16	25
Payload (kg)	5	10	5	10
Stroke (mm)	50 to 1000 (Available in 1 mm increments.)			

Made-to-Order

For details, consult with SMC.

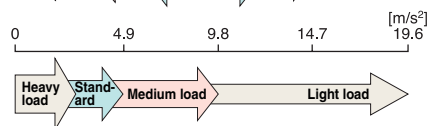
● Speed changes

Low/High speed is possible.



● Max. acceleration changes

Low acceleration, heavy load is possible. High acceleration, light load is possible.



● Light load improvement against a moment

2-axis guide specification (equivalent to MY2HT)

● 6-point stoppable type

Stoppable at both ends (2-point) and at intermediate strokes (4-point)

Series E-MY2

Model Selection 1

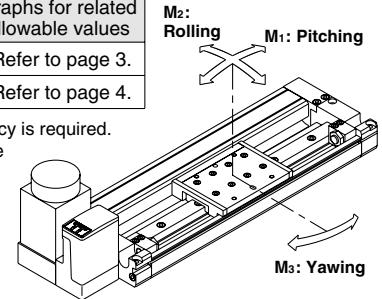
The following are steps for selecting the E-MY2 series best suited for your application.

Guideline for Determining the Cylinder Model Temporarily

Cylinder model	Guide type	Slide table general accuracy	Graphs for related allowable values
E-MY2C	Cam follower guide type	Slide table accuracy approx. ± 0.05 mm <small>Note 2)</small>	Refer to page 3.
E-MY2H	High precision guide type (Single axis)	Slide table accuracy of ± 0.05 mm or less required <small>Note 2)</small>	Refer to page 4.

Note 1) Use as a guide for determining the slide table accuracy required. Consult with SMC when guaranteed accuracy is required.

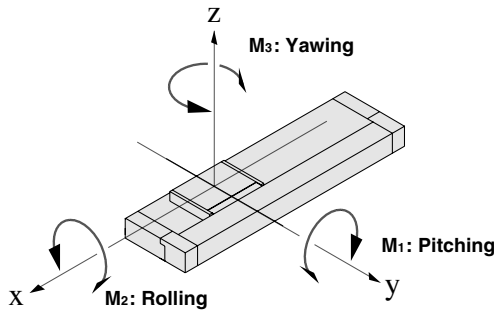
Note 2) Accuracy indicates displacement of the table (at stroke end) when 50% of the allowable moment shown in the catalog is applied. (reference value)



Types of Moment Applied to Rodless Cylinders

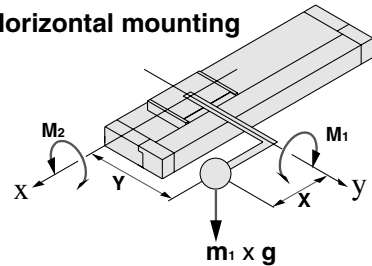
Multiple moments may be generated depending on the mounting orientation, load, and position of the center of gravity.

Coordinates and moments

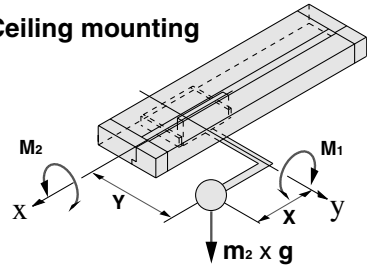


Static moment

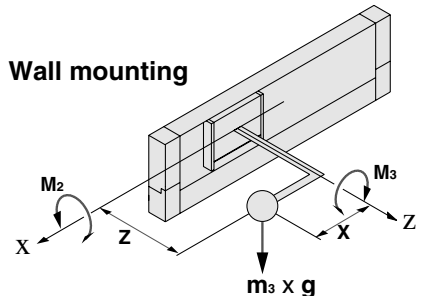
Horizontal mounting



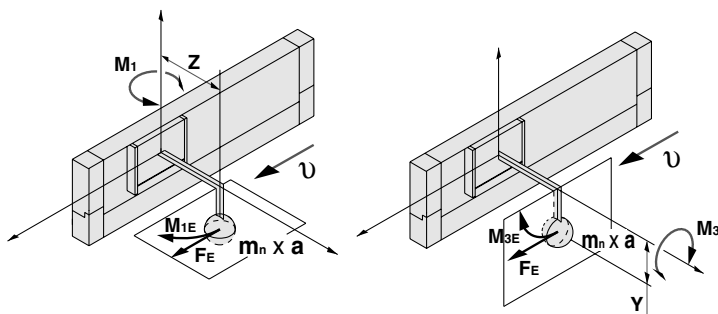
Ceiling mounting



Wall mounting



Dynamic moment



a: Set acceleration degree, **v:** Set speed

Mounting orientation	Horizontal mounting	Ceiling mounting	Wall mounting
Dynamic load (F_E)	$m_n \times a$		
Dynamic moment	M_{1E}	$\frac{1}{3} \times F_E \times Z$	
	M_{2E}	Dynamic moment M_{2E} does not occur.	
	M_{3E}	$\frac{1}{3} \times F_E \times Y$	

Note) Regardless of the mounting orientation, dynamic moment is calculated with the formulas above.

Mounting orientation	Horizontal mounting	Ceiling mounting	Wall mounting
Static load (m)	m_1	m_2	m_3
Static moment	M_1	$m_1 \times g \times X$	$m_2 \times g \times X$
	M_2	$m_1 \times g \times Y$	$m_2 \times g \times Y$
	M_3	—	$m_3 \times g \times X$

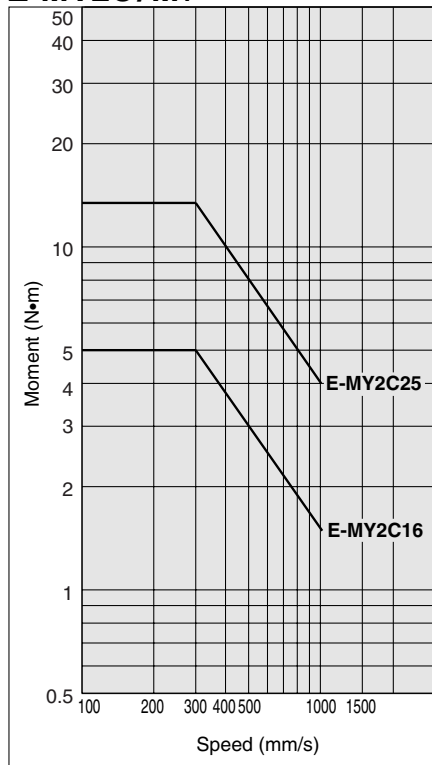
g: Gravitational acceleration (9.8 m/s²)

Series E-MY2

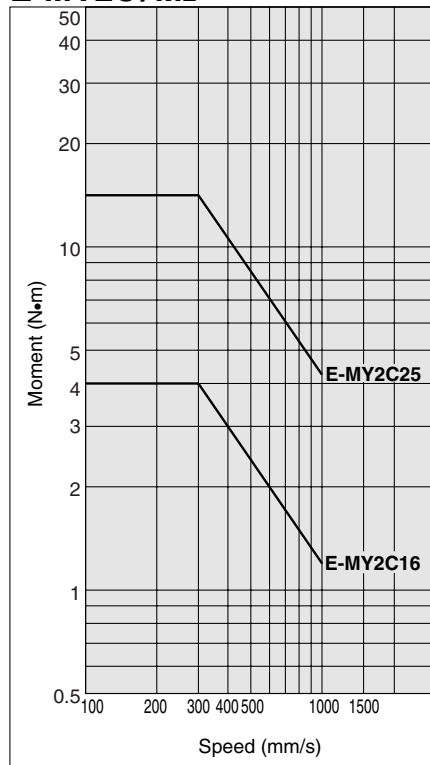
Maximum Allowable Moment/Maximum Load Weight

Moment / E-MY2C

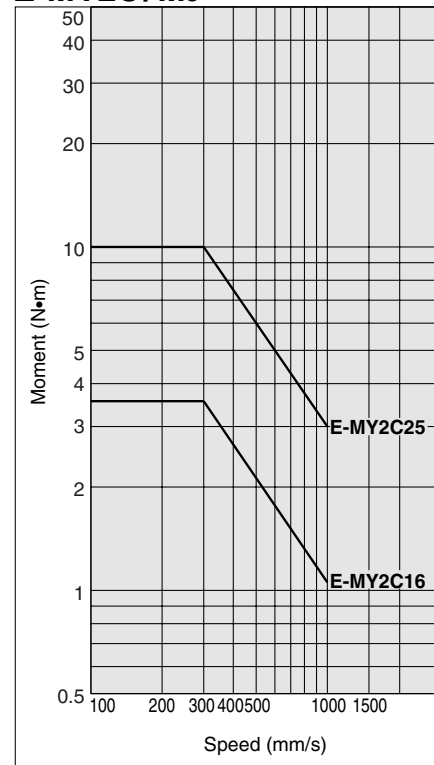
E-MY2C/M1



E-MY2C/M2

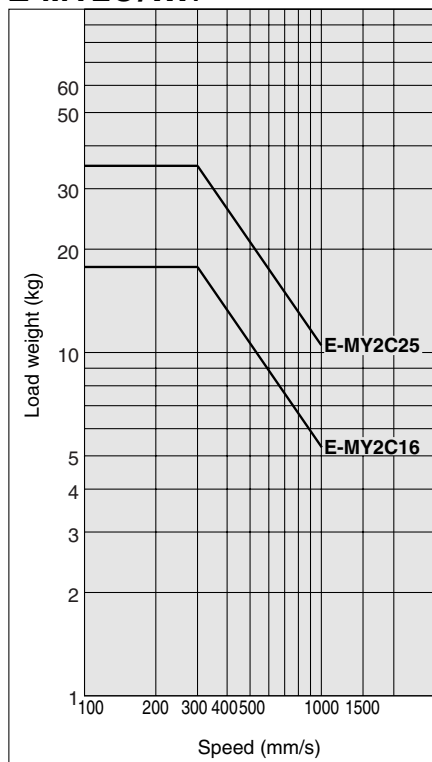


E-MY2C/M3

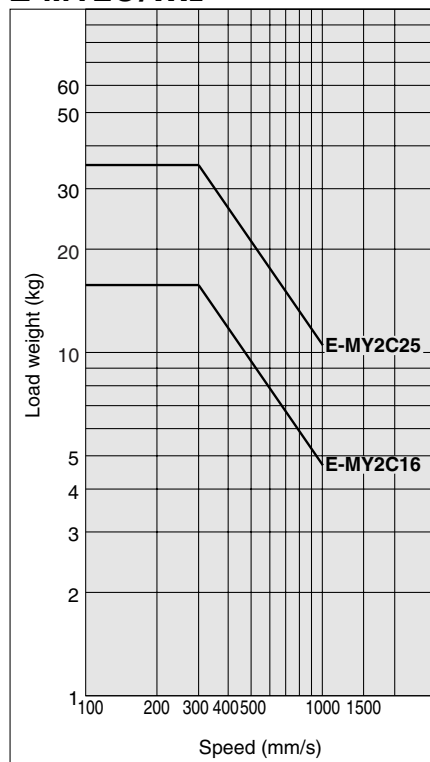


Load Weight / E-MY2C

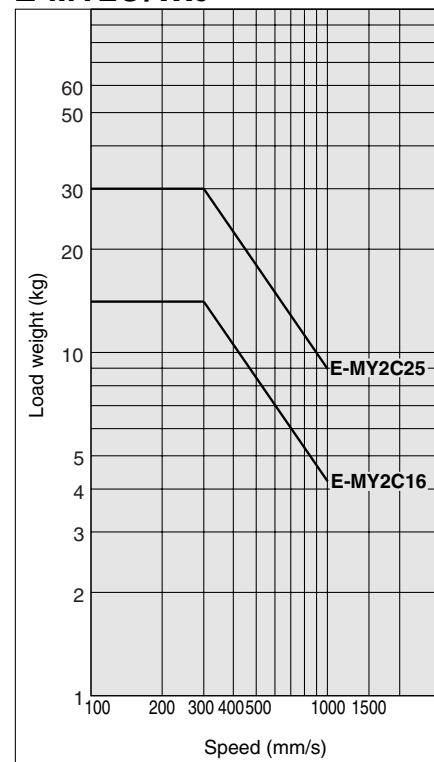
E-MY2C/m1



E-MY2C/m2

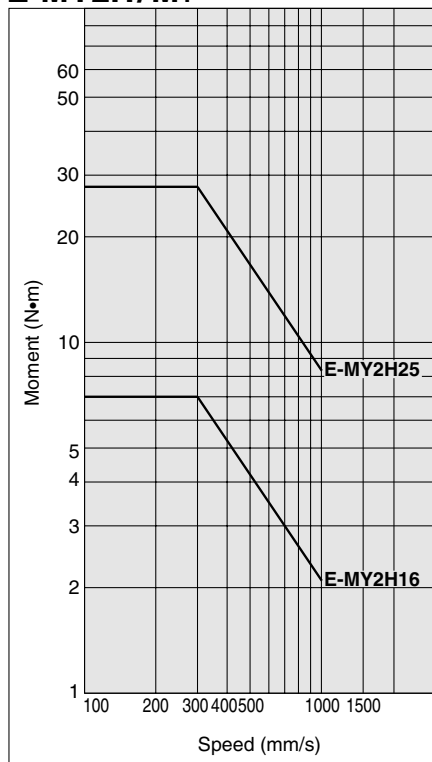


E-MY2C/m3

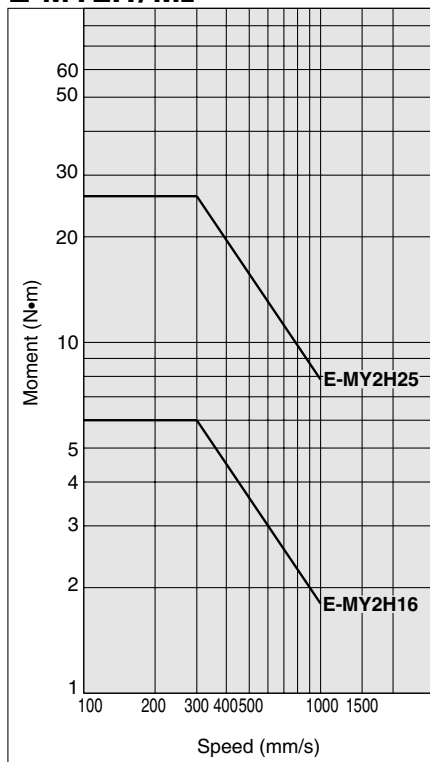


Moment / E-MY2H

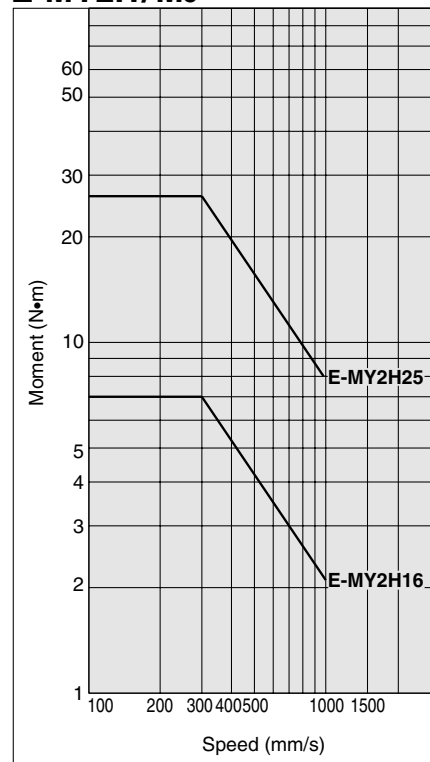
E-MY2H/M1



E-MY2H/M2

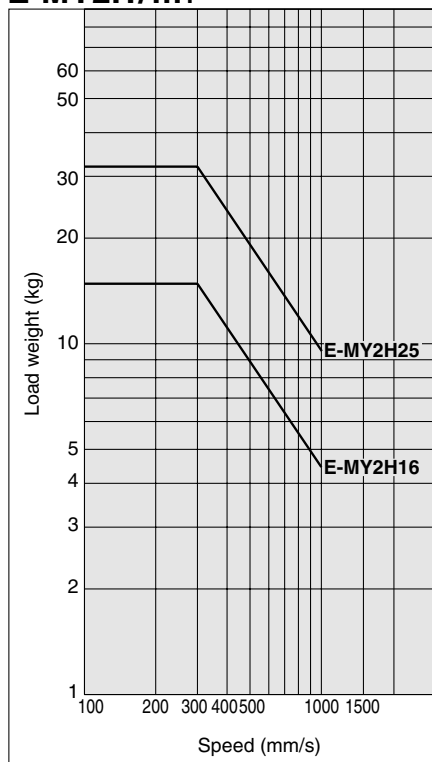


E-MY2H/M3

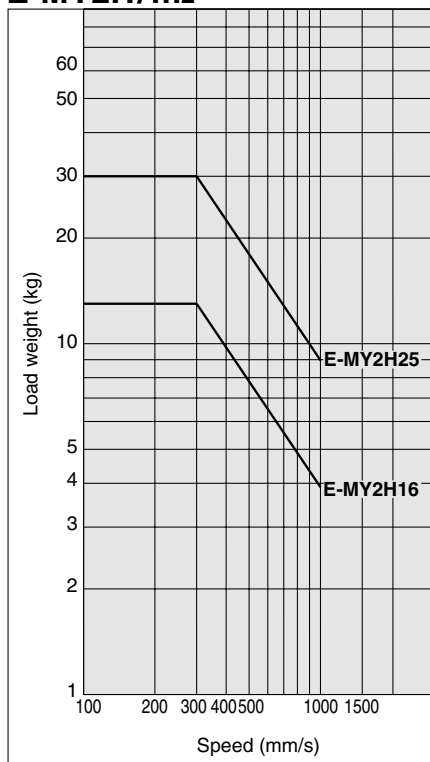


Load Weight / E-MY2H

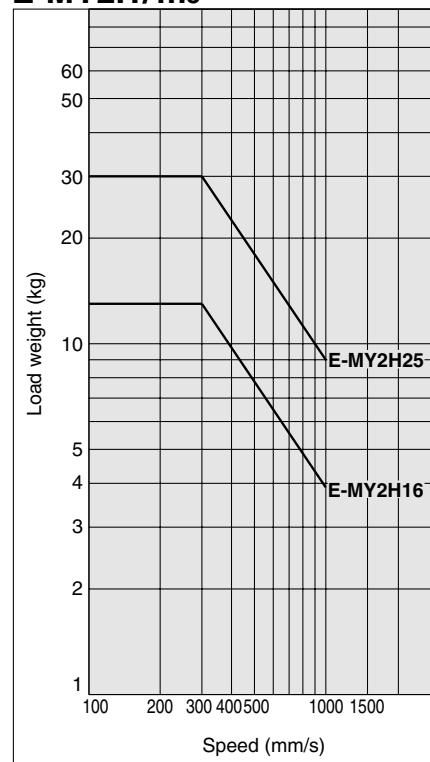
E-MY2H/m1



E-MY2H/m2



E-MY2H/m3



Series E-MY2 Model Selection 2

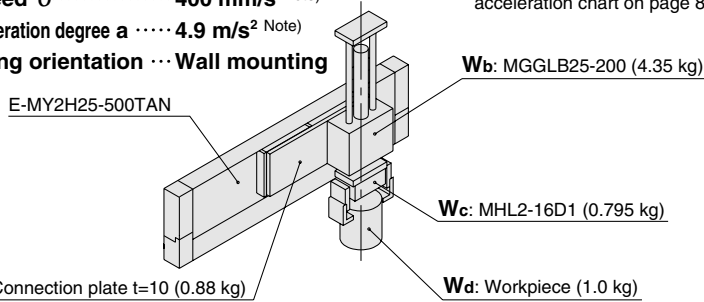
The following are steps for selection the E-MY2 series best suited for your application.

Calculation of Guide Load Factor

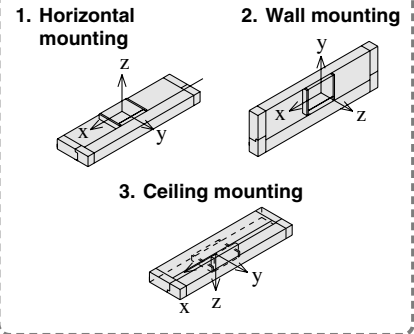
1 Operating Conditions

Operating cylinder E-MY2H25-500
 Set speed v 400 mm/s Note)
 Set acceleration degree a 4.9 m/s² Note)
 Mounting orientation ... Wall mounting

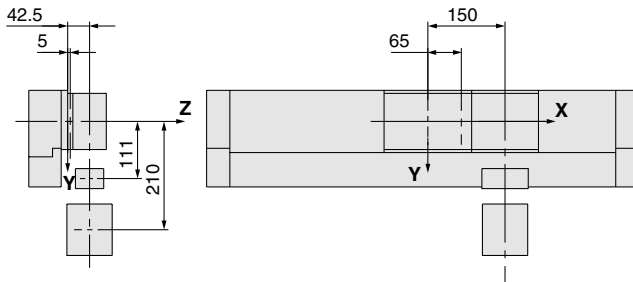
Note) Regarding the speed and acceleration setting, select from the speed/acceleration chart on page 8.



Mounting Orientation



2 Load Blocking



Weight and Center of Gravity for Each Workpiece

Work piece no. (Wn)	Weight (mn)	Center of gravity		
		X-axis Xn	Y-axis Yn	Z-axis Zn
Wa	0.88 kg	65 mm	0 mm	5 mm
Wb	4.35 kg	150 mm	0 mm	42.5 mm
Wc	0.795 kg	150 mm	111 mm	42.5 mm
Wd	1.0 kg	150 mm	210 mm	42.5 mm

n = a, b, c, d

3 Calculation of Composite Center of Gravity

$$m_3 = \sum m_n = 0.88 + 4.35 + 0.795 + 1.0 = 7.025 \text{ kg}$$

$$X = \frac{1}{m_3} \times \sum (m_n \times X_n) = \frac{1}{7.025} (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 1.0 \times 150) = 139.4 \text{ mm}$$

$$Y = \frac{1}{m_3} \times \sum (m_n \times Y_n) = \frac{1}{7.025} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 1.0 \times 210) = 42.5 \text{ mm}$$

$$Z = \frac{1}{m_3} \times \sum (m_n \times Z_n) = \frac{1}{7.025} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 1.0 \times 42.5) = 37.8 \text{ mm}$$

4 Calculation of Load Factor for Static Load

m₃: Weight

$m_3 \text{ max (from 1 of graph MY2H / } m_3) = 22.5 \text{ (kg)}$

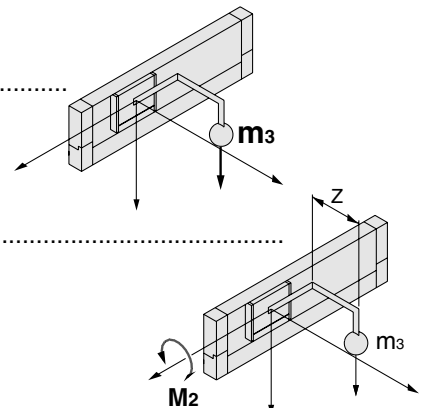
Load factor $\alpha_1 = m_3 / m_3 \text{ max} = 7.025 / 22.5 = 0.31$

M₂: Moment

$M_2 \text{ max (from 2 of graph MY2H / } M_2) = 19.5 \text{ (N}\cdot\text{m)}$

$M_2 = m_3 \times g \times Z = 7.025 \times 9.8 \times 37.8 \times 10^{-3} = 2.60 \text{ (N}\cdot\text{m)}$

Load factor $\alpha_2 = M_2 / M_2 \text{ max} = 2.60 / 19.5 = 0.13$



Series E-MY2

Model Selection 3

The following are steps for selecting the E-MY2 series best suited for your application.

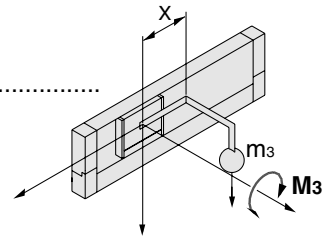
Calculation of Guide Load Factor

M₃: Moment

$$M_3 \text{ max (from 3 of graph MY2H / } M_3) = 19.5 \text{ (N}\cdot\text{m) } \dots\dots\dots$$

$$M_3 = m_3 \times g \times X = 7.025 \times 9.8 \times 139.4 \times 10^{-3} = 9.59 \text{ (N}\cdot\text{m)}$$

$$\text{Load factor } \alpha_3 = M_3 / M_3 \text{ max} = 9.59 / 19.5 = \mathbf{0.49}$$



5 Calculation of Load Factor for Dynamic Moment

Load F_E at acceleration and deceleration

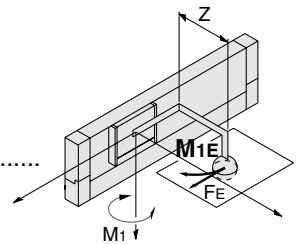
$$F_E = m \times a = 7.025 \times 4.9 = 34.42 \text{ (N)}$$

M_{1E}: Moment

$$M_{1E} \text{ max (from 4 of graph MY2H / } M_1) = 21.0 \text{ (N}\cdot\text{m) } \dots\dots\dots$$

$$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 34.42 \times 37.8 \times 10^{-3} = 0.43 \text{ (N}\cdot\text{m)}$$

$$\text{Load factor } \alpha_4 = M_{1E} / M_{1E} \text{ max} = 0.43 / 21.0 = \mathbf{0.02}$$

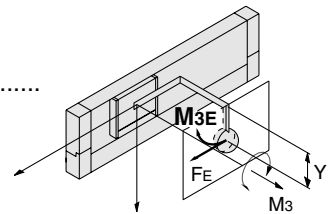


M_{3E}: Moment

$$M_{3E} \text{ max (from 5 of graph MY2H / } M_3) = 19.5 \text{ (N}\cdot\text{m) } \dots\dots\dots$$

$$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 34.42 \times 42.5 \times 10^{-3} = 0.49 \text{ (N}\cdot\text{m)}$$

$$\text{Load factor } \alpha_5 = M_{3E} / M_{3E} \text{ max} = 0.49 / 19.5 = \mathbf{0.03}$$



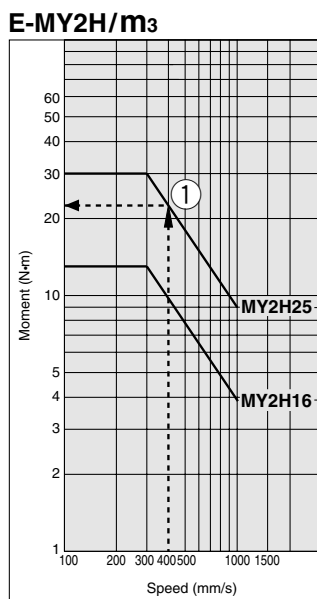
6 Sum and Examination of Guide Load Factors

$$\Sigma\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 = \mathbf{0.98} \leq 1$$

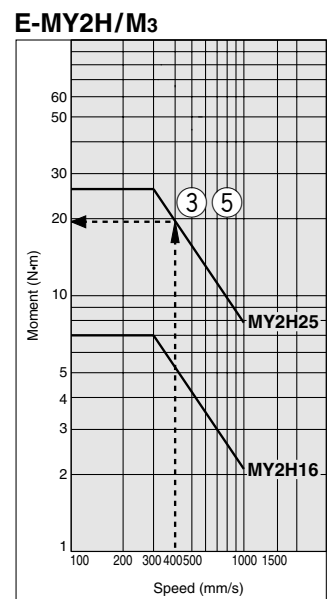
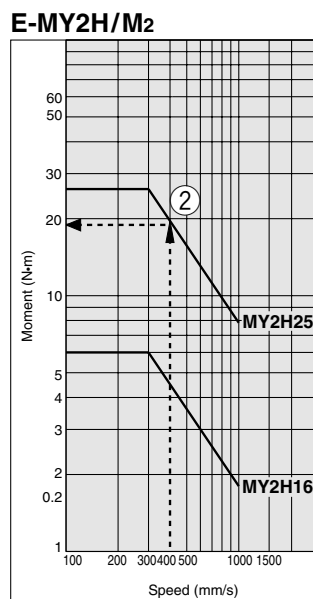
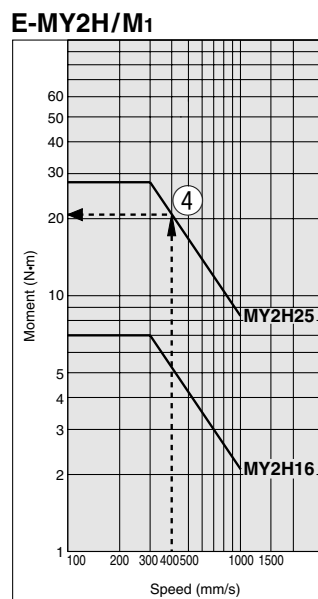
The above calculation is within the allowable value and therefore the selected model can be used.

In an actual calculation, when sum of guide load factors $\Sigma\alpha$ in the formula above is more than 1, consider decreasing the speed, increasing the bore size, or changing the product series.

Load Weight



Allowable Moment



e-Rodless Actuator

Series E-MY2C



Cam Follower Guide Type/Nominal Size: 16, 25

How to Order

Integrated control type E-MY2C 16 100 TA N [] M9B []

Remote control type E-MY2C 16 100 TA N [] M M9B [] []

Nominal size

16
25

Refer to "Standard Stroke" table.

Stroke

Refer to "Standard Stroke" table.

Motor placement

TA	On the top, Standard
DA	On the bottom, Standard
TB	On the top, Symmetric
DB	On the bottom, Symmetric

Output type

N	NPN
P	PNP

Number of stoppable positioning points

Nil	3-point stoppable type
A	5-point stoppable type

Cable length

M	1 m
L	3 m
Z	5 m

* The remote control type can be selected by adding the above symbols.

CE compliant

Nil	—
Q	CE marked

* No need to add a suffix for the integrated control type. It is provided with a CE compliant product.
* Noise filter is provided but not attached for the "Q" spec.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* Refer to the table below for auto switch model numbers.
* Auto switch is provided but not mounted at the time of shipment.

* Arrow mark shows handling side on controller.

Standard Stroke

Nominal size	Standard stroke (mm)
16, 25	100, 200, 300, 400, 500, 600, 700, 800, 900, 1000

* Strokes are manufacturable in increments of 1 mm, up to 1000 strokes.
* When exceeding a 1000 strokes, refer to "Made to Order" on page 26.

Applicable Auto Switches/For detailed auto switch specifications, refer to page 21 through to 25.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) *			Pre-wired connector	Applicable load		
					DC	AC	Electrical entry direction		0.5 (Nil)	3 (L)	5 (Z)		IC circuit	—	
							Perpendicular	In-line							
Reed switch	—	Grommet	Yes	3-wire (NPN equiv.)	—	5 V	—	A96V	A96	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	—	—	—	Relay PLC
						5 V, 12 V	100 V or less	A90V	A90	●	●	—	—	IC circuit	—
Solid state switch	Diagnostic indication (2-color display)	Grommet	Yes	3-wire (NPN)	24 V	5 V	—	M9NV	M9N	●	●	○	○	IC circuit	Relay PLC
				3-wire (PNP)		12 V		M9PV	M9P	●	●	○	○	IC circuit	
				2-wire		12 V		M9BV	M9B	●	●	○	○	—	
				3-wire (NPN)		5 V		F9NWV	F9NW	●	●	○	○	IC circuit	
				3-wire (PNP)		12 V		F9PWV	F9PW	●	●	○	○	IC circuit	
				2-wire		12 V		F9BWV	F9BW	●	●	○	○	—	

* Lead wire length symbols: 0.5 m Nil (Example) M9N
3 m L M9NL
5 m Z M9NZ

* Solid state switches marked "○" are produced upon receipt of order.



Made to Order
(For details, refer to page 26.)

Symbol	Specifications
-X168	Helical insert thread specifications

Weight

Actuator Part Unit: kg

Nominal size	Basic weight	50 mm stroke per additional weight
16	2.00	0.14
25	3.71	0.21

Remote Controller Part Unit: kg

Controller body	Cable length		
	1 m	3 m	5 m
0.24	0.09	0.24	0.39

How to calculate/Example: **E-MY2C25-300TANM**

Actuator part

Basic weight 3.71 kg
 Additional weight 0.21/50 st
 Actuator stroke 300 st
 $3.71 + 0.21 \times 300 \div 50 = 4.97$ kg

Remote controller part

Controller body 0.24 kg
 Cable length (3 m) 0.24 kg
 $0.24 + 0.24 = 0.48$ kg

* For an integrated control type, add 0.24 kg (controller body) to the basic weight.

Replacement Parts

Drive Unit Replacement Part No.

Model	E-MY2C
Nominal size	
16	E-MY2BH16- Stroke *
25	E-MY2BH25- Stroke *

* Specify the motor position and output style in * parts.
 For a remote control type, enter the symbol for cable length.
 Example) E-MY2BH16-300TAN

Option/Mounting Bracket

Description	Part no.
L-bracket	MYE-LB
DIN rail bracket	MYE-DB

Specifications

Model		E-MY2C	
Nominal size		16	25
Maximum load weight ^{Note)}		5 kg	10 kg
Transfer speed set range		100 to 1000 mm/s (By selection. Please refer to the table below.)	
Transfer speed acceleration set range		0.49 to 4.90 m/s ² (By selection. Please refer to the table below.)	
Acceleration and deceleration method		Trapezoidal drive	
Moving direction		Horizontal direction	
Positioning points	3-point stoppable type	Both ends (mechanical stoppers), 1 intermediate position	
	5-point stoppable type	Both ends (mechanical stoppers), 3 intermediate positions	
Repeated positioning stopping precision	Both ends	± 0.01 mm	
	Intermediate stopping position	± 0.1 mm	
Intermediate stopping point positioning method		Direct teaching, JOG teaching	
Positioning setting spot		Controller body	
Display		LED for power supply, LED for alarming, LED for positioning completion	
Input signal		Actuation command signal, Emergency stop input signal	
Output signal		Positioning completion signal, Emergency detection signal, Ready signal	

Note) The maximum load weight shows the motor ability. Please consider it together with the guide load factor when selecting a model.

Electrical Specifications

Driving voltage	Power supply voltage	24 VDC ± 10%
	Current consumption	Rated current 2.5 A (Max. 5 A: 2 s or less) at 24 VDC
Current consumption	Power supply voltage	24 VDC ± 10%
	Current consumption	30 mA at 24 VDC and Output load capacity
Input signal capacity		6 mA or less at 24 VDC/1 circuit (Photo coupler input)
Output signal capacity		30 VDC or less, 20 mA or less/1 circuit (Open drain output)
Emergency detection items		Emergency stop, Output deviation, Power supply deviation, Driving deviation, Temperature deviation, Stroke deviation, Motor deviation, Controller deviation

General Specifications

Operating temperature range	Integrated control type	5 to 40°C
	Remote control type	5 to 50°C
	Actuator part	5 to 40°C
Operating humidity range		35 to 85%RH (with no condensation)
Storage temperature range		-10 to 60°C (with no condensation and freezing)
Storage humidity range		35 to 85%RH (no condensation)
Withstand voltage		Between all of external terminals and the case: 1000 VAC for 1 minute
Insulation resistance		Between all of external terminals and the case: 50 MΩ (500 VDC)
Noise resistance		1000 Vp-p Pulse width 1 μs, Rise time 1 ns
CE marking	Integrated control type	Standard
	Remote control type	Available with -Q suffixed products only

Speed/Acceleration

Speed setting switch no.	Speed [mm/s]
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000

Note) The factory default setting for the switch is No.1 (100 mm/s).

Acceleration setting switch no.	Acceleration [m/s ²]
1	0.49
2	0.74
3	0.98
4	1.23
5	1.47
6	1.96
7	2.45
8	2.94
9	3.92
10	4.90

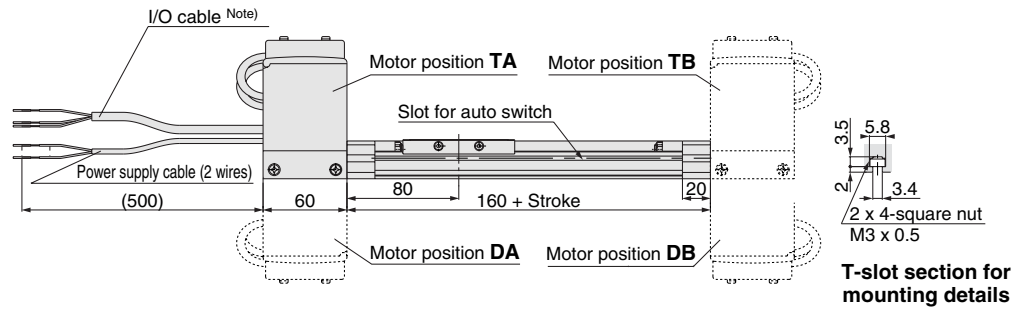
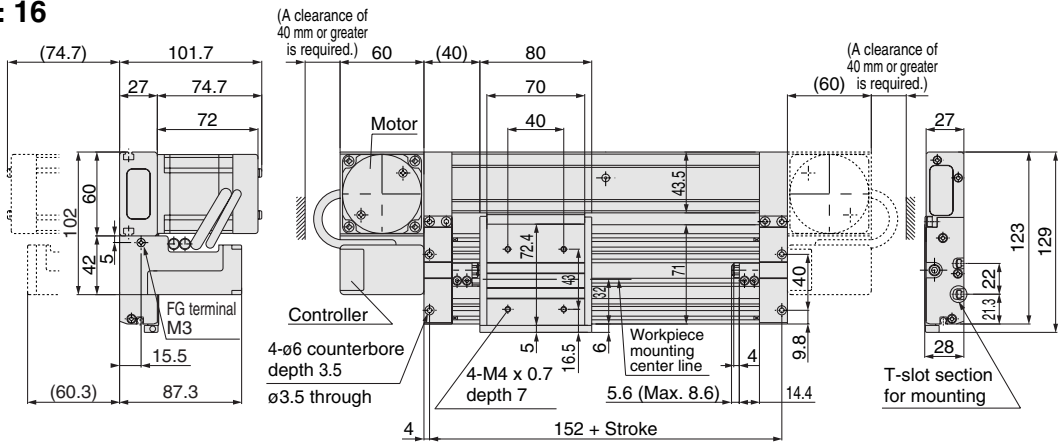
Note) The factory default setting for the switch is No.1 (0.49 m/s²).

Series E-MY2C

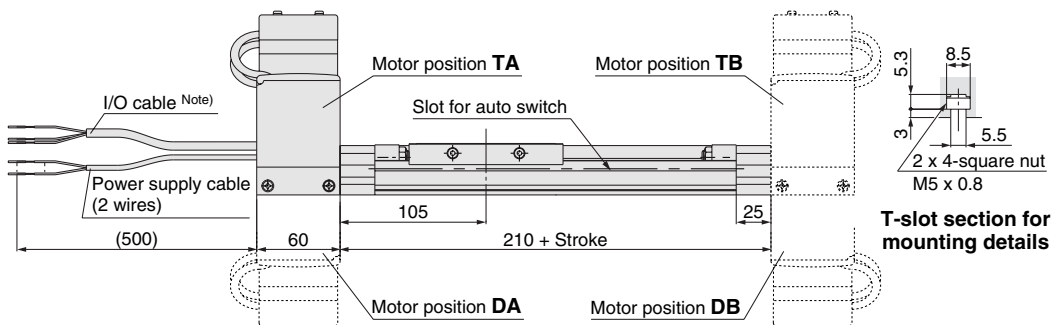
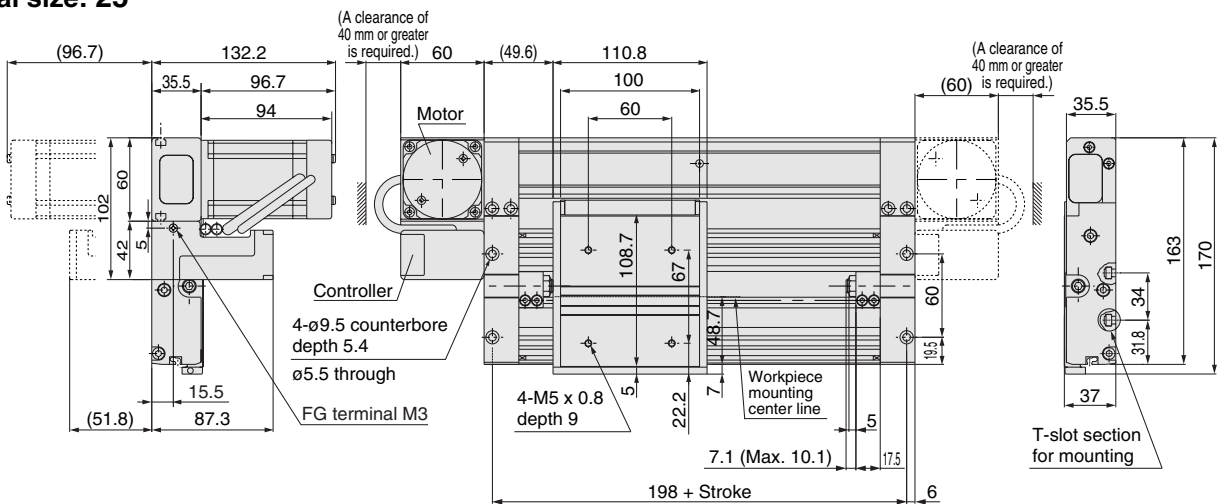
Dimensions: Integrated Control Type

E-MY2C **Nominal size** — **Stroke**

Nominal size: 16



Nominal size: 25

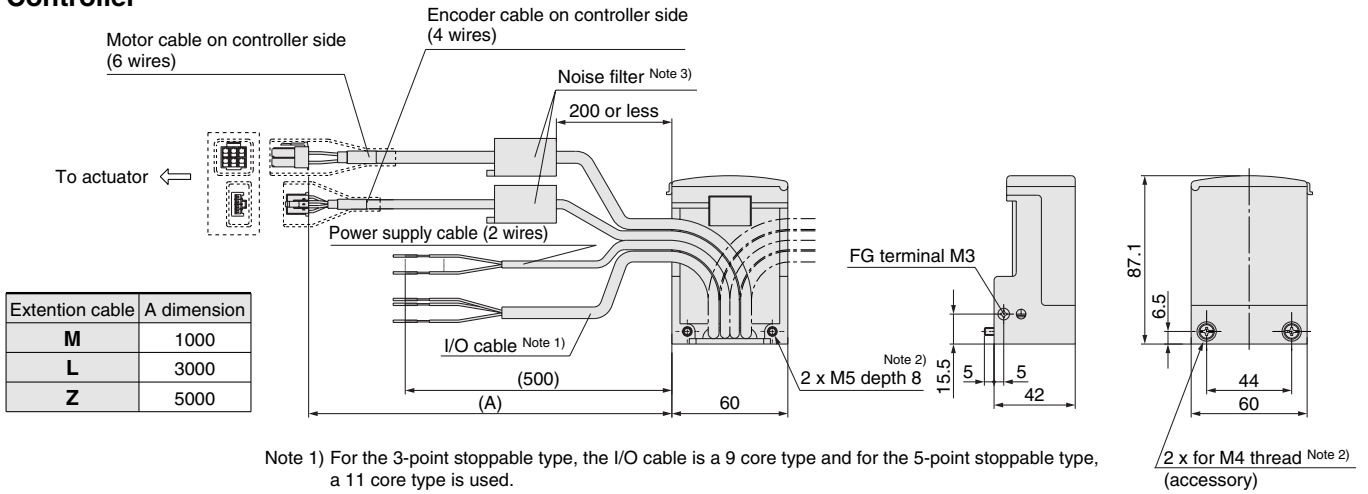


Note) For the 3-point stoppable type, the I/O cable is a 9 core type and for the 5-point stoppable type, a 11 core type is used.

Series E-MY2C

Dimensions: Remote Control Type (Remote controller part)

Controller

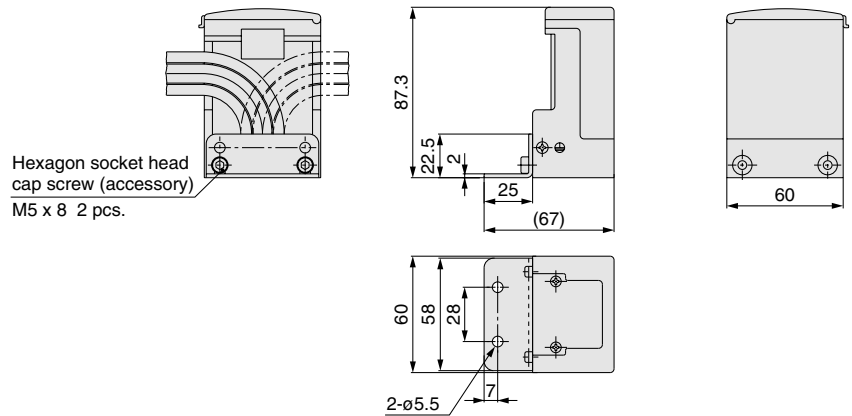


Note 1) For the 3-point stoppable type, the I/O cable is a 9 core type and for the 5-point stoppable type, a 11 core type is used.

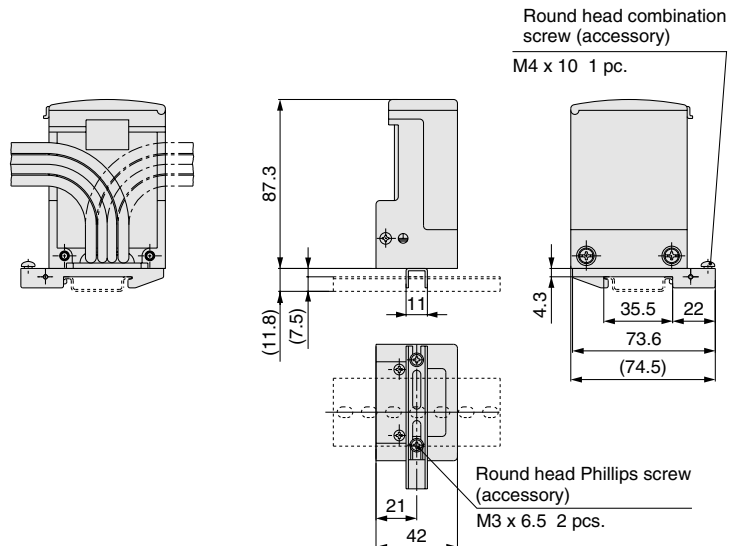
Note 2) When mounting the separated type controller, use the included M4 screw or use the M5 tap located on one side of the controller.

Note 3) When the CE compliant model is selected, a noise filter is included but not attached. The cable for the CE compliant models uses the dedicated shielding. Even if a noise filter is attached to a non CE marked product, the products cannot be changed to a CE compliant product.

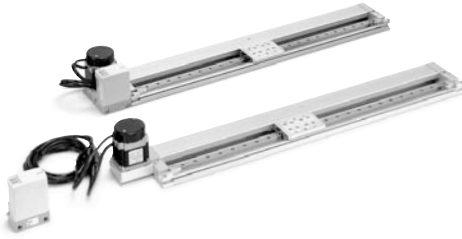
L-bracket/MYE-LB (Option)



DIN rail bracket/MYE-DB (Option)



Series E-MY2H



Made to Order
(For details, refer to page 26.)

Symbol	Specifications
-XB10	Intermediate stroke
-XB11	Long stroke
-X168	Helical insert thread specifications

Weight

Actuator Part Unit: kg

Nominal size	Basic weight	50 mm stroke per additional weight
16	1.87	0.14
25	3.37	0.23

Remote Controller Part Unit: kg

Controller body	Cable length		
	1 m	3 m	5 m
0.24	0.09	0.24	0.39

How to calculate/Example: E-MY2H25-300TANM

Actuator part

Basic weight 3.37 kg
 Additional weight 0.23/50 st
 Actuator stroke 300 st
 $3.37 + 0.23 \times 300 \div 50 = 4.75$ kg

Remote controller part

Controller body 0.24 kg
 Cable length (3 m) 0.24 kg
 $0.24 + 0.24 = 0.48$ kg

* For an integrated control type, add 0.24 kg (controller body) to the basic weight.

Replacement Parts

Drive Unit Replacement Part No.

Model	E-MY2H
Nominal size	
16	E-MY2BH16- <input type="text"/> Stroke *
25	E-MY2BH25- <input type="text"/> Stroke *

* Specify the motor position and output style in * parts.
 For a remote control type, enter the symbol for cable length.
 Example) E-MY2BH16-300TAN

Option/Mounting Bracket

Description	Part no.
L-bracket	MYE-LB
DIN rail bracket	MYE-DB

Specifications

Model		E-MY2H	
Nominal size		16	25
Maximum load weight ^{Note)}		5 kg	10 kg
Transfer speed set range		100 to 1000 mm/s (By selection. Please refer to the table below.)	
Transfer speed acceleration set range		0.49 to 4.90 m/s ² (By selection. Please refer to the table below.)	
Acceleration and deceleration method		Trapezoidal drive	
Moving direction		Horizontal direction	
Positioning points	3-point stoppable type	Both ends (mechanical stoppers), 1 intermediate position	
	5-point stoppable type	Both ends (mechanical stoppers), 3 intermediate positions	
Repeated positioning stopping precision	Both ends	± 0.01 mm	
	Intermediate stopping position	± 0.1 mm	
Intermediate stopping point positioning method		Direct teaching, JOG teaching	
Positioning setting spot		Controller body	
Display		LED for power supply, LED for alarming, LED for positioning completion	
Input signal		Actuation command signal, Emergency stop input signal	
Output signal		Positioning completion signal, Emergency detection signal, Ready signal	

Note) The maximum load weight shows the motor ability. Please consider it together with the guide load factor when selecting a model.

Electrical Specifications

Driving voltage	Power supply voltage	24 VDC ± 10%
	Current consumption	Rated current 2.5 A (Max. 5 A: 2 s or less) at 24 VDC
Current consumption	Power supply voltage	24 VDC ± 10%
	Current consumption	30 mA at 24 VDC and Output load capacity
Input signal capacity		6 mA or less at 24 VDC/1 circuit (Photo coupler input)
Output signal capacity		30 VDC or less, 20 mA or less/1 circuit (Open drain output)
Emergency detection items		Emergency stop, Output deviation, Power supply deviation, Driving deviation, Temperature deviation, Stroke deviation, Motor deviation, Controller deviation

General Specifications

Operating temperature range	Integrated controller type	5 to 40°C
	Remote control type	5 to 50°C
	Actuator part	5 to 40°C
Operating humidity range		35 to 85%RH (with no condensation)
Storage temperature range		-10 to 60°C (with no condensation and freezing)
Storage humidity range		35 to 85%RH (no condensation)
Withstand voltage		Between all of external terminals and the case: 1000 VAC for 1 minute
Insulation resistance		Between all of external terminals and the case: 50 MΩ (500 VDC)
Noise resistance		1000 Vp-p Pulse width 1 μs, Rise time 1 ns
CE marking	Integrated control type	Standard
	Remote control type	Available for suffix -Q only

Speed/Acceleration

Speed setting switch no.	Speed [mm/s]
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000

Note) The factory default setting for the switch is No.1 (100 mm/s).

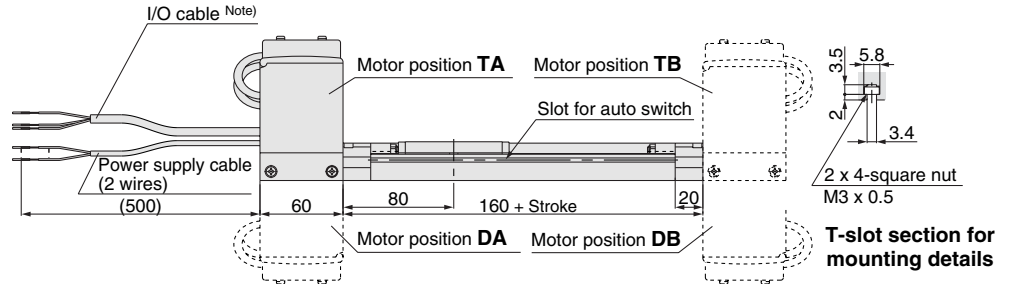
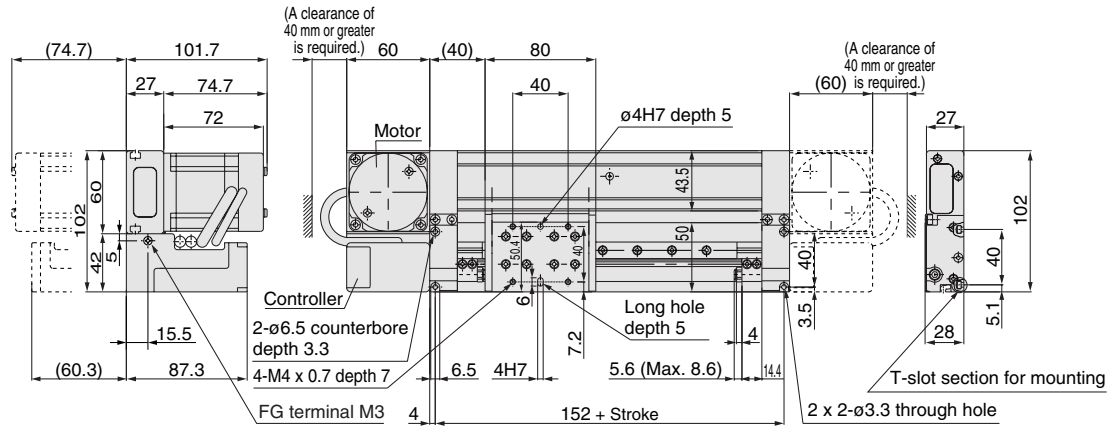
Acceleration setting switch no.	Acceleration [m/s ²]
1	0.49
2	0.74
3	0.98
4	1.23
5	1.47
6	1.96
7	2.45
8	2.94
9	3.92
10	4.90

Note) The factory default setting for the switch is No.1 (0.49 m/s²).

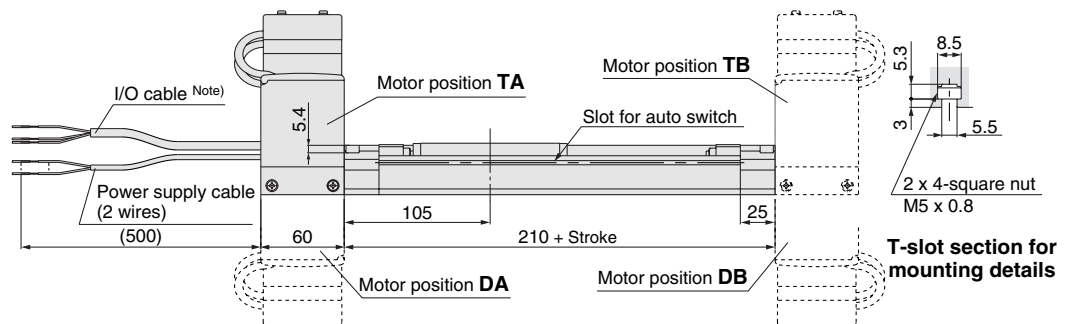
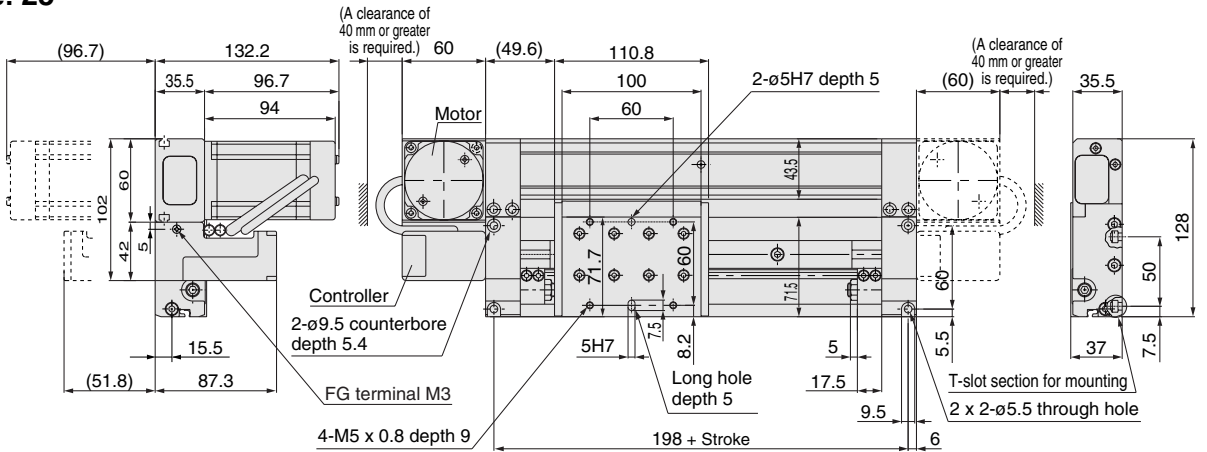
Dimensions: Integrated Control Type

E-MY2H Nominal size Stroke

Nominal size: 16



Nominal size: 25



Note) For the 3-point stoppable type, the I/O cable is a 9 core type and for the 5-point stoppable type, a 11 core type is used.

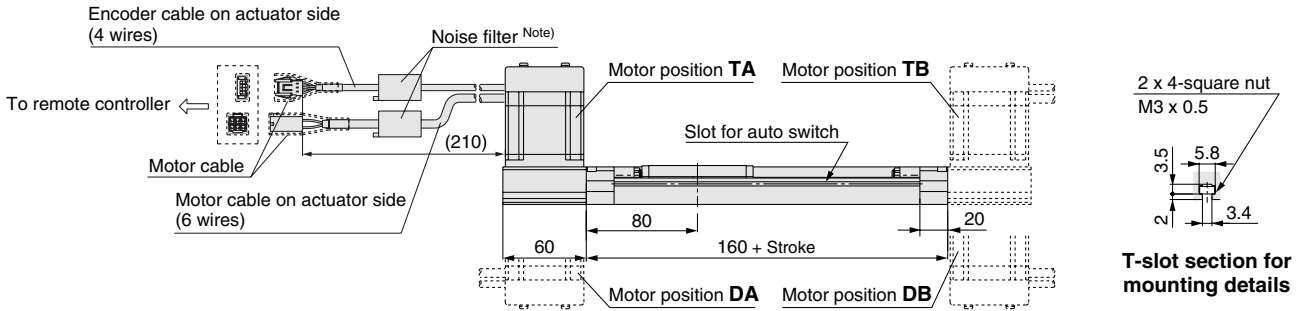
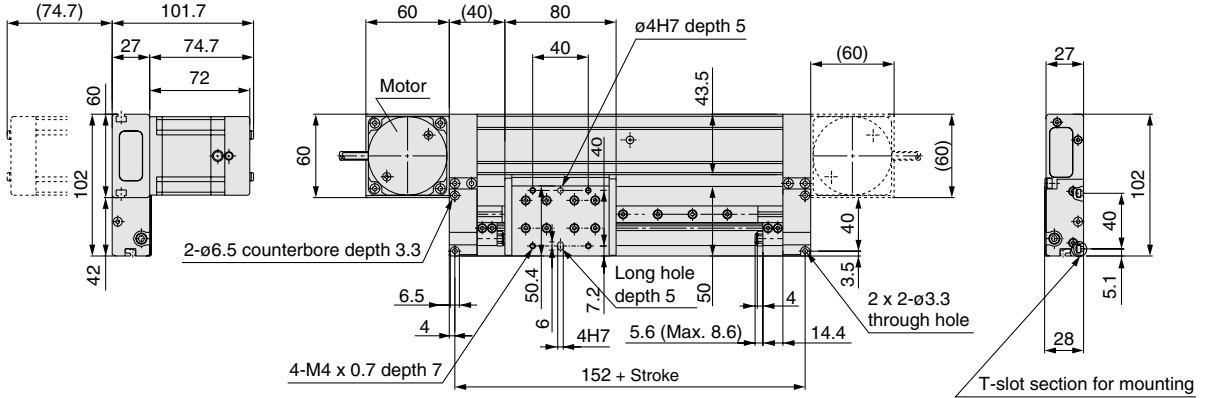
Series E-MY2H

Dimensions: Remote Control Type (Actuator part)

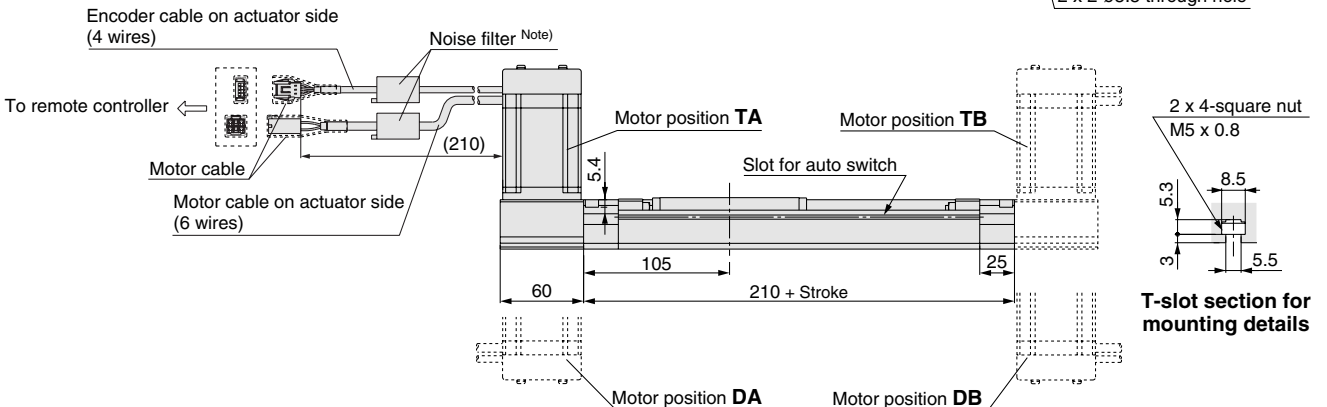
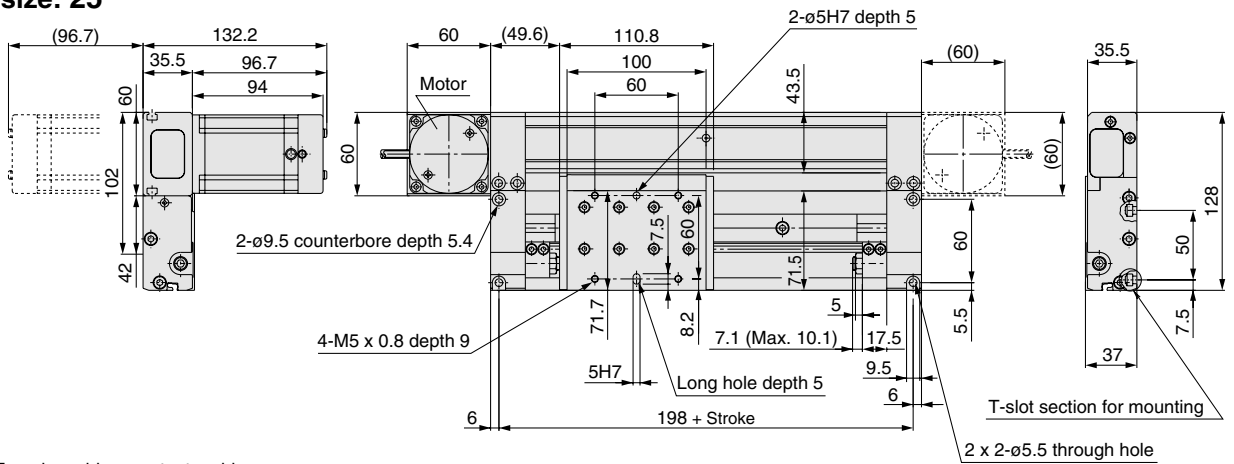
E-MY2H Nominal size Stroke M L Z

* Refer to page 16 for dimensions of remote controller.

Nominal size: 16



Nominal size: 25

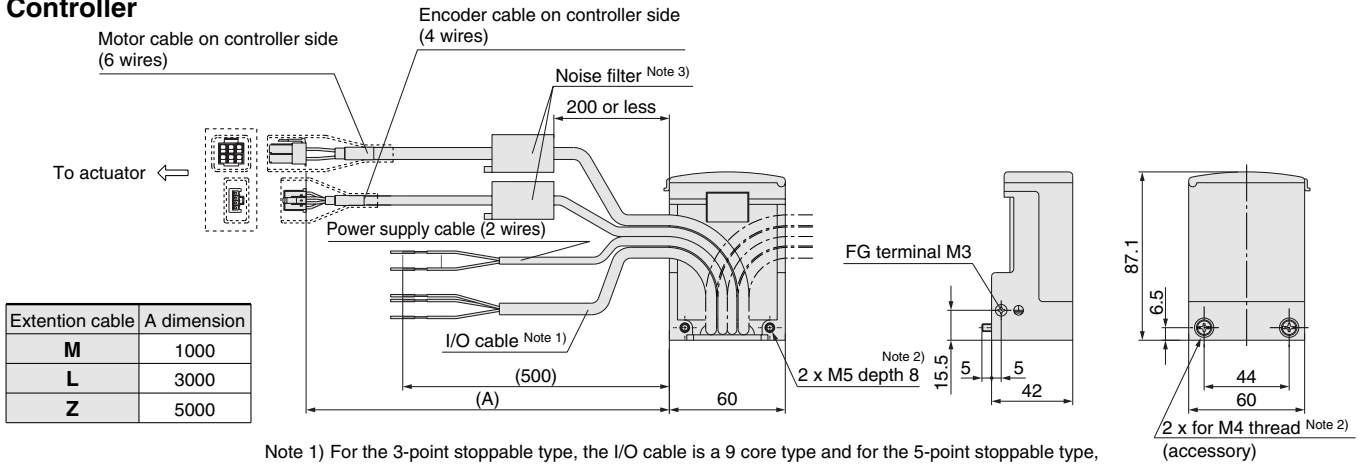


Note) When the CE compliant model is selected, a noise filter is provided but not attached.

The cable for the CE compliant models uses the dedicated shielding. Even if a noise filter is attached to a non CE marked products, the products cannot be changed to a CE compliant product.

Dimensions: Remote Control Type (Remote controller part)

Controller

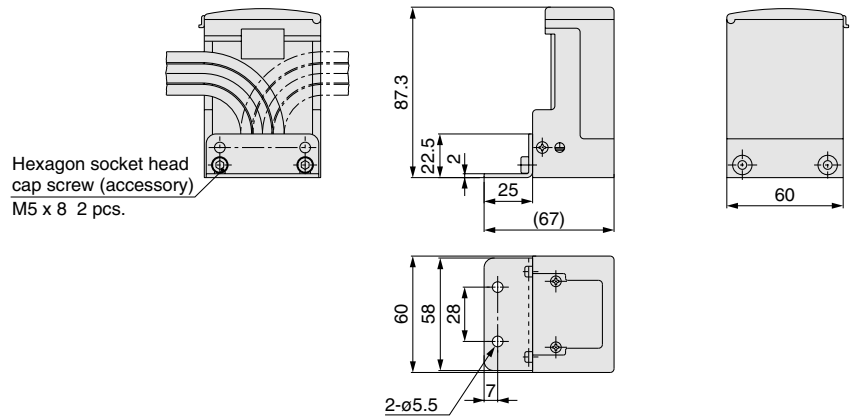


Note 1) For the 3-point stoppable type, the I/O cable is a 9 core type and for the 5-point stoppable type, a 11 core type is used.

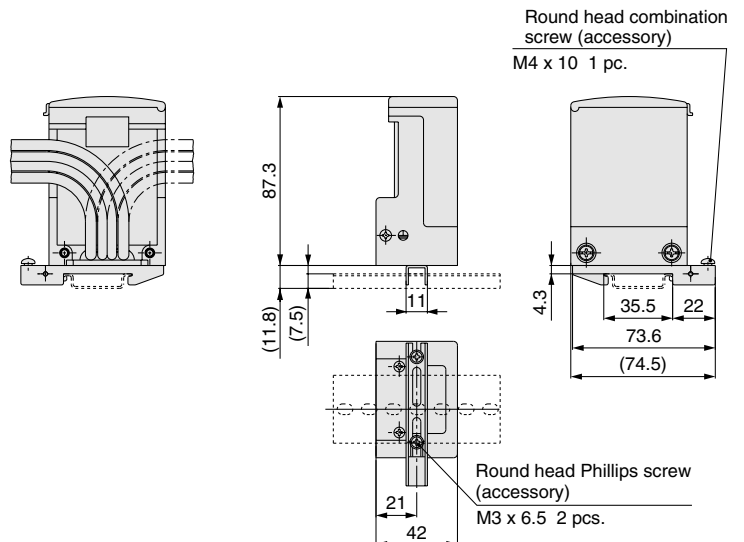
Note 2) When mounting the separated type controller, use the included M4 screw or use the M5 tap located on one side of the controller.

Note 3) When the CE compliant model is selected, a noise filter is provided but not attached. The cable for the CE compliant models uses the dedicated shielding. Even if a noise filter is attached to a non CE marked product, the product cannot be changed to a CE compliant product.

L-bracket/MYE-LB (Option)



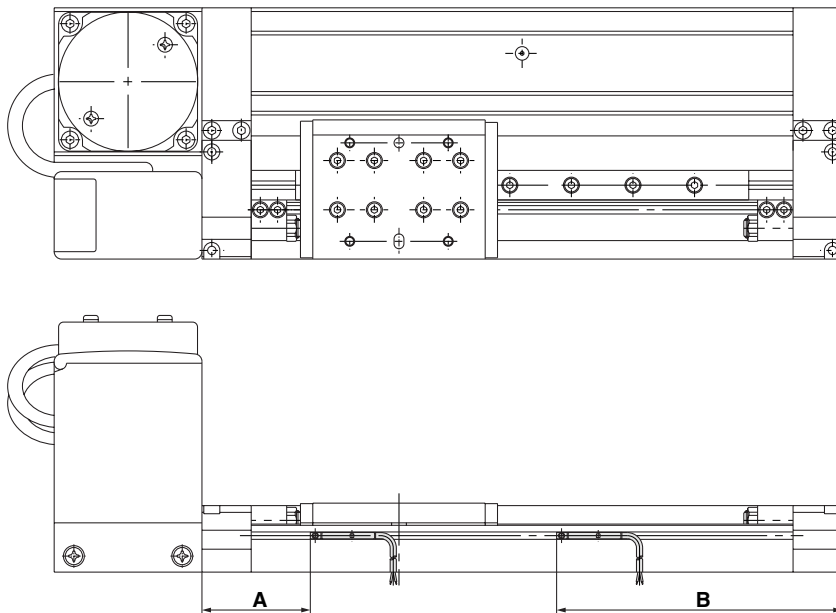
DIN rail bracket/MYE-DB (Option)



Series E-MY2H

Note) The operating range is a guide including hysteresis, but is not guaranteed. There may be large variations (as much as $\pm 30\%$) depending on the ambient environment.

Auto Switches/Proper Mounting Position at Stroke End Detection



D-A9, D-A9□V (mm)

Nominal size	A	B	Operating range
16	44	116	8.5
25	54	156	

D-M9, D-M9□V (mm)

Nominal size	A	B	Operating range
16	48	112	3
25	58	152	4

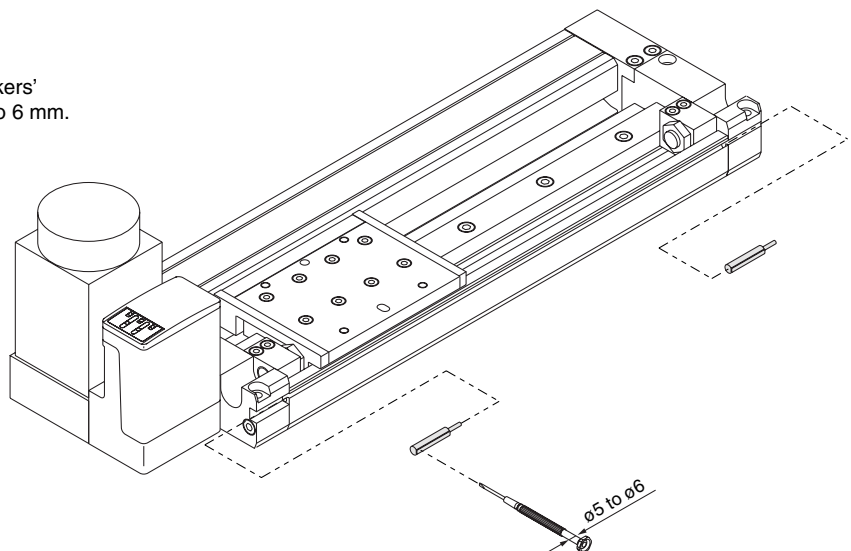
D-F9□W, D-F9□WV (mm)

Nominal size	A	B	Operating range
16	48	112	8.5
25	58	152	

Auto Switch Mounting

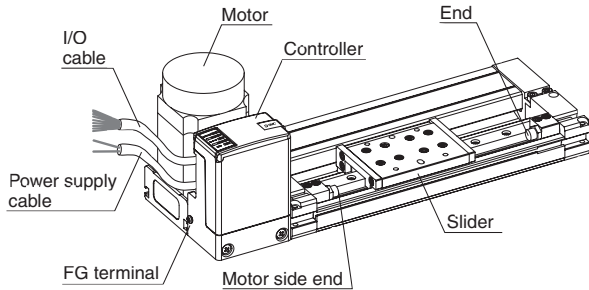
When mounting the auto switches, they should be inserted into the actuator's switch groove from the direction shown in the drawing on the right. Once in the mounting position, use a flat head watchmakers' screwdriver to tighten the included set screw.

Note) When tightening the set screw, use a watchmakers' screwdriver with a handle diameter of about 5 to 6 mm. The tightening torque should be 0.1 to 0.2 N·m.

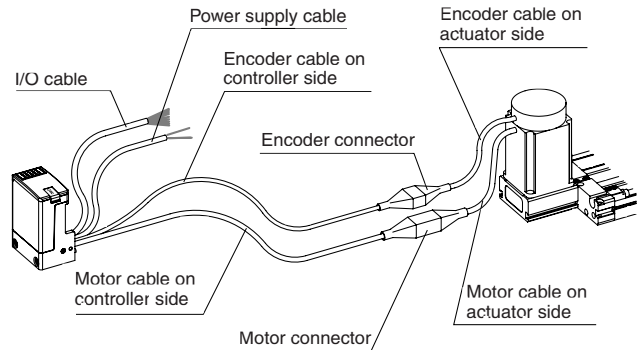


Names and Functions of Individual Part

Integrated control type

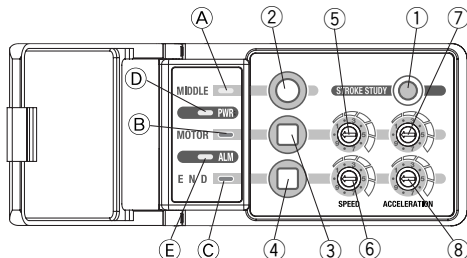


Remote control type



Description	Contents/Functions
Slider	Moving part within the actuator
Motor	Motor activating the actuator
Power supply cable	Power supply cable for providing power to the actuator
I/O cable	I/O cable for transmitting a positioning completion signal and driving instructions
Controller part	The unit part to control and set the actuator, and indicate its status
FG terminal	The terminal to connect the FG cable
Encoder cable on actuator side	Encoder cable for connecting the actuator with the controller
Motor cable on actuator side	Motor cable for connecting the actuator with the controller
Encoder cable on controller side	Encoder cable for separating the controller
Motor cable on controller side	Motor cable for separating the controller

Controller detail



Switch

Description	Contents/Functions
①	Stroke learning switch
② to ④	Switch to move the actuator to intermediate position and set the intermediate position
⑤	Rotary switch to set moving speed to the motor side end
⑥	Rotary switch to set moving speed to the other end
⑦	Rotary switch to set moving acceleration to the motor side end
⑧	Rotary switch to set moving acceleration to the other end

Indicator Light and the Display for the Basic Functions

Symbol	Description	Power supply ON	Actuation instruction					When decelerated and completely stopped ^{*1}	When the alarm is activated
			Motor side	End side	Intermediate ^{*1} 1	Intermediate ^{*1} 2	Intermediate ^{*1} 3		
(A)	MIDDLE Indicator light (Green)	—	—	—	○	○	○	—	*2
(B)	MOTOR Indicator light (Green)	—	○	—	—	○	—	○	
(C)	END Indicator light (Green)	—	—	○	—	—	○	○	
(D)	PWR Indicator light (Green)	○	○	○	○	○	○	○	○
(E)	ALM Indicator light (Red)	—	—	—	—	—	—	—	○

*○ indicates on status, and — indicates off status.

*1) Displays for the 5-point stoppable type only.

*2) When the alarm is activated, see page 20 for the ALM display.

Series E-MY2

Examples of Internal Circuit and Wiring

3-point Stoppable Type

Power Supply Cable 2 wires AWG20 (20 lines/0.16 mm²)

Symbol	Color	Signal name	Contents
DC1 (+)	Brown	Vcc	Power supply cables for driving the actuator
DC1 (-)	Blue	GND	

I/O Cable 9 wires AWG28 (7 wires/0.127 mm²)

Symbol	Color	Signal name	Contents
DC2 (+)	Brown	Vcc	Power supply cables for signal
DC2 (-)	Blue	GND	
OUT1	Pink	READY output	Signal indicating the controller is operable
OUT2	Orange	Positioning completion output 1	Signal indicating that positioning is completed
OUT3	Yellow	Positioning completion output 2	
OUT4	Green	Alarm output	Signal indicating an alarm has been generated
IN1	Purple	Actuation instruction input 1	Instruction signal to actuator
IN2	Gray	Actuation instruction input 2	
IN3	White	Emergency stop	Signal providing emergency stop instruction (The emergency stop is activated when contact is opened)

This product can be used without connecting I/O cables, however please use caution and install a power supply switch for the actuator. In case of an emergency, please turn it off.

I/O Cable Signals

Input signal

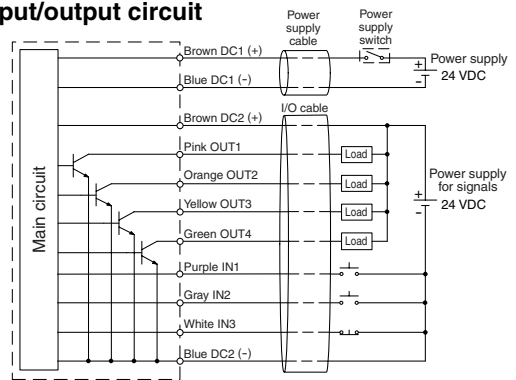
Command	Symbol	
	IN1	IN2
Motor side actuation instruction	○	—
End side actuation instruction	—	○
Intermediate actuation instruction	○	○

Output signal

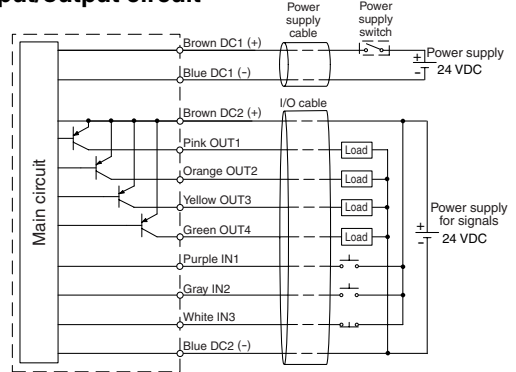
Actuator status	Symbol		
	OUT1	OUT2	OUT3
Completion of motor side end positioning	○	○	—
Completion of end positioning	○	—	○
Completion of intermediate positioning	○	○	○

"○" indicates on status, and — indicates off status.

NPN input/output circuit



PNP input/output circuit



5-point Stoppable Type

Power Supply Cable 2 wires AWG20 (20 lines/0.16 mm²)

Symbol	Color	Signal name	Contents
DC1 (+)	Brown	Vcc	Power supply cables for driving the actuator
DC1 (-)	Blue	GND	

I/O Cable 11 wires AWG28 (7 wires/0.127 mm²)

Symbol	Color	Signal name	Contents
DC2 (+)	Brown	Vcc	Power supply cables for signal
DC2 (-)	Blue	GND	
OUT1	Pink	READY output	Signal indicating the controller is operable
OUT2	Orange	Positioning completion output 1	Signal indicating that positioning is completed
OUT3	Yellow	Positioning completion output 2	
OUT4	Red	Positioning completion output 3	
OUT5	Green	Alarm output	Signal indicating an alarm has been generated
IN1	Purple	Actuation instruction input 1	Instruction signal to actuator
IN2	Gray	Actuation instruction input 2	
IN3	Black	Actuation instruction input 3	
IN3	White	Emergency stop	Signal providing emergency stop instruction (The emergency stop is activated when contact is opened)

This product can be used without connecting I/O cables, however please use caution and install a power supply switch for the actuator. In case of an emergency, please turn it off.

I/O Cable Signals

Input signal

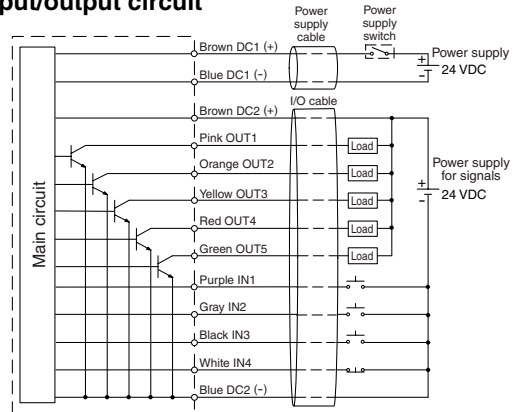
Command	Symbol		
	IN1	IN2	IN3
Motor side actuation instruction	○	—	—
End side actuation instruction	—	○	—
Intermediate actuation instruction 1	—	—	○
Intermediate actuation instruction 2	○	—	○
Intermediate actuation instruction 3	—	○	○
External input stop instruction	○	○	—

Output signal

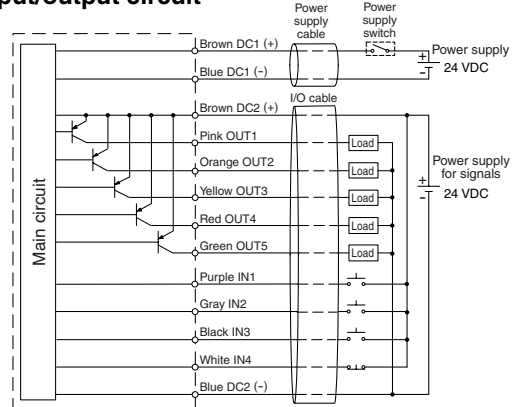
Actuator status	Symbol			
	OUT1	OUT2	OUT3	OUT4
Completion of motor side end positioning	○	○	—	—
Completion of end positioning	○	—	○	—
Completion of intermediate 1 positioning	○	—	—	○
Completion of intermediate 2 positioning	○	○	—	○
Completion of intermediate 3 positioning	○	○	○	○
Completion of external input stop	○	○	○	—

"○" indicates on status, and — indicates off status.

NPN input/output circuit



PNP input/output circuit



Error Display and Problem Solving



When the error indicator is displayed, refer to the following instructions.

Item	Display	Contents	Solution
Emergency stop		Either the emergency stop input is opened, or the power supply for the signal is cut-off.	Confirm the power supply signal is energized and release the emergency stop input. (Refer to the circuit diagram on page 19.)
Abnormal external output		External output is short-circuited. * There is no external output signal.	In case of common power supply, turn off the power supply and check the wiring condition of load. Restart the power supply. (Refer to the circuit diagram on page 19.)
			In case of an independent power supply, turn off the power supply for the signals and check the wiring condition of load. Restart the power supply. (Refer to the circuit diagram on page 19.)
Power supply abnormality		The power supply voltage is excessive or lower than the limit for operation.	Check the power supply voltage and adjust it if necessary, then press the MIDDLE button.
Drive abnormality		Maximum output is continued for a prolonged period of time.	Check the work weight and confirm that no foreign materials are attached to the actuator. After confirming, press the MIDDLE button.
Temperature abnormality		Internal temperature of the controller is high.	Lower the surrounding temperature of the actuator in use, and then press the MIDDLE button.

Item	Display	Contents	Solution
Abnormal stroke		The motor is revolving at excessive speed or stops before target is achieved.	If any foreign materials are observed, remove them and then press the MIDDLE button.
			Check to see whether the stroke adjusting unit is loose. If required, readjust the stroke and perform the stroke learning again. (Note 1)
Motor abnormality		The motor does not revolve properly or over current is detected.	In case of using the remote controller type, please confirm the connection of the connector part between the motor and the controller, after turning off the power supply.
			Press the MIDDLE button.
Controller abnormality		The CPU is malfunctioning or the memory content is abnormal.	In case of using the remote controller type, please confirm the connector part between the motor and the controller after cutting off the power supply.
			Turn off the power supply and restart it.
Error of the set value		The switch settings for speed and acceleration have been changed while in a locked condition. * There is no external output signal.	Reset the settings for speed and acceleration to the set values while in a locked condition.

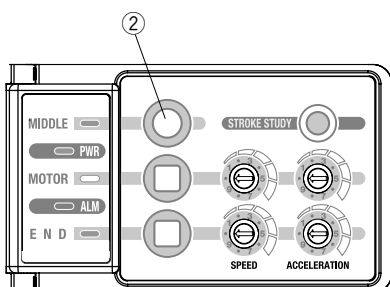
Note 1) The product is in the same condition as when the stroke learning process is completed.
Return to the home position is not performed by the initial input
• If the error can not be corrected, turn off the power supply to stop operation, and contact your SMC sales representative.

Alarm reset

There are two types of alarm reset: alarm reset manually (a) and an alarm reset externally (b) by an external signal.

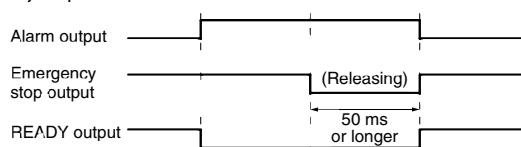
a: Alarm reset manually

In the event of an alarm, simply pushing (2) will revert from the alarm state.



b: Alarm reset externally

In the event of an alarm, simply inputting an external emergency stop signal for 50 ms or longer will return to the state prior to the alarm. The emergency stop output will activate by releasing the input for the emergency stop.



The followings are the reinstated condition.

- The slider will be free until the command for driving is applied
- After being reverted, the next input command for driving makes it start. The initial motion after being reverted is 50 mm/s of a traveling speed.

Series E-MY2

Auto Switch Specifications

Auto Switch Common Specifications

Type	Reed switch	Solid state switch
Leakage current	None	3-wire: 100 μ A or less 2-wire: 0.8 mA or less
Operating time	1.2 ms	1 ms or less
Impact resistance	300 m/s ²	1000 m/s ²
Insulation resistance	50 M Ω or more at 500 VDC Mega (between lead wire and case)	
Withstand voltage	1000 VAC for 1 minute (between lead wire and case)	
Ambient temperature	-10 to 60°C	
Enclosure	IEC529 standard IP67, JIS C 0920 waterproof construction	

Lead Wire Length

Lead wire length indication

(Example) D-M9P **L**

Lead wire length

Nil	0.5 m
L	3 m
Z	5 m

Note 1) Applicable auto switch with 5 m lead wire "Z"
Reed switch: None

Solid state switch: Manufactured upon receipt of order as standard.

Note 2) To designate solid state switches with flexible specifications, add "-61" after the lead wire length.

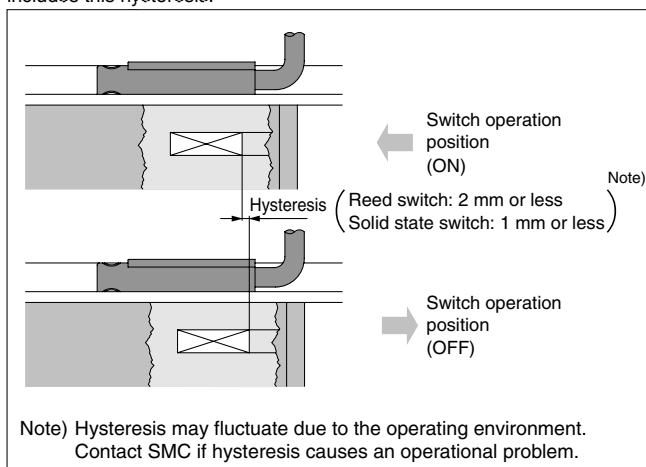
* Oilproof flexible heavy-duty cable is used for D-M9□ as standard. There is no need to add the suffix -61 to the end of part number.

(Example) D-F9PWVL- **61**

Flexible specification

Auto Switch Hysteresis

The hysteresis is the difference between the position of the auto switch as it turns "on" and as it turns "off". A part of operating range (one side) includes this hysteresis.



Contact Protection Boxes: CD-P11, CD-P12

<Applicable switch model>

D-A9/A9□V

The auto switches above do not have a built-in contact protection circuit. Therefore, please use a contact protection box with the switch for any of the following cases.

- ① Where the operation load is an inductive load.
- ② Where the wiring length to load is greater than 5 m.
- ③ Where the load voltage is 100 VAC.

The contact life may be shortened (Due to permanent energizing conditions.)

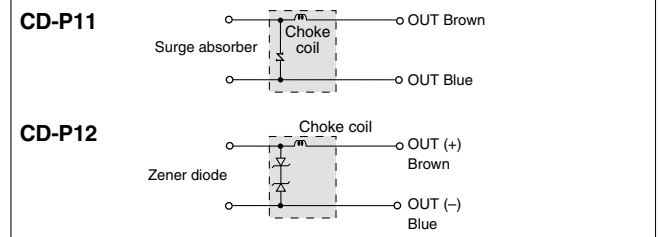
Specifications

Part No.	CD-P11		CD-P12
Load voltage	100 VAC	200 VAC	24 VDC
Maximum load current	25 mA	12.5 mA	50 mA

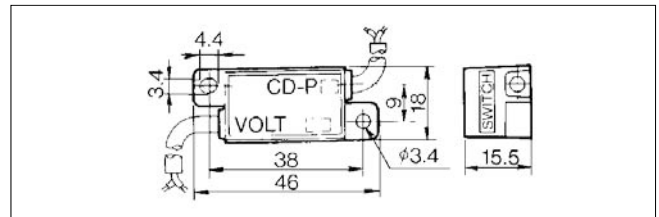
* Lead wire length — Switch connection side 0.5 m
Load connection side 0.5 m



Internal Circuit



Dimensions



Connection

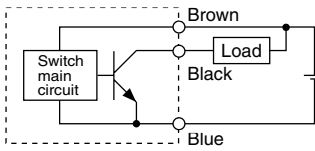
To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 meter.

Series E-MY2

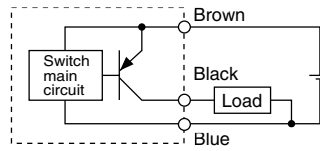
Auto Switch Connections and Examples

Basic Wiring

Solid state 3-wire, NPN

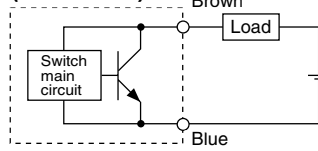


Solid state 3-wire, PNP



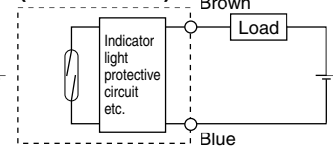
2-wire

(Solid state)

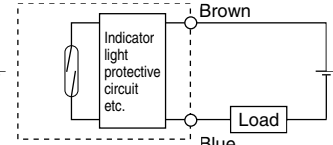
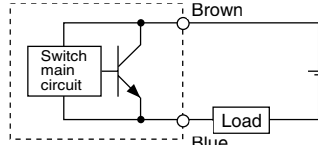
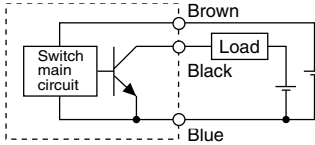


2-wire

(Reed switch)



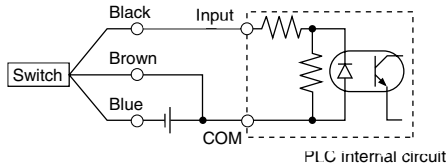
(Power supplies for switch and load are separate.)



Examples of Connection to PLC (Programmable Logic Controller)

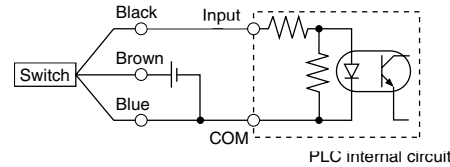
• Sink input specifications

3-wire, NPN



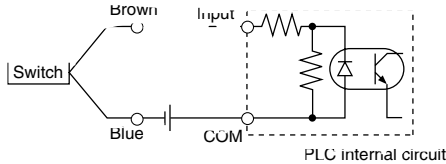
• Source input specifications

3-wire, PNP

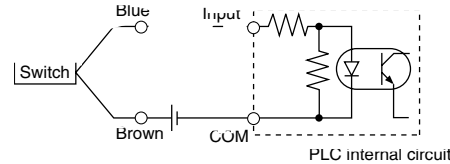


Connect according to the applicable PLC input specifications, since the connection method will vary depending on the PLC input specifications.

2-wire



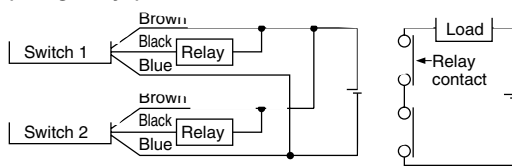
2-wire



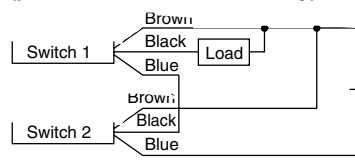
Examples of AND (Serial) and OR (Parallel) Connection

• 3-wire

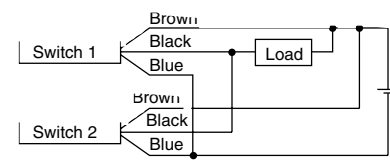
AND connection for NPN output (using relays)



AND connection for NPN output (performed with switches only)

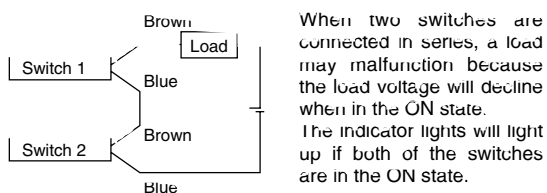


OR connection for NPN output



The indicator lights will light up when both switches are turned ON.

2-wire with 2-switch AND connection

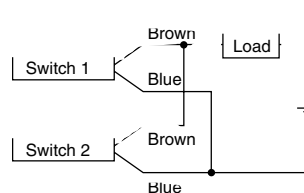


When two switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up if both of the switches are in the ON state.

$$\begin{aligned} \text{Load voltage at ON} &= \frac{\text{Power supply voltage}}{\text{Internal voltage drop} \times 2 \text{ pcs.}} \\ &= \frac{24 \text{ V}}{4 \text{ V} \times 2 \text{ pcs.}} \\ &= 16 \text{ V} \end{aligned}$$

Example: Power supply is 24 VDC.
Internal voltage drop in switch is 4 V.

2-wire with 2-switch OR connection



(Solid state)

When two switches are connected in parallel, a malfunction may occur because the load voltage will increase when in the OFF state.

$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \\ &\quad \times \text{Load impedance} \\ &= 1 \text{ nA} \times 2 \text{ pcs.} \times 3 \text{ k}\Omega \\ &= 6 \text{ V} \end{aligned}$$

Example: Load impedance is 3 k Ω .
Leakage current from switch is 1 nA.

(Reed switch)

Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of switches in the ON state, the indicator lights may sometimes dim or not light because of the dispersion and reduction of the current flowing to the switches.

Reed Switch: Direct Mounting Style

D-A90(V)/D-A93(V)/D-A96(V) C €

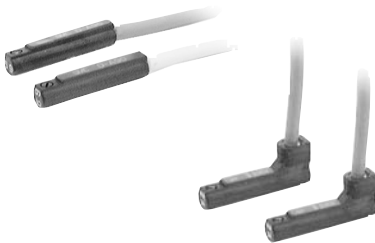
For details about certified products conforming to international standards, visit us at www.smcworld.com.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A90/D-A90V (Without indicator light)			
Auto switch part no.	D-A90/D-A90V		
Applicable load	IC circuit, Relay, PLC		
Load voltage	24 V AC/DC or less	48 V AC/DC or less	100 V AC/DC or less
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (including lead wire length of 3 m)		
D-A93/D-A93V/D-A96/D-A96V (With indicator light)			
Auto switch part no.	D-A93/D-A93V		D-A96/D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Load current range and max. load current	Note 3) 5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	D-A93 — 2.4 V or less (to 20 mA)/3 V or less (to 40 mA) D-A93V — 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when ON		

Grommet
Electrical entry direction: In-line



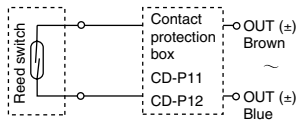
Caution

Operating Precautions

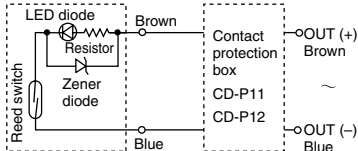
Fix the switch with the existing screw installed on the switch body. The switch may be damaged if a screw other than the one supplied, is used.

Auto Switch Internal Circuit

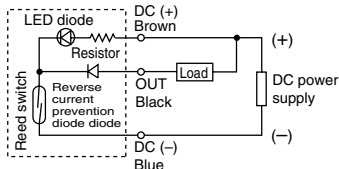
D-A90(V)



D-A93(V)



D-A96(V)



- Note) ① In a case where the operation load is an inductive load.
 ② In a case where the wiring load is greater than 5 m.
 ③ In a case where the load voltage is 100 VAC.

Please use the auto switch with a contact protection box any of the above mentioned cases. (For details about the contact protection box, refer to page 21.)

- Lead wires
 D-A90(V)/D-A93(V) — Oilproof heavy-duty vinyl cable: $\phi 2.7$, 0.18 mm² x 2 cores (Brown, Blue), 0.5 m
 D-A96(V) — Oilproof heavy-duty vinyl cable $\phi 2.7$ 0.5 mm² x 3 cores (Brown, Black, Blue), 0.5 m
 Note 1) Refer to page 21 for reed switch common specifications.
 Note 2) Refer to page 21 for lead wire lengths
 Note 3) In less than 5 mA condition, the indicating light visibility becomes low, and it may be unreadable in less than 2.5 mA. However, as long as the contact output is over a mA condition, there will be no problem.

Weight

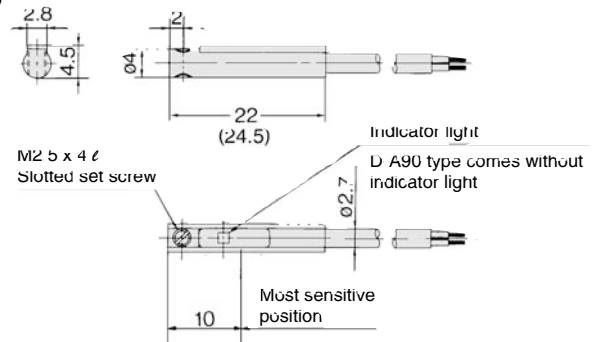
Unit: g

Model	D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length: 0.5 m	6	6	6	6	8	8
Lead wire length: 3 m	30	30	30	30	41	41

Dimensions

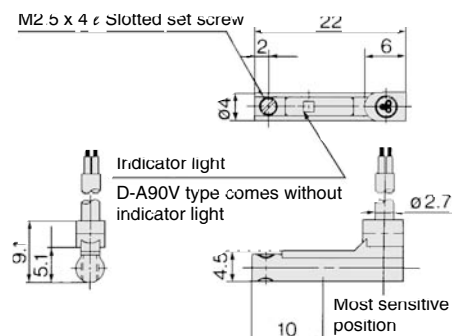
Unit: mm

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V

) dimensions for D-A93.



Solid State Switch: Direct Mounting Style D-M9N(V)/D-M9P(V)/D-M9B(V) C €

Grommet

- 2-wire load current is reduced (2.5 to 40 mA)
- Lead-free
- UL certified (style 2844) lead cable is used.



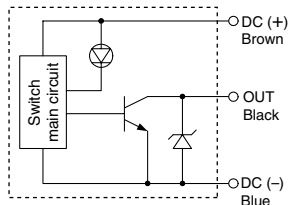
⚠ Caution

Operating Precautions

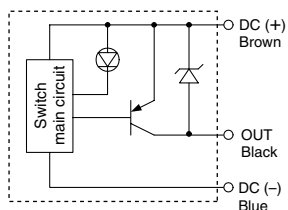
Fix the switch with the existing screw installed on the switch body. The switch may be damaged if a screw other than the one supplied, is used.

Auto Switch Internal Circuit

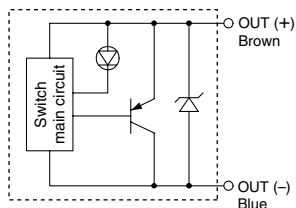
D-M9N(V)



D-M9P(V)



D-M9B(V)



Auto Switch Specifications



For details about certified products conforming to international standards, visit us at www.smcworld.com.

PLC: Programmable Logic Controller

D-M9□/D-M9□V (With indicator light)

Auto switch part no.	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire			2-wire		
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED illuminates when ON.					

● Lead wires

Oilproof heavy-duty vinyl cable: $\phi 2.7 \times 3.2$ ellipse

D-M9B(V) 0.15 mm² x 2 cores

D-M9N(V), D-M9P(V) 0.15 mm² x 3 cores

Note 1) Refer to page 21 for solid state switch common specifications

Note 2) Refer to page 21 for lead wire lengths.

Weight

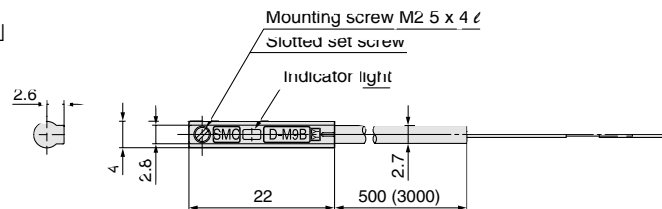
Unit: g

Auto switch part no.	D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length (m)	0.5	8	7
	3	41	38
	5	68	63

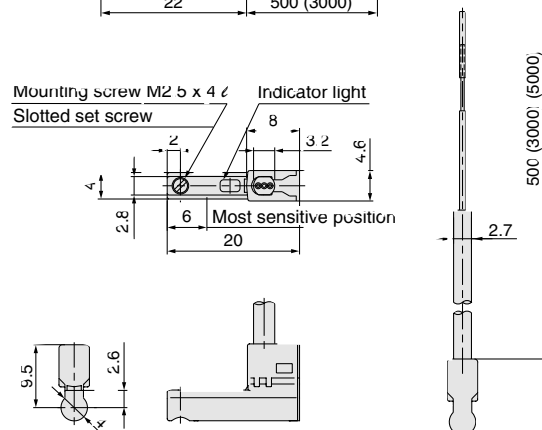
Dimensions

Unit: mm

D-M9□



D-M9□V



2-color Indication Type, Solid State Switch: Direct Mounting Style

D-F9NW(V)/D-F9PW(V)/D-F9BW(V) C €

For details about certified products conforming to international standards, visit us at www.smcworld.com.

Auto Switch Specifications

PLC Programmable Logic Controller

D-F9□W/D-F9□WV (With indicator light)						
Auto switch part no.	D-F9NW	D-F9NWV	D-F9PW	D-F9PWV	D-F9BW	D-F9BWV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire			2-wire		
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay IC, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less		80 mA or less		5 to 40 mA	
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)		0.8 V or less		4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating position Red LED illuminates. Optimum operating position Green LED illuminates.					

- Lead wires
Oilproof heavy-duty vinyl cable: $\phi 2.7$, $0.15 \text{ mm}^2 \times 3$ cores (Brown, Black, Blue),
 $0.18 \text{ mm}^2 \times 2$ cores (Brown, Blue), 0.5 m

Note 1) Refer to page 21 for solid state switch common specifications.

Note 2) Refer to page 21 for lead wire lengths.

Weight

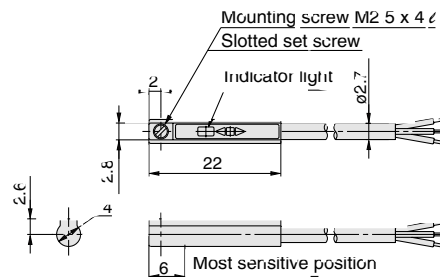
Unit: g

Auto switch part no.	D-F9NW(V)	D-F9PW(V)	D-F9BW(V)
Lead wire length (m)	0.5	7	7
	3	34	32
	5	56	52

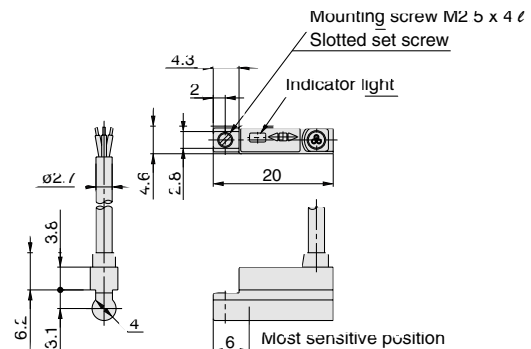
Dimensions

Unit: mm

D-F9□W



D-F9□WV



Grommet



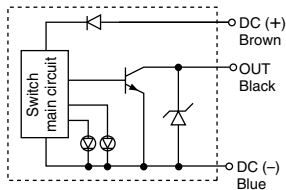
Caution

Operating Precautions

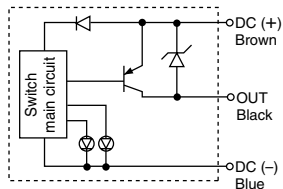
Fix the switch with the existing screw installed on the switch body. The switch may be damaged if a screw other than the one supplied, is used.

Auto Switch Internal Circuit

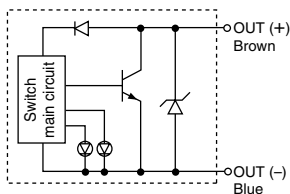
D-F9NW(V)



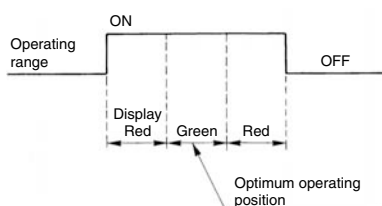
D-F9PW(V)



D-F9BW(V)



Indicator light/Display method



Series E-MY2 Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.



Made-to-Order Application List

		Intermediate stroke XB10	Long stroke XB11	Helical insert thread X168
E-MY2C	Cam follower guide type	Can be adjusted on a regular basis	Can be adjusted on a regular basis	●
E-MY2H	High precision guide type (Single axis)	●	●	●

1 Intermediate stroke -XB10

Within the standard stroke range, the stroke length in the middle range can be adjusted by 1 mm increments.

■ Stroke range: 51 to 599 mm

E-MY2H Refer to the standard model no. on page 12 -XB10

Example) E-MY2H25-599TAN-M9B-XB10

2 Long stroke -XB11

Available with long strokes exceeding the standard stroke range
The stroke length can be adjusted by 1 mm increments.

■ Stroke range: 601 to 1000 mm

E-MY2H Refer to the standard model no. on page 12 -XB11

Example) E-MY2H25-999TAN-M9B-XB11

3 Helical insert thread specifications -X168

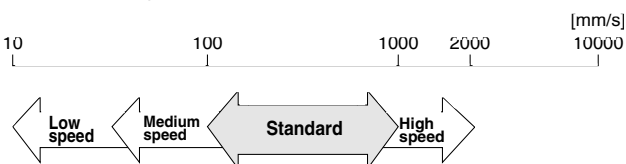
The mounting threads of the slider are changed to helical insert threads. The thread size is standard size.

E-MY2 Refer to the standard model no. on page 7,12 -X168

Example) E-MY2H25-300TAN-M9B-X168

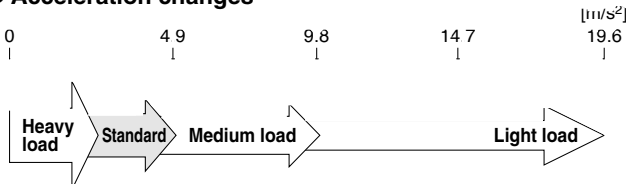
Others Made-to-Order/For detail, please contact SMC.

● Speed changes



Note 1) There are slight vibrations in a low speed operation of 40 mm/s or less.
Note 2) Acceleration cannot be reached in a high speed range exceeding 1000 mm/s.

● Acceleration changes



		Heavy load	Standard	Medium load	Light load
Max. acceleration		2.45	4.90	9.80	19.60
Maximum Payload [kg]					
Nominal size	16	10	5	2.5	1.25
	25	20	10	5	2.5

Note) For example, the maximum acceleration for the nominal size 25 under the standard load spec. is 4.9 m/s². In the case of the heavy load spec., the max. acceleration will be 2.45 m/s², and the max. payload will be 20 kg.

● 6-point stoppable type

Stoppable at both ends (2-point) and at intermediate strokes (4-point)

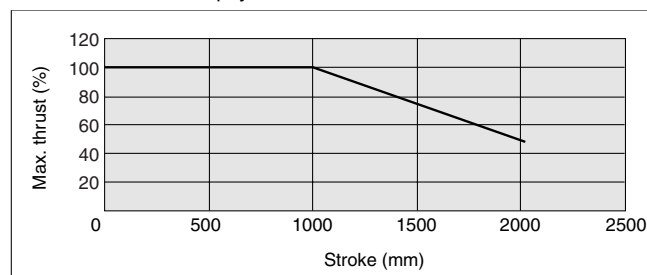
● Max. manufacturable stroke

Stroke exceeding 1000 mm is available.

Nominal size	E-MY2C	E-MY2H
16	2000	1000
25	2000	1500

Maximum thrust is reduced depending on the stroke.

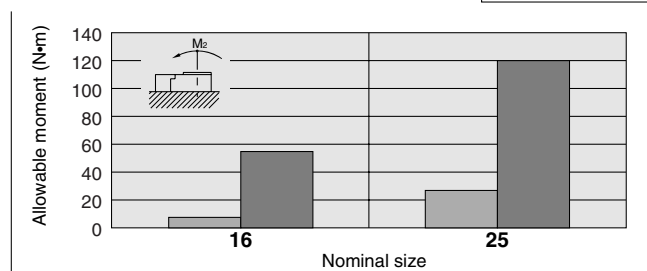
$$\text{Max. thrust} = \text{Max. payload} \times \text{Max. acceleration}$$



● Improvement against a moment

z-axis guide specification (equivalent to MY2HT)

■ E-MY2H
■ 2-axis (MY2HT)





Series E-MY2

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 10218 ^{Note 1)}, JIS B 8433 ^{Note 2)} and other safety practices.

⚠ Caution : Operator error could result in injury or equipment damage.

⚠ Warning : Operator error could result in serious injury or loss of life.

⚠ Danger : In extreme conditions, there is a possibility of serious injury or loss of life.

Note 1) ISO 10218: Manipulating industrial robots-Safety

Note 2) JIS B 8433: General Rules for Robot Safety

⚠ Warning

1. The compatibility of the e-Rodless actuator is the responsibility of the person who designs the system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility with a specific system must be based on either specifications, post analysis and/or tests to meet a specific requirement. The expected performance and safety assurance are the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all specified items by referring to the latest information in the catalog and by taking into consideration the possibility of equipment failure when configuring the system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of an electric actuator should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driven objects have been confirmed.
2. When equipment will be removed, confirm that all safety precautions have been followed. Turn off the power supply for this equipment.
3. Before machinery/equipment is restarted, confirm that safety measures are in effect.

4. Contact SMC if the product will be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, medical equipment, food and beverages, or safety equipment.
3. An application which has the possibility of having a negative effect on people, property, or animals, requiring special safety analysis.

5. Review and confirm the product's documentation thoroughly before using the product, or contact our distributors, or SMC for confirmation for a problem free application.

6. Use the product after thoroughly reviewing and confirming the precautions in this catalog.

7. Some products in this catalog are for particular applications and sites only. Check and confirm with the distributor or SMC.



Series E-MY2

e-Rodless Actuators Precautions 1

Be sure to read this before handling.

Design and Selection

⚠ Warning

1. Conduct operation at regulated voltage.

The product may not function correctly or the controller section may be damaged if used with any other voltage than the specified regulated voltage. If the regulated voltage is low, the load may not operate due to internal voltage drop of the controller section. Check and confirm the operating voltage before using.

2. Do not use a load that is over the maximum load volume.

The controller section may be damaged.

3. Operate within the limit of the specification range.

If operated outside of the specification range, there is a possibility of fire, malfunction, and or actuator damage. Operate after confirming the required specifications.

4. To prevent any damage by product failure or malfunction, plan and construct a backup system beforehand, such as multiplexing the components and equipment, employing failure free planning, etc.

5. Provide enough space for maintenance.

When planning, consider the space required for product checkup and maintenance.

6. Provide a protective cover when there is a risk of human injury.

If a driven object and or moving parts of a cylinder pose a danger to human injury, design the structure to avoid contact with the human body.

7. Securely tighten all mounting parts and connecting parts of the actuator to prevent them from becoming loose.

In particular, when a cylinder operates at a high frequency, or is installed where there is excessive vibration, ensure that all parts remain secure.

Mounting

⚠ Caution

1. Do not drop, strike, or apply excessive shock to the actuator.

The actuator could be damaged, resulting in its failure and or malfunction.

2. Hold the body when handling.

The actuator could be damaged, resulting in its failure and or malfunction.

3. Keep tightening torque.

If tightened beyond the specified range, damage may occur. In addition, if tightened below the specified range, the actuator installation position may shift to some extent.

4. Do not install the actuator in a location used as a scaffold for work.

By stepping on the actuator, the actuator may receive excessive load weight which may damage it.

Mounting

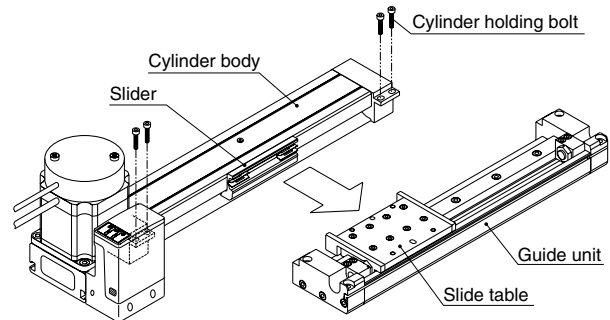
⚠ Caution

5. Provide a flat surface for installing the actuator. The degree of surface flatness should be determined by the machine precision requirement, or its corresponding precision.

Keep surface flatness within 0.1/500 mm.

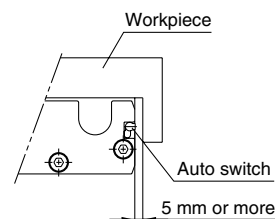
6. Attaching and detaching the cylinder body

To remove the cylinder body, remove the four cylinder holding bolts and remove the cylinder from the guide unit. To install the cylinder, insert its slider into the slide table on the guide unit and equally tighten the four holding bolts. Tighten the holding bolts securely because if they become loose, problems may occur such as damage, malfunction, etc.



7. Workpiece mounting

When mounting a magnetic workpiece, keep a clearance of 5 mm or greater between the auto switch and the workpiece. Otherwise, the magnetic force within the cylinder may be lost, resulting in malfunction of the auto switch.



Wiring

⚠ Warning

1. Avoid repeatedly bending and/or stretching the cables.

Repeatedly applying bending stress and stretching force to the cables may result in broken lead wires.

2. Avoid incorrect wiring.

Depending on the type of incorrect wiring, the controller section may be damaged.

3. Perform wiring when the power is off.

The controller section may be damaged and malfunction.



Series E-MY2

e-Rodless Actuators Precautions 2

Be sure to read this before handling.

Wiring

Warning

4. Do not wire with power lines or high voltage lines.

Conduct wiring for controller separately from power lines or high voltage lines to avoid interference from the noise or surge from the signal lines of the power lines or high voltage lines. This may result in malfunction.

5. Confirm that the wiring is properly insulated.

Be certain that there is no faulty wiring insulation (contact with other circuits, improper insulation between terminals, etc.) because the e-Rodless may be damaged due to excessively applied voltage or current flow to the controller section.

6. Be sure to attach a noise filter when a remote control type, CE compliant product is used.

Using without a noise filter will be a non-CE compliant product.

Operating Environment

Warning

1. Do not use in a place where the product may come in contact with dust, particles, water, chemicals and oil.

It may cause damage and malfunction.

2. Do not use in a place where a magnetic field is present.

It may cause malfunction to the actuator.

3. Do not use the product in the presence of flammable, explosive or corrosive gas.

It may cause fire, explosion, and corrosion.

The actuator does not have an explosion proof construction.

4. Do not use in an environment subjected to temperature cycle.

If used in an environment where temperature cycling occurs, other than the usual temperature change, the internal controller may be adversely effected.

5. Do not use in a place that has excessive electrical surge generation, even though this product is compliant with CE marking.

When there are units (solenoid type lifter, high frequency induction furnace, motor, etc.) which generate a large amount of surge in an area around the e-Rodless cylinder, deterioration or damage may occur to the internal circuit elements of the controller. Avoid sources of surge generation and crossed lines.

6. Select a product type that has built-in surge absorbing elements for a load, such as relays or solenoid valves which are employed for driving voltage generating load directly.

7. Install the actuator in a place without vibration and impact.

Vibration and impact causes damage and malfunction to the product and work, as well as prevents the work from meeting the specified parameters.

Adjustment and Operation

Warning

1. Do not short the loads.

Short on the load of the controller indicates an error, but it may cause over current and damage the controller.

2. Do not operate or conduct any settings with wet hands.

An electrical shock may result from wet hands.

3. When operating the controller, avoid making contact with the workpiece.

Contact with the workpiece may cause injury.

Caution

1. Do not push the setting buttons with sharp pointed items.

Sharp pointed items may cause setting button damage.

2. Do not touch the sides and lower parts of the motor and controller.

Conduct operation after confirming that the machine is cool since it gets hot while in operation.

3. After the stroke is adjusted, turn on the power supply and then perform stroke learning.

If stroke learning is not performed, the product may not operate according to the adjusted stroke and damage to any connected equipment may occur.

4. Do not randomly change the guide adjusting section setting.

Readjustment of the guide is not necessary for normal operation, since it is pre-adjusted. Accordingly, do not randomly change the guide adjusting section setting.

Maintenance

Warning

1. Periodically perform maintenance of the product.

Confirm that the piping and bolts are securely tightened. Unintentional malfunction of a system's components may occur as a result of an actuator malfunction.

2. Do not disassemble, modify (including change of printed circuit board) or repair.

Disassembly or modification may result in injury or failure.

Caution

1. Confirm the range of movement of a work piece (a slider) before connecting the driving power supply or turning on the switch.

The movement of the work may cause an accident.

When the power supply is turned on, the work is returned to home position by input IN1 or IN2 signal. (Except in the case when stroke learning is not performed ever).



Series E-MY2 Auto Switches Precautions 1

Be sure to read this before handling.

Design and Selection

Warning

1. Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside of its specification range (e.g. load current, voltage, temperature or impact, etc.).

2. Take precautions when multiple actuators are used close together.

When two or more actuators are lined up in close proximity to each other, magnetic field interference may cause the switches to malfunction. Maintain a minimum cylinder separation of 40 mm.

3. Pay attention to the length of time that a switch is on at an intermediate stroke position.

When an auto switch is placed at an intermediate position of the stroke and a load connected to the auto switch is driven at the time the slide table passes, the auto switch will operate. However if the speed is too great, the operating time will be shortened and the load may not operate properly. The maximum detectable piston speed is:

$$V \text{ (mm/s)} = \frac{\text{Auto switch operating range (mm)}}{\text{Load operating time (ms)}} \times 1000$$

4. Keep wiring as short as possible.

<Reed switch>

As the length of the wiring to a load gets longer, the rush current at the time the switch is turned ON becomes greater, which may shorten the product's life. (The switch will stay ON all the time.)

1) Use a contact protection box when the wire length is 5 m or longer.

<Solid state switch>

2) Although the wire length should not affect switch function, use a wire that is 100 m or shorter.

5. Take precautions for the internal voltage drop of the switch.

<Reed switch>

1) Switches with an indicator light (Except D-A96, A96V)

- If auto switches are connected in series as shown below, take note that there will be a large voltage drop because of internal resistance from the light emitting diodes. (Refer to internal voltage drop in the auto switch specifications.)

[The voltage drop will be "n" times larger when "n" auto switches are connected.]

Even though an auto switch operates normally, the load may not operate.



- Similarly, when operating below a specified voltage, it is possible that the load may be ineffective even though the auto switch function is normal. Therefore, the formula below should be satisfied after confirming the minimum operating voltage of the load.

$$\text{Supply voltage} - \text{Internal voltage drop of switch} > \text{Minimum operating voltage of load}$$

2) If the internal resistance of a light emitting diode causes a problem, select a switch without an indicator light (Model A90, A90V).

<Solid state switch>

3) Generally, the internal voltage drop will be greater with a 2-wire solid state auto switch than with a reed switch. Take the same precautions as in item (1) as mentioned above. Also, note that a 12 VDC relay is not applicable.

6. Pay attention to leakage current.

<Solid state switch>

With a 2-wire solid state auto switch, current (leakage current) flows to the load to operate the internal circuit even when in the OFF state.

$$\text{Current to operate load (Input OFF signal of controller)} > \text{Leakage current}$$

If the condition given in the above formula is not met, internal circuit will not reset correctly (stays ON). Use a 3-wire switch if this specification cannot be satisfied.

Moreover, leakage current flow to the load will be "n" times larger when "n" auto switches are connected in parallel.

7. Do not use a load that generates surge voltage.

<Reed switch>

If driving a load such as a relay which generates a surge voltage, use a contact protection box.

<Solid state switch>

Although a zener diode for surge protection is connected at the output side of a solid state auto switch, damage may still occur if a surge is applied repeatedly. When directly driving a load which generates a surge, such as a relay or solenoid valve, use a switch with a built-in surge absorbing element.

8. Cautions for use in an interlock circuit

When an auto switch is used for an interlock signal requiring high reliability, devise a double interlock system to safeguard against malfunctions. The double interlock system should provide a mechanical protection function or use another switch (sensor) together with the auto switch. Also perform periodic inspection and confirm proper operation.

9. Provide enough space for maintenance.

When designing an application, be sure to allow sufficient clearance for maintenance and inspections.



Series E-MY2

Auto Switches Precautions 2

Be sure to read this before handling.

Mounting and Adjustment

Warning

1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (300 m/s² or greater for reed switches and 1000 m/s² or greater for solid state switches) while handling.

Although the body of the switch may not be damaged, the inside of the switch could be damaged and cause a malfunction.

2. Do not carry an actuator by the auto switch lead wires.

Never carry a cylinder by its lead wires. This may not only cause broken lead wires, but it may cause internal elements of the switch to be damaged by the stress.

3. Mount switches using the proper tightening torque.

When a switch is tightened above the torque specification, the mounting screws, or switch may be damaged. On the other hand, tightening below the torque specification may allow the switch to slip out of position.

4. Mount a switch at the center of the operating range.

Adjust the mounting position of an auto switch so that the piston stops at the center of the operating range (the range in which a switch is ON). (The mounting positions shown in the catalog indicate the optimum position at the stroke end.) If mounted at the end of the operating range (around the borderline of ON and OFF), operation will be unstable.

<D-M9□>

When the D-M9 auto switch is used to replace old series auto switch, it may not activate depending on operating condition because of its shorter operating range.

Such as

- Application where the stop position of actuator may vary and exceed the operating range of the auto switch, for example, pushing, pressing, clamping operation, etc.
- Application where the auto switch is used for detecting an intermediate stop position of the actuator. (In this case the detecting time will be reduced.)

In these applications, set the auto switch to the center of the required detecting range.

Caution

1. Fix the switch with the appropriate screw installed on the switch body. The switch may be damaged if other screws are used.

Wiring

Warning

1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from repeatedly applying bending stress or stretching force to the lead wires.

2. Be sure to connect the load before power is applied.

<2-wire type>

If the power is turned ON when an auto switch is not connected to a load, the switch will be instantly damaged because of excess current.

Wiring

3. Confirm proper insulation of wiring.

Be certain that there is no faulty wiring insulation (such as contact with other circuits, ground fault, improper insulation between terminals, etc.). Damage may occur due to excess current flow into a switch.

4. Do not wire in conjunction with power lines or high voltage lines.

Wire separately from power lines or high voltage lines, avoiding parallel wiring or wiring in the same conduit with these lines. Control circuits containing auto switches may malfunction due to noise from these lines.

5. Do not allow short circuit of loads.

<Reed switch>

If the power is turned ON with a load in a short circuited condition, the switch will be instantly damaged because of excess current flow into the switch.

<Solid state switch>

D-M9□ and all models of PNP output type switches do not have built-in short circuit protection circuits. If loads are short circuited, the switches will be instantly damaged, as in the case of reed switches.

Take special care to avoid reverse wiring with the brown power supply line and the black output line on 3-wire type switches.

6. Avoid incorrect wiring.

<Reed switch>

A 24 VDC switch with indicator light has polarity. The brown lead wire is (+), and the blue lead wire is (-).

1) If connections are reversed, the switch will still operate, but the light emitting diode will not light up.

Also note that a current greater than the maximum specified one will damage a light emitting diode and make it inoperable.

Applicable models: D-A93, A93V

<Solid state switch>

1) Even if connections are reversed on a 2-wire type switch, the switch will not be damaged because it is protected by a protection circuit, but it will remain in a normally ON state. But reverse wiring in a short circuit load condition should be avoided to protect the switch from being damaged.

2) Even if (+) and (-) power supply line connections are reversed on a 3-wire type switch, the switch will be protected by a protection circuit. However, if the (+) power supply line is connected to the blue wire and the (-) power supply line is connected to the black wire, the switch will be damaged.

<D-M9□>

D-M9□ does not have built-in short circuit protection circuit. Be aware that if the power supply connection is reversed (e.g. (+) power supply wire and (-) power supply wire connection is reversed), the switch will be damaged.

* Lead wire color changes

Lead wire colors of SMC switches have been changed in order to meet NECA Standard 0402 for production beginning September, 1996 and thereafter. Please refer to the tables provided.

Special care should be taken regarding wire polarity during the time that the old colors still coexist with the new colors.

2-wire

	Old	New
Output (+)	Red	Brown
Output (-)	Black	Blue

3-wire

	Old	New
Power supply	Red	Brown
GND	Black	Blue
Output	White	Black



Series E-MY2

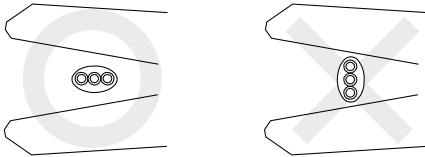
Auto Switches Precautions 3

Be sure to read this before handling.

Wiring

⚠ Caution

1. When the cable sheath is stripped, confirm the stripping direction. The insulator may be split or damaged depending on the direction. (D-M9□ only)



Recommended tool

Manufacturer	Model name	Model no.
VESSEL	Wire stripper	No 3000G
TOKYO IDEAL CO., LTD	Strip master	45-089

* Stripper for a round cable (ø2.0) can be used for a 2-wire type cable.

Operating Environment

⚠ Warning

1. **Never use in an atmosphere of explosive gases.**
The construction of the auto switch is not intended to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.
2. **Do not use in an area where a magnetic field is generated.**
The auto switch will malfunction or the magnets inside of an actuator will become demagnetized if used in such an environment.
3. **Do not use in an environment where the auto switch will be continually exposed to water.**
The switch satisfies the IEC standard IP67 construction (JIS C 0920: watertight construction). Nevertheless, it should not be used in applications where it is continually exposed to water splash or spray. This may cause deterioration of the insulation or swelling of the potting resin inside switch causing a malfunction.
4. **Do not use in an environment with oil or chemicals.**
Consult with SMC if the auto switch will be used in an environment laden with coolant, cleaning solvent, various oils or chemicals. If the auto switch is used under these conditions for even a short time, it may be adversely effected by a deterioration of the insulation, a malfunction due to swelling of the potting resin, or hardening of the lead wires.
5. **Do not use in an environment with temperature cycles.**
Consult with SMC if the switch is used where there are temperature cycles other than normal temperature changes, as they may adversely affected the switch internally.

Operating Environment

6. **Do not use in an environment where there is excessive impact shock.**

<Reed switch>

When excessive impact (300 m/s² or more) is applied to a reed switch during operation, the contact point may malfunction and generate a signal momentarily (1 ms or less) or cut off. Consult with SMC regarding the need to use a solid state switch in a specific environment.

7. **Do not use in an area where surges are generated.**

<Solid state switch>

When there are units (such as solenoid type lifters, high frequency induction furnaces, motors, etc.) that generate a large amount of surge in the area around an actuator with a solid state auto switch, their proximity or pressure may cause deterioration or damage to the internal circuit of the switch. Avoid sources of surge generation and crossed lines.

8. **Avoid accumulation of iron debris or close contact with magnetic substances.**

The auto switches in an actuator may malfunction when a large accumulated amount of machining chips, welding spatter and or magnetically attracted material is located near the auto switch. This failure may be the result of loss magnetic force inside of the actuator.

Maintenance

⚠ Warning

1. **Perform the following maintenance periodically in order to prevent possible danger due to unexpected auto switch malfunction.**
 - 1) Securely tighten switch mounting screws.
If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.
 - 2) Confirm that there is no damage to the lead wires.
To prevent faulty insulation, replace switches or repair lead wires, etc., if damage is discovered.
 - 3) Confirm that the green light on the 2-color display type switch lights up.
Confirm that the green LED is ON when stopped at the set position. If the red LED is ON, when stopped at the set position, the mounting position is not appropriate. Readjust the mounting position until the green LED lights up.

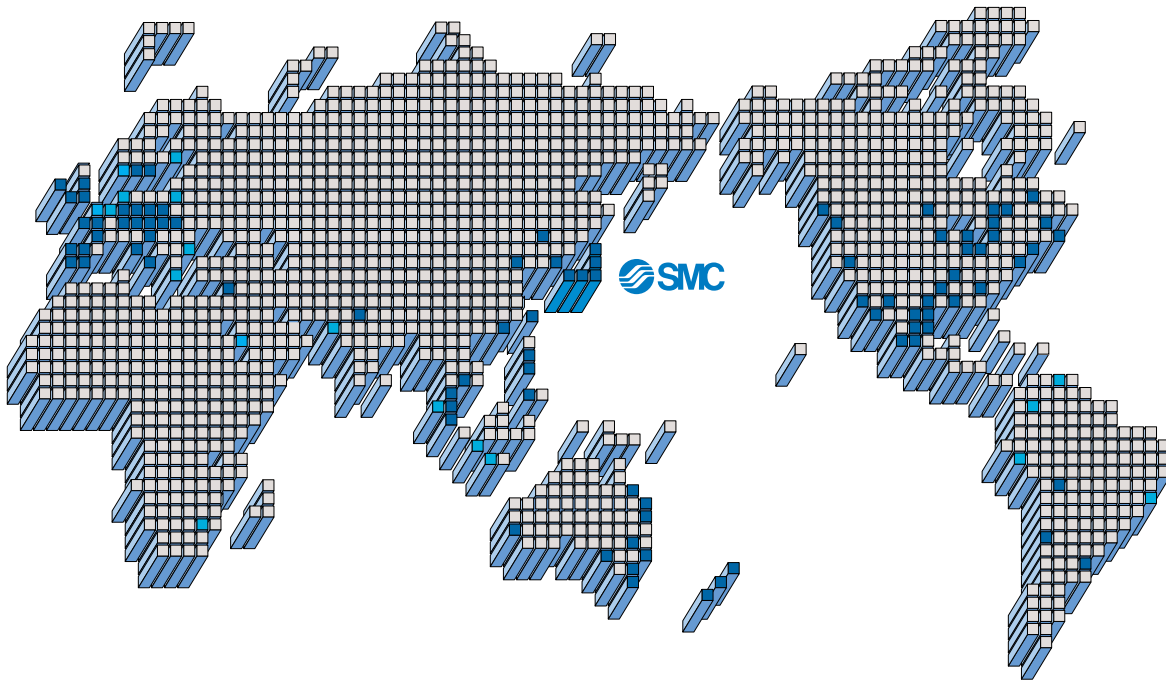
Other

⚠ Warning

1. **Consult with SMC concerning water resistance, elasticity of lead wires, usage at welding sites, etc.**



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SMC Corporation

1-16-4 Shimbashi, Minato-ku, Tokyo 105-8659 JAPAN

Tel: 03-3502-2740 Fax: 03-3508-2480

URL <http://www.smcworld.com>

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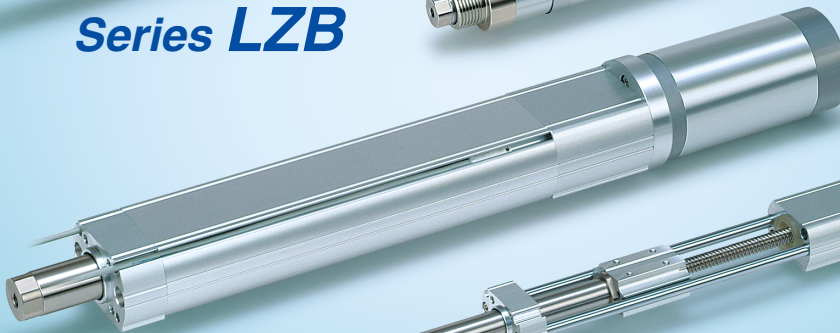
Electric Cylinders

Electric Cylinder

It can be operated like an air cylinder.



Series LZB



Series LZC

Model	Max. thrust	Max. speed	Lead screw	Stroke
LZB	196 N	200 mm/s	Slide screw: $\varnothing 8$, $\varnothing 12$	25, 40, 50
LZC			Lead: 2, 6, 12	100, 200

Directional Control Driver for Electric Cylinder

Directional control driver like a solenoid valve

- Able to control the stroke with only ON/OFF signals.
- A current control protects the driver/motor from burning out.
- Able to control with only 3 different types of input signals.

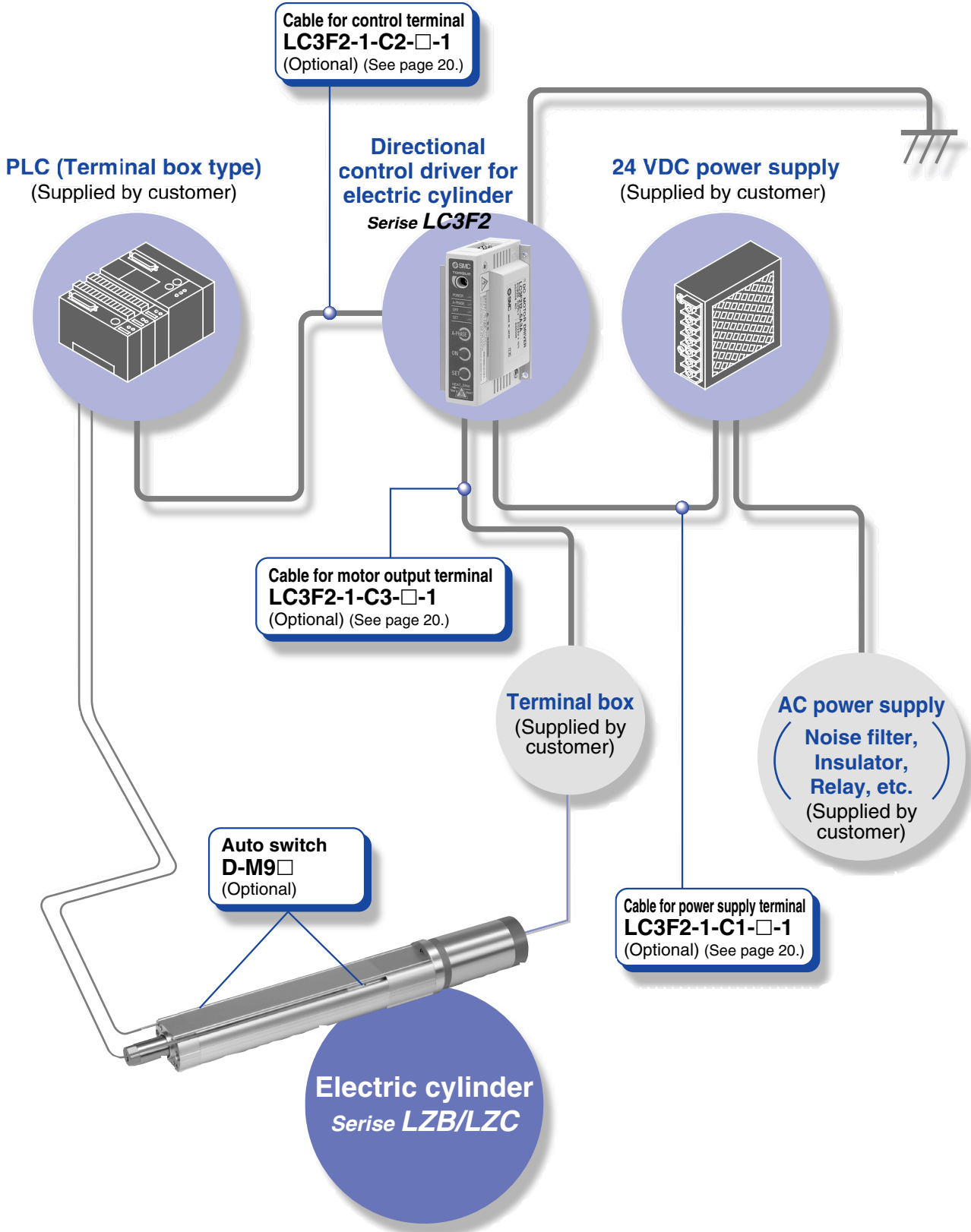
- 1 Directional control (A-PHASE)
- 2 Output ON/OFF (ON)
- 3 Thrust selection (SET)

● Can be operated manually.



Series LC3F2

Series LZ System Chart



Series LZB/LZC Model Selection

Note) These graphs are made using actual data. Therefore these graphs are to be used as a reference and are not a guarantee of product's performance in any case. The graphs may change depending on the operating condition or environment.

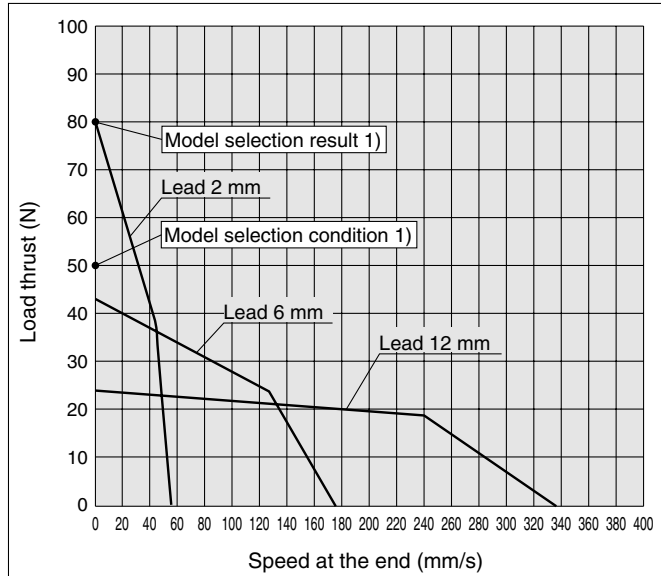
Motion of Pressing Force

Model selection condition 1)
Used as a force-pressing. 50 N or greater pressing



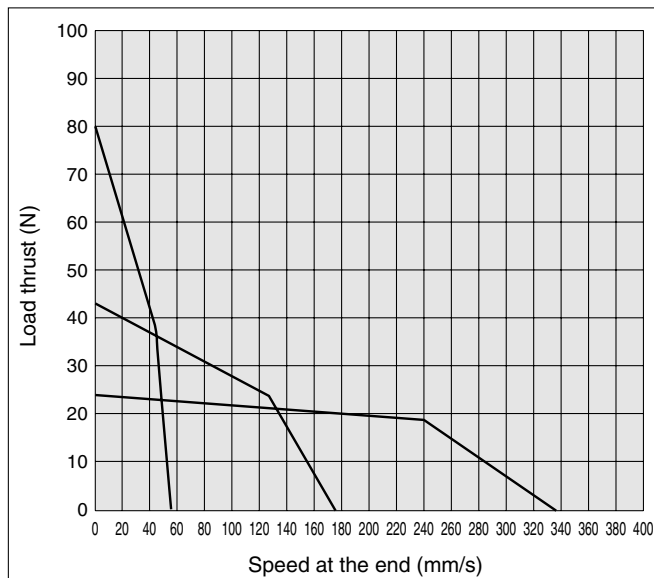
Model selection result 1)
From Graph 1, LZB/C□3's lead 2 is applicable. (Pressing force: 80 N)

Graph 1 LZ□3: [Speed-Thrust] Relationship Graph



Speed-Thrust Graph

LZ□3



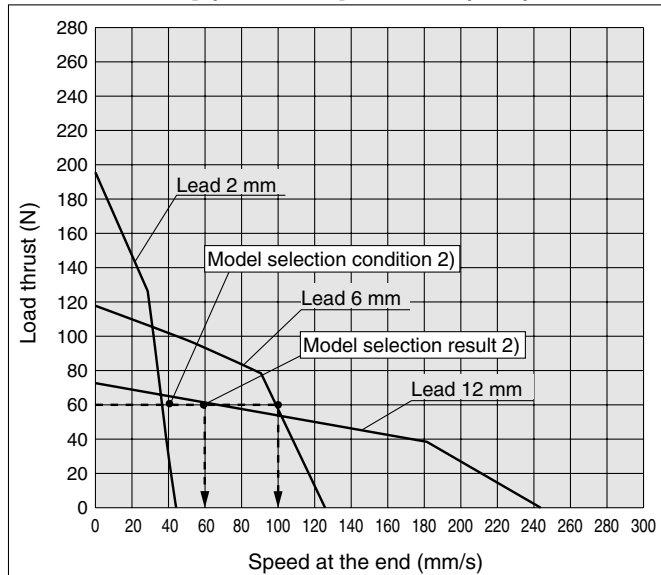
Transfer

Model selection condition 2)
Used as a transfer. 60 N transfer thrust and 40 mm/s transfer speed are required.

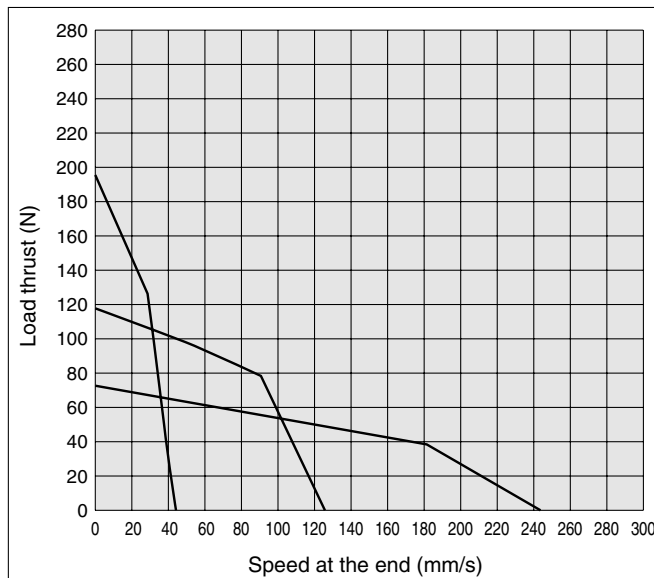


Model selection result 2)
From Graph 2, LZB/C□5's lead 6 mm and lead 12 mm are applicable. But, speed at the end with 60 N load will be 100 mm/s for lead 6 mm and 60 mm/s for lead 12 mm. Select a suitable product in accordance with the customer's equipment.

Graph 2 LZ□5: [Speed-Thrust] Relationship Graph



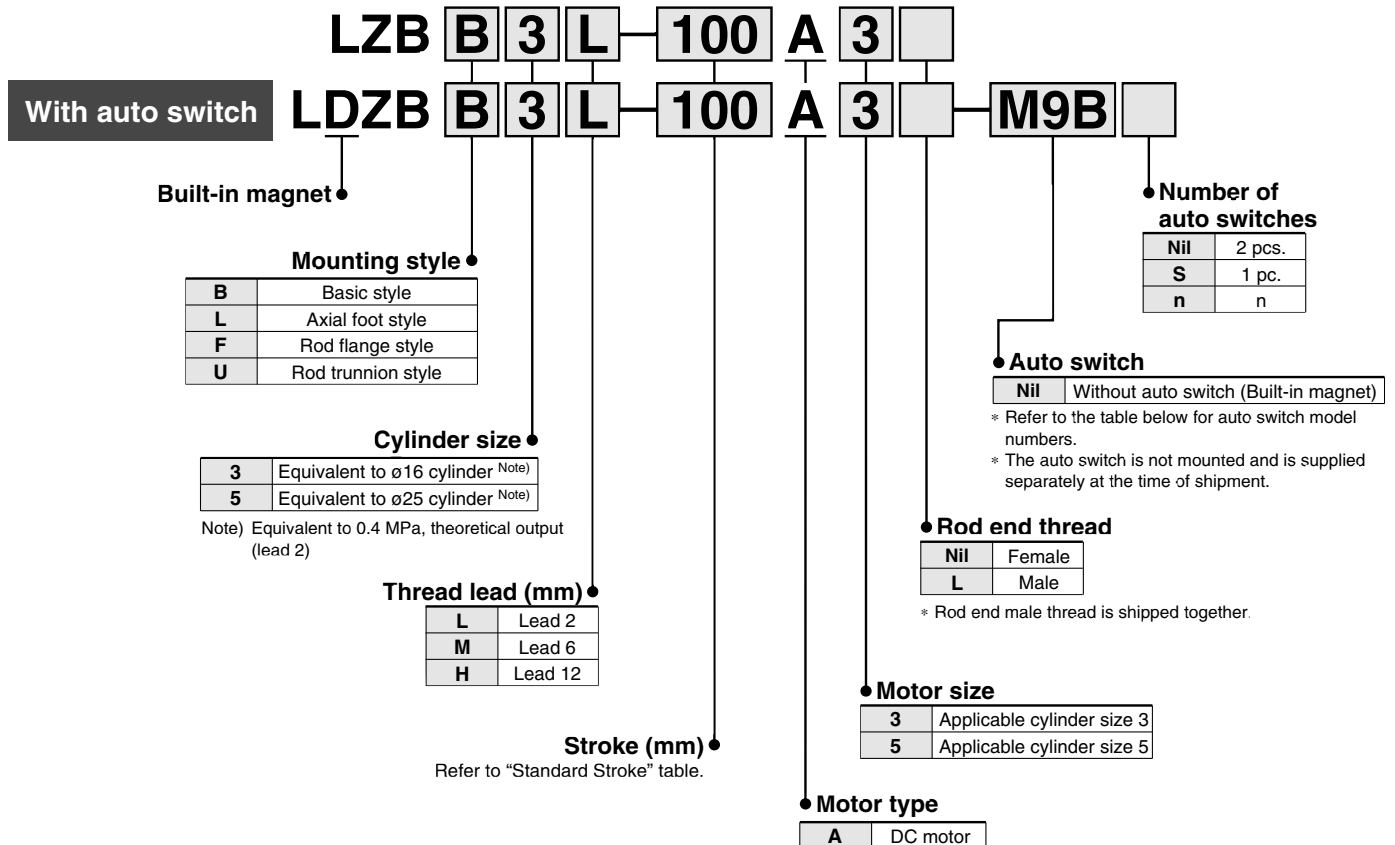
LZ□5



Electric Cylinder Series **LZB**



How to Order



Standard Stroke

Cylinder size	Standard stroke (mm) *
3, 5	25, 40, 50, 100, 200

* Other intermediate strokes can be manufactured upon receipt of order.

(Maximum manufacturable stroke: 200 mm)

Conditions for using a trunnion bracket are as follows:

- Maximum stroke: 150 mm
- Thread lead L (lead 2 mm) only

Applicable Auto Switches/For detailed auto switch specifications, refer to page 16 through to 18.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m) *			Pre-wired connector	Applicable load	
					DC	AC		0.5 (Nil)	3 (L)	5 (Z)		IC circuit	Relay PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V	M9N	●	●	○	○		
				3-wire (PNP)		12 V		●	●	○			
				2-wire		12 V		●	●	○			

* Lead wire length symbols: 0.5 m Nil (Example) M9N
3 m L M9NL
5 m Z M9NZ

* Solid state switches marked "○" are produced upon receipt of order.

Specifications



Model	L□ZB□3L	L□ZB□3M	L□ZB□3H	L□ZB□5L	L□ZB□5M	L□ZB□5H
Size	3 (Equivalent to ø16 cylinder) ^{Note 1)}			5 (Equivalent to ø25 cylinder) ^{Note 1)}		
Lead screw	Thread diameter					
	ø8			ø12		
	Lead (mm)					
	2	6	12	2	6	12
Rated speed with no load (mm/s)	33	100	200	33	100	200
Rated thrust (N)	80	43	24	196	117	72
Stroke (mm)	25, 40, 50, 100, 200					
Main body (kg)*	0.67 + (0.07/50 stroke)			1.74 + (0.16/50 stroke)		
Operating ambient temperature (°C)	5 to 40 (with no condensation)					
Tolerance of rod end thread	JIS class 2					
Allowable tolerance of stroke	+1 0					
Motor	DC motor					
Applicable directional control driver model	LC3F212-5A3□			LC3F212-5A5□		
Applicable auto switch model	D-M9N, M9P, M9B					

Note 1) Equivalent to 0.4 MPa, theoretical output (lead 2)

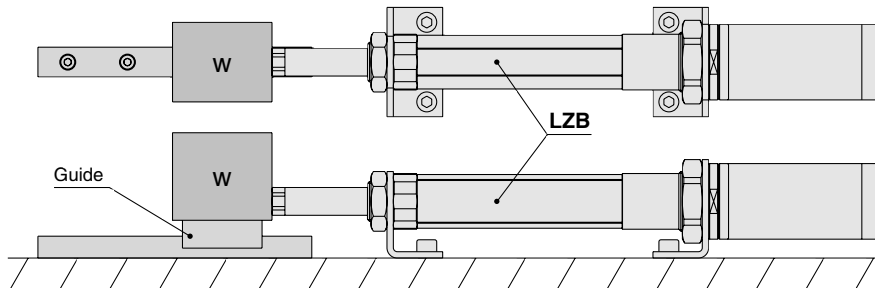
Note 2) In the table speeds are shown without a load, as rated speed, and thrusts are shown as rated thrust based on the pressure force.

Note 3) Speed will vary as they are affected by a load. Refer to page for model selection.

* Refer to page 13 for mounting bracket weight.

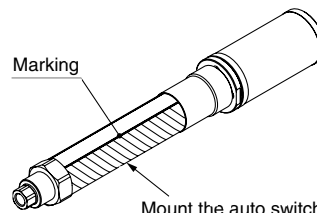
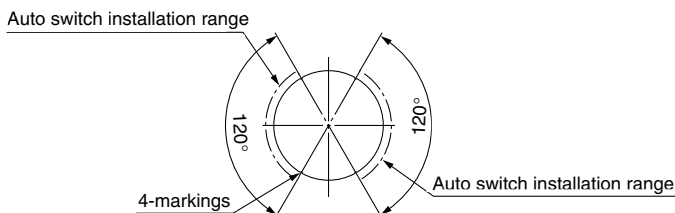
⚠ Specific Product Precautions

- 1 Do not apply any load to the rod end of the LZB series. When applying a load, use a guide to avoid the load from being applied to the rod end.



2 Auto switch mounting

There are 4 markings on the outside surface of the cylinder tube, indicating the auto switch installation range. Mount the auto switches within the range shown below.



Mount the auto switch within the installation range (shadow portion). Otherwise, the auto switch may not activate.

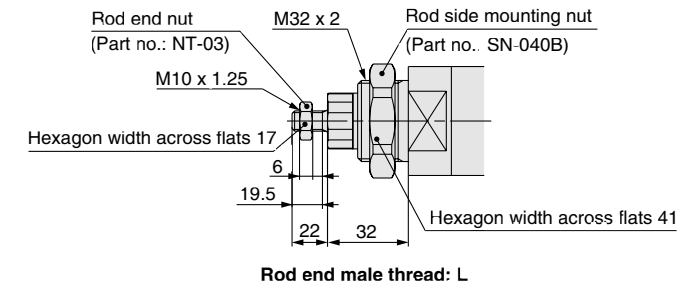
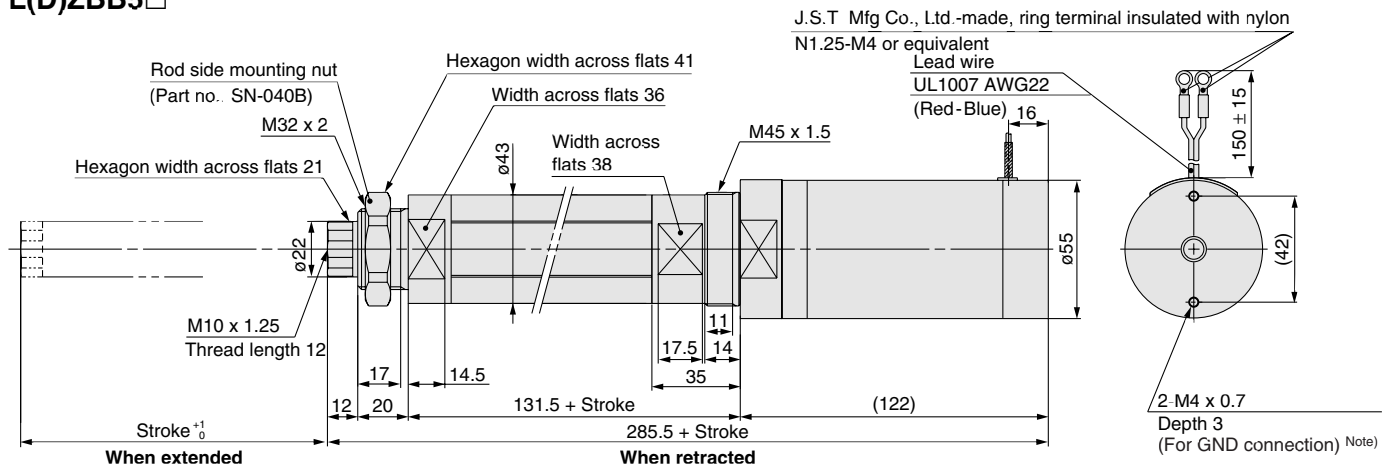
* Refer to page 15 for information on mounting an auto switch.

Series LZB

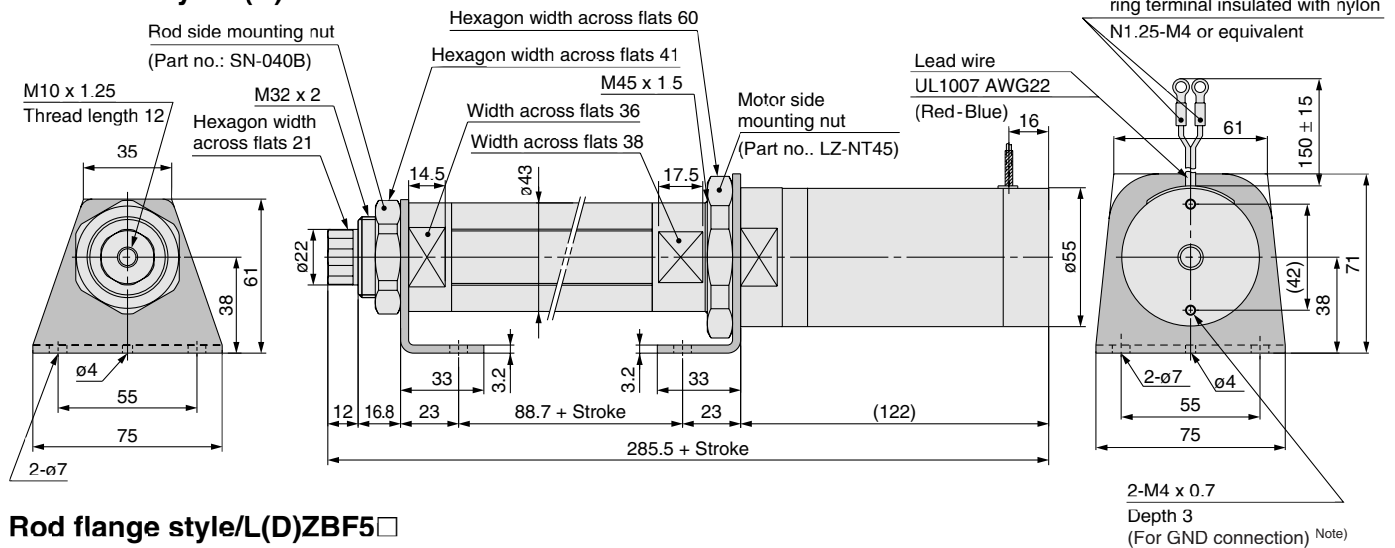
Dimensions Note) Grounding must be performed. For details, refer to the back of page 2.

L(D)ZBB5□

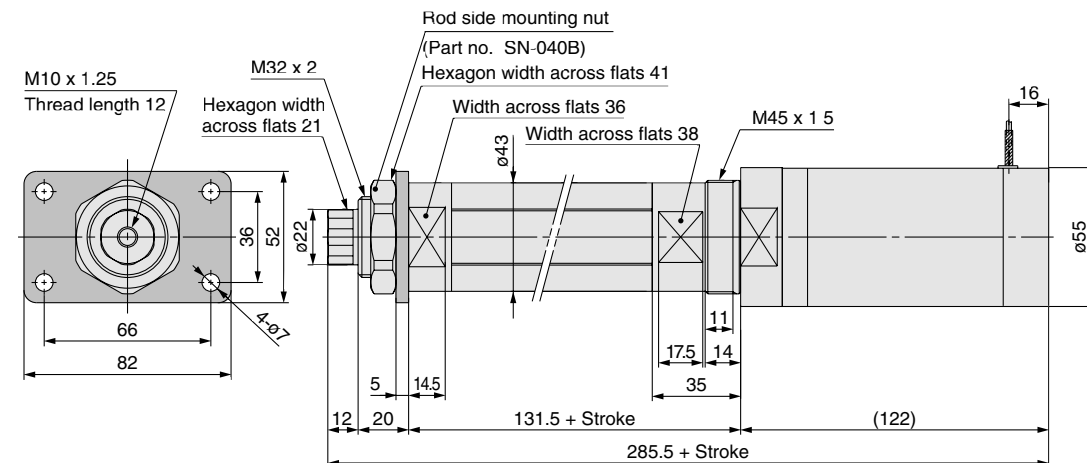
* The electrical entry direction is different depending on a product.



Axial foot style/L(D)ZBL5□

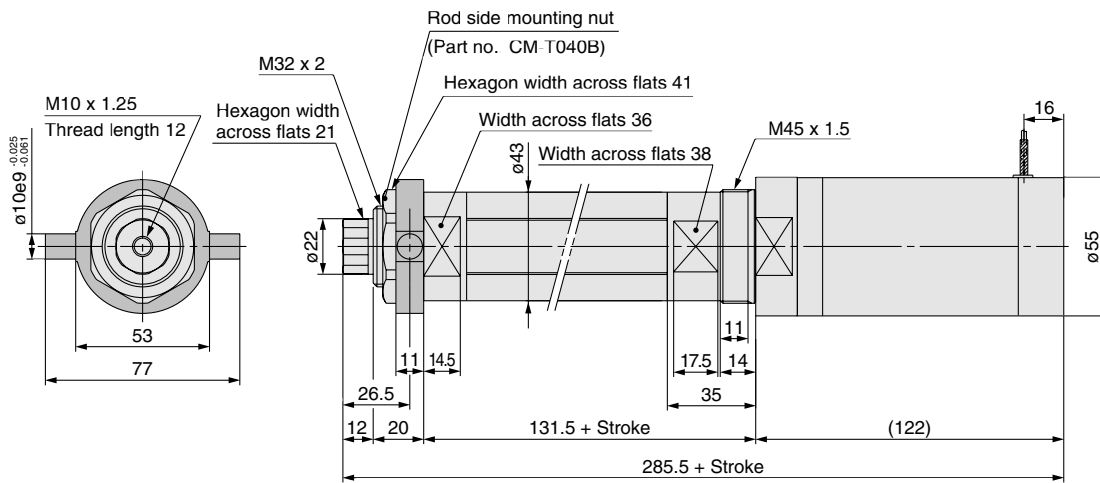


Rod flange style/L(D)ZBF5□



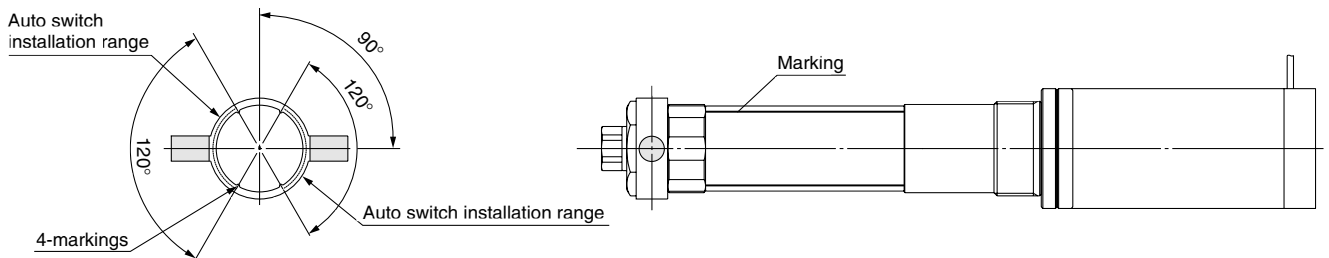
Dimensions

Rod trunnion style/L(D)ZBU5□



⚠ Caution for using a trunnion bracket

In the event of mounting a trunnion bracket, fix it to the position illustrated below before using



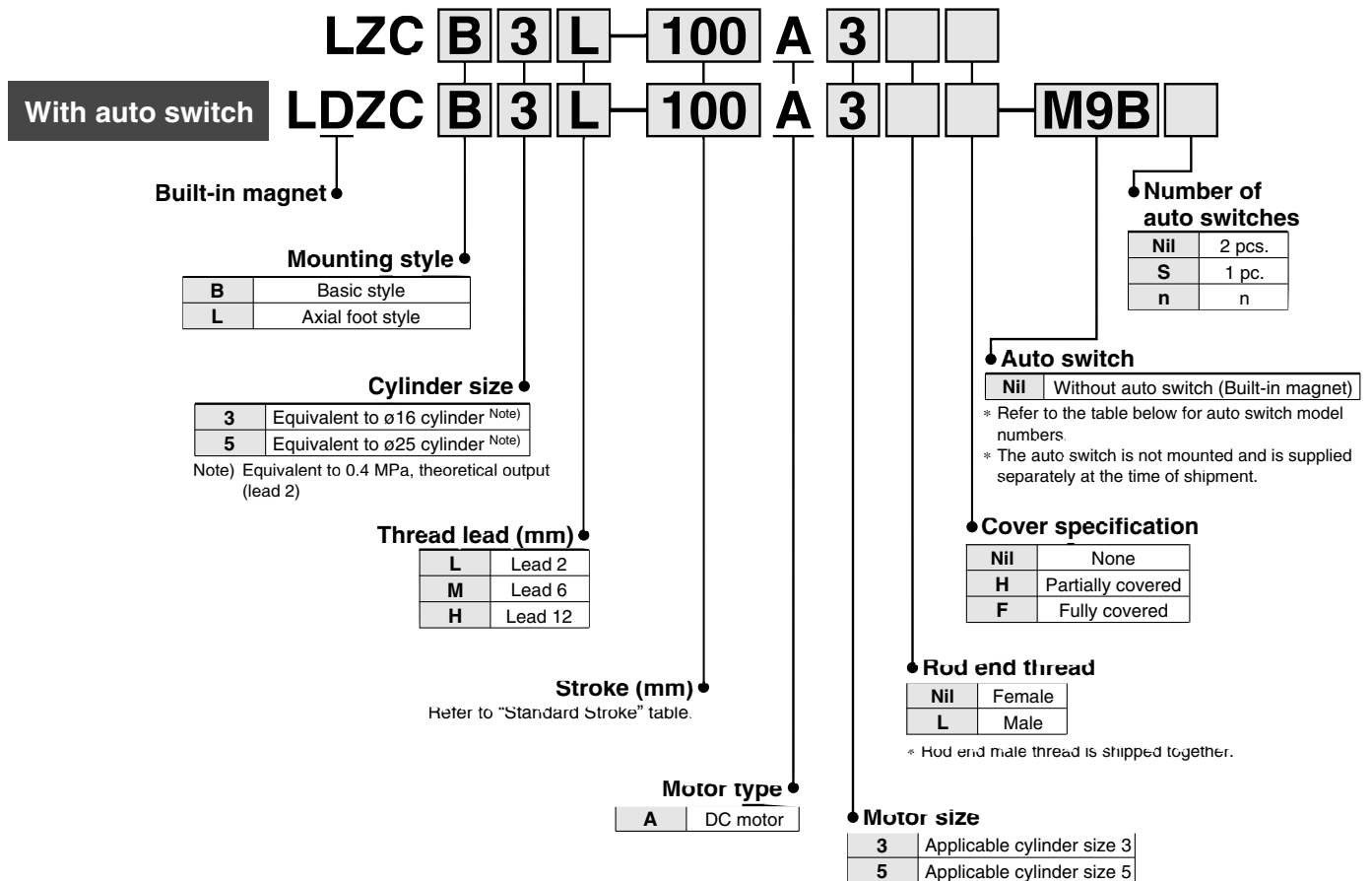
* Conditions for using a trunnion bracket are as follows:

- Maximum stroke: 150 mm
- Thread lead L (lead 2 mm) only

Electric Cylinder Series *LZC*



How to Order



Standard Stroke

Cylinder size	Standard stroke (mm) *
3, 5	25, 40, 50, 100, 200

* Other intermediate strokes can be manufactured upon receipt of order.
(Maximum manufacturable stroke: 200 mm)

Applicable Auto Switches

For detailed auto switch specifications, refer to page 16 through to 18.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m) *			Pre-wired connector	Applicable load		
					DC	AC		0.5 (Nil)	3 (L)	5 (Z)		IC circuit	Relay PLC	
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V	—	M9N	●	●	○	○	—	—
				3-wire (PNP)		12 V		M9P	●	●	○			
				2-wire		12 V		M9B	●	●	○			

* Lead wire length symbols: 0.5 m Nil (Example) M9N
3 m L M9NL
5 m Z M9NZ

* Solid state switches marked "○" are produced upon receipt of order.

Specifications



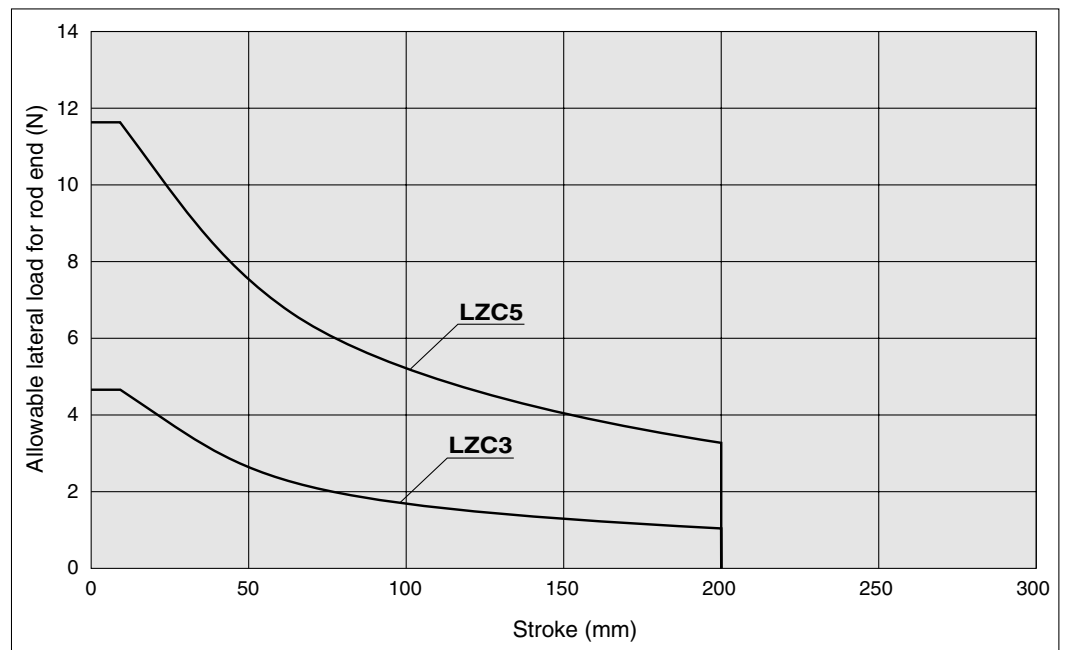
Model	L□ZC□3L	L□ZC□3M	L□ZC□3H	L□ZC□5L	L□ZC□5M	L□ZC□5H	
Size	3 (Equivalent to ø16 cylinder) ^{Note 1)}			5 (Equivalent to ø25 cylinder) ^{Note 1)}			
Lead screw	Thread diameter		ø8		ø12		
	Lead (mm)		2	6	12	2	6
Rated speed with no load (mm/s)	33	100	200	33	100	200	
Rated thrust (N)	80	43	24	196	117	72	
Stroke (mm)	25, 40, 50, 100, 200						
Main body (kg)*	0.72 + (0.03/50 stroke)			1.72 + (0.16/50 stroke)			
Lateral load for rod end (at maximum stroke) (kg)	0.1			0.24			
Operating ambient temperature (°C)	5 to 40 (with no condensation)						
Tolerance of rod end thread	JIS class 2						
Allowable tolerance of stroke	+1 0						
Motor	DC motor						
Applicable directional control driver model	LC3F212-5A3□			LC3F212-5A5□			
Applicable auto switch model	D-M9N, M9P, M9B						

Note 1) Equivalent to 0.4 MPa, theoretical output (lead 2)

Note 2) In the table speeds are shown without a load, as rated speed, and thrusts are shown as rated thrust based on the pressure force.
 Note 3) Speed will vary as they are affected by a load. Refer to page 1 for model selection.

* Refer to page 13 for mounting bracket weight.

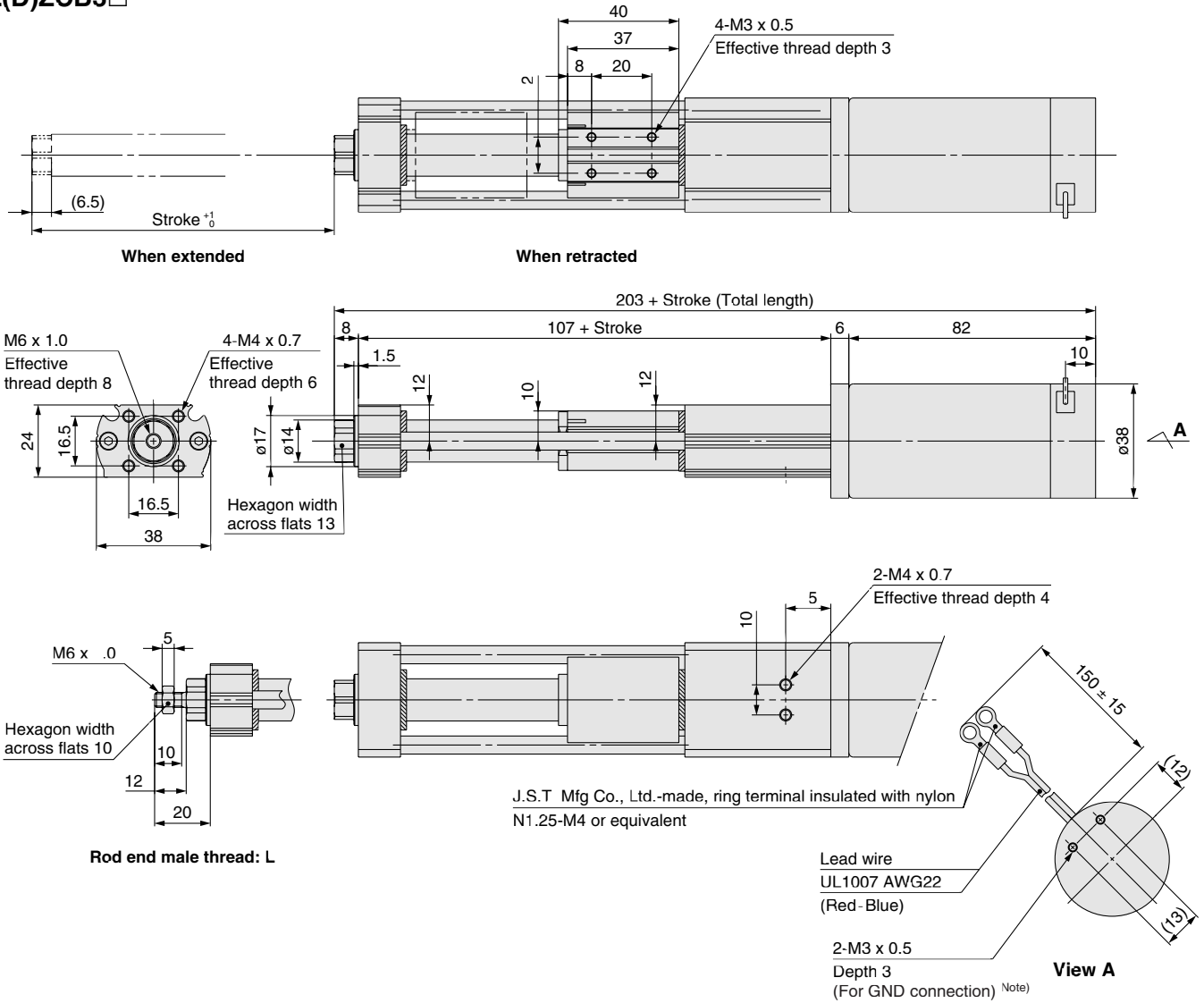
Allowable Lateral Load for Rod End



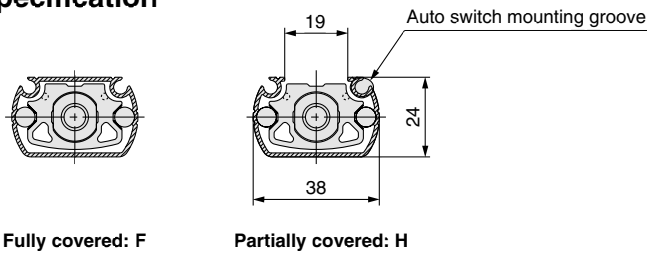
Series L ZC

Dimensions Note) Grounding must be performed. For details, refer to the back of page 2.

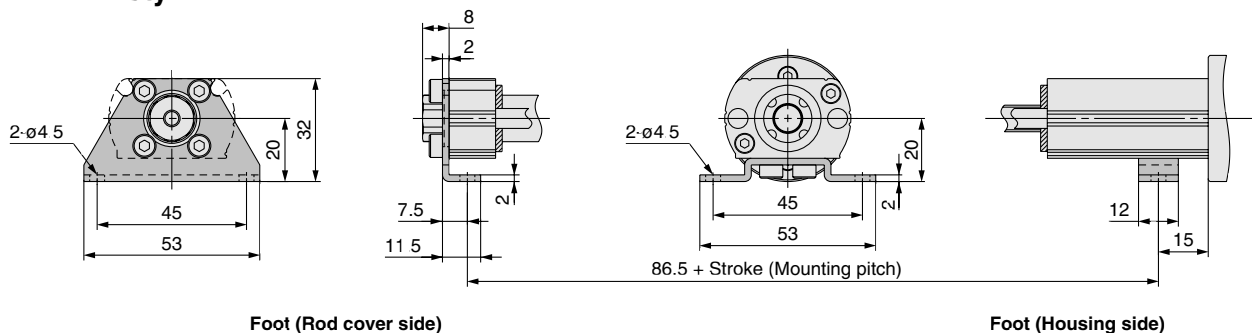
L(D)ZCB3□



Cover specification

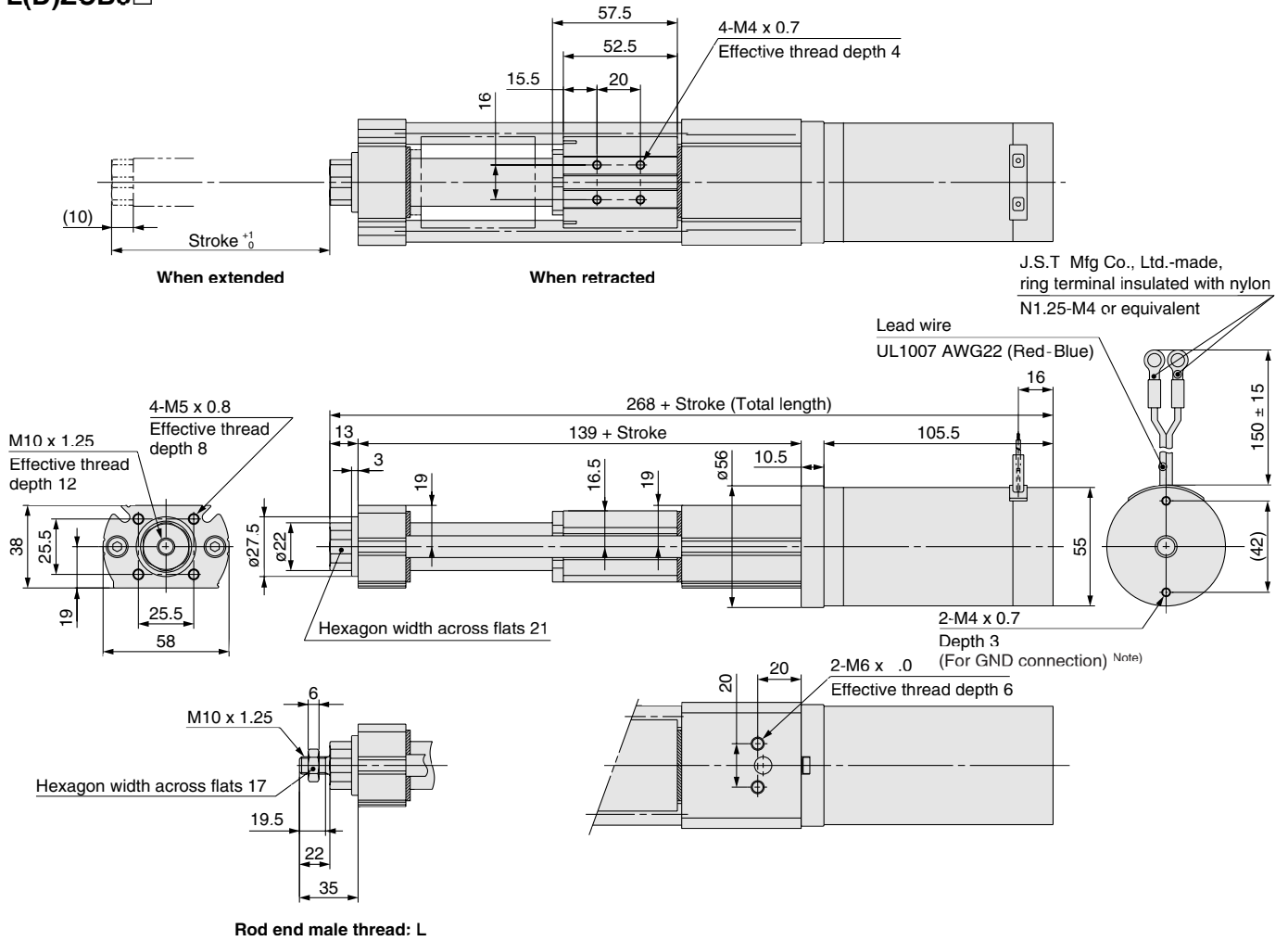


Axial foot style: L

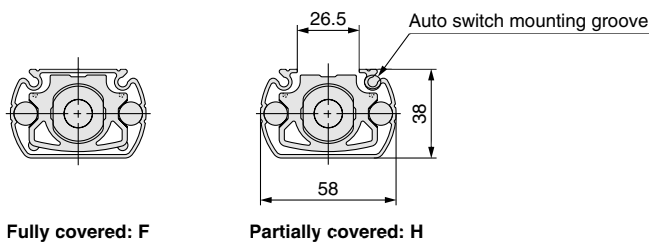


Dimensions Note) Grounding must be performed. For details, refer to the back of page 2.

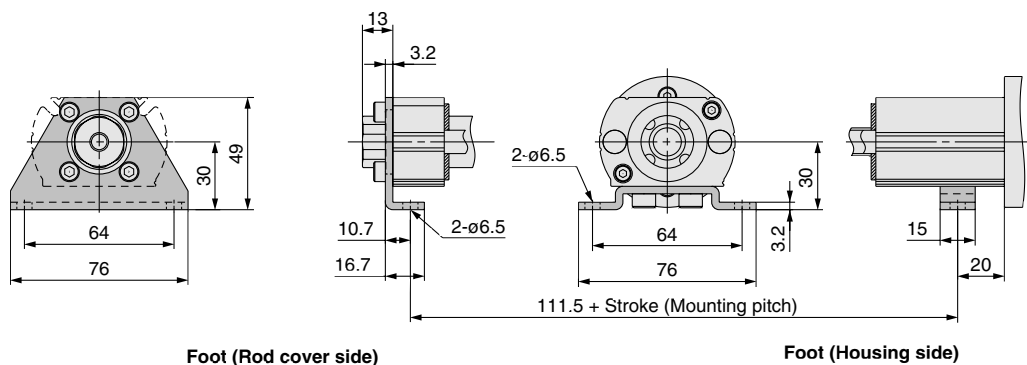
L(D)ZCB5□



Cover specification



Axial foot style: L



Series LZB/LZC

LZB/C Vertical Application Specifications

Some of the LZ series can be used in vertical applications.
However, please check before using vertically.

Never apply a force exceeding the prescribed force.

When a force exceeding the transfer thrust is applied, the cylinder and directional control driver (LC3F2) may be damaged.

Model which can be used vertically

- L(D)ZB□3L-□A3□-□□
- L(D)ZC□3L-□A3□□-□□
- L(D)ZB□5L-□A5□-□□
- L(D)ZC□5L-□A5□□-□□

Specifications

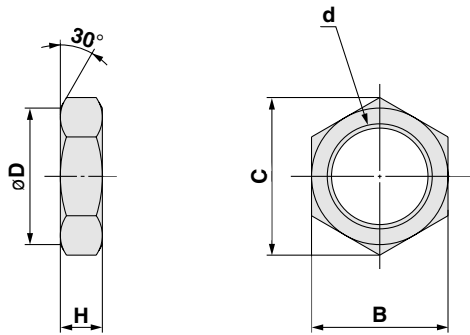
Model	L(D)ZB□3L	L(D)ZC□3L	L(D)ZB□5L	L(D)ZC□5L
Speed (mm/s)	P.1 Refer to the graph on speed – thrust.			
Transfer thrust (Vertically) (N)	40		100	
Holding force* (N)	40		100	
Standard stroke (mm)	25, 40, 50, 100, 200			
Operating ambient temperature (°C)	5 to 40 (with no condensation)			
Motor	DC motor			
Applicable directional control driver model	LC3F212-5A3□		LC3F212-5A5□	
Applicable auto switch model	D-M9N, D-M9P, D-M9B			

* Holding force

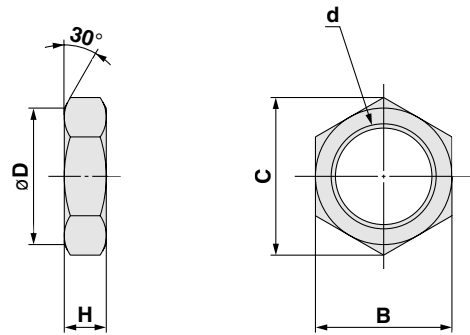
Holding force means the force which cannot be dropped even if a load should be applied vertically when a cylinder is stopped.
Therefore, for example, holding is not possible when turning off the power supply once a cylinder has been activated.
Additionally, a load may be dropped due to external impacts or vibrations.

Accessory Bracket

Mounting nut



Rod end nut



(mm)							
Name	Part no.	Applicable series	B	C	D	d	H
Rod side mounting nut	SN-020B	LZB3	26	30	25.5	M20 x 1.5	^c
Motor side mounting nut	LZ-NT30	LZB3	38	42	38	M30 x 1.5	10
Rod side mounting nut	SN-040B	LZB5	41	47.3	40.5	M32 x 2.0	1 ^c
Motor side mounting nut	LZ-NT45	LZB5	60	64	60	M45 x 1.5	10

(mm)						
Part no.	Applicable series	B	C	D	d	H
NT-015A	LZ□3	10	11.5	9.8	M6 x 1.0	^F
NT-03	LZ□5	17	19.6	16.5	M10 x 1.25	6

Mounting Bracket/Part No.

Series	LZB3	LZB5
Rod side foot	LZB-LR3 (64 g)	LZB-LR5 (112 g)
Motor side foot	LZB-LM3 (64 g)	LZB-LM5 (126 g)
Flange	LZB-F3 (40 g)	LZB-F5 (120 g)
Rod side trunnion	CM-T020B (40 g)	CM-T040B (100 g)

(): Weight for bracket

Series	LZC3	LZC5
Rod side foot	LZC-LR3 (21 g)	LZC-LR5 (71 g)
Motor side foot	LZC-LM3 (10 g)	LZC-LM5 (27 g)

(): Weight for bracket

Note) Bolt needs to be supplied by customer.

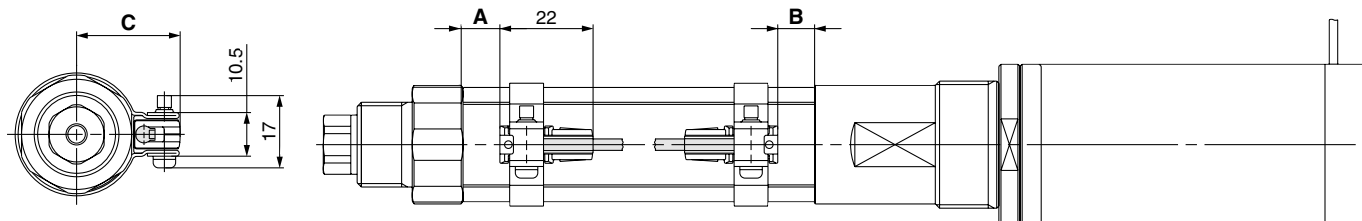
Series LZB/LZC

Auto Switch Proper Mounting Position for Stroke End Detection and Mounting Height

Solid state auto switch

D-M9□

LDZB



Auto Switch Mounting Position/Height

Model	A	B	C
LDZB□3	20	19	24
LDZB□5	33	33	32

Operating Range of Auto Switch *

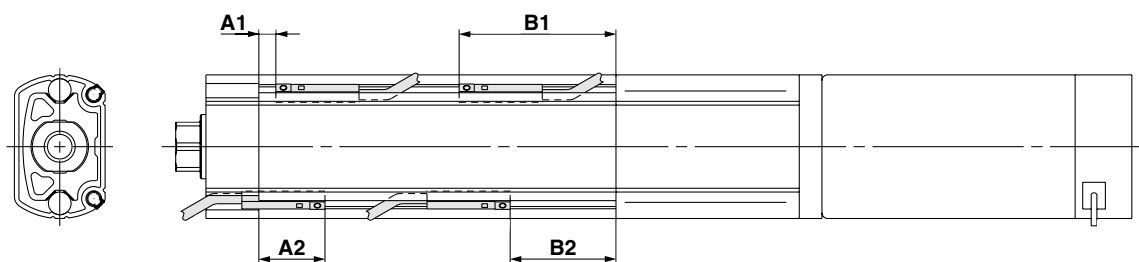
Model	A
LDZB□3	3
LDZB□5	5

* The operating range is a guide including hysteresis, but is not guaranteed. There may be substantial variation depending on the surrounding environment (assuming approximately ±30% dispersion).

Minimum Stroke for Auto Switch Mounting

Model	1 pc.	2 pcs. (Different sides)	2 pcs. (Same sides)
LDZB□3	10	15	45
LDZB□5	10	15	45

LDZC



Auto Switch Mounting Position for Stroke End Detection

Model	A1	A2	B1	B2
LDZC□3	4.5	17.5	41.5	28
LDZC□5	7	57	20	44

Operating Range of Auto Switch *

Model	A
LDZC□3	2
LDZC□5	2

* The operating range is a guide including hysteresis, but is not guaranteed. There may be substantial variation depending on the surrounding environment (assuming approximately ±30% dispersion).

Minimum Stroke for Auto Switch Mounting

Model	1 pc.	2 pcs.
LDZC□3	5	10
LDZC□5	5	10

Mounting and Moving Auto Switches (Series LDZB Only)

Mounting the Auto Switch

1. Attach a switch bracket to the switch holder.
(Fit the switch bracket to the switch holder.)
2. Mount an auto switch mounting band to the cylinder tube.
3. Set the switch holder ① between the reinforcing plates of the band mounted to the cylinder.
4. Insert a switch mounting screw in the hole of the reinforcing plate through the switch holder, and thread it into the other plate. Tighten the screw temporarily.
5. Remove the set screw attached to the auto switch.
6. Attach a switch spacer to the auto switch.
7. Insert the auto switch with the switch spacer from the back of the switch holder.
(Insert the auto switch with an angle of approximately 10 to 15°. See figure 1.)
8. To secure the auto switch, tighten the switch mounting screw with the specified torque (0.8 N·m to 1.0 N·m).

Adjusting the Switch Position

1. Unloosen the switch mounting screw 3 turns to adjust the switch set position.
2. Tighten the screw as described above (8.) after adjustment.

Removing the Auto Switch

1. Remove the switch mounting screw from the switch holder.
2. Move the switch back towards the position where it stops at the lead wire side.
3. Hold up the lead wire side of the switch at the angle of around 45°.
4. Maintain the angle, and pull back the switch obliquely at the same angle.

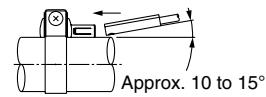
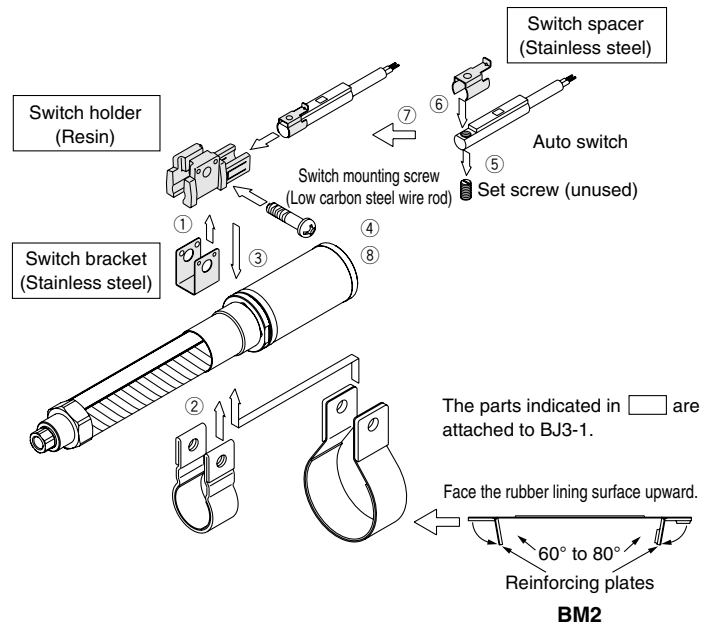


Figure 1. Switch insert angle



Auto Switch Mounting Bracket/Part No.

Applicable series	Mounting bracket	Mounting band
LDZB□3	BJ3-1	BM2-025
LDZB□5	(Switch holder Switch spacer Switch bracket)	L1ZB45-0318

Order one mounting bracket and one mounting band per one switch.

⚠ Specific Product Precautions

Be sure to read before handling. Refer to “SMC Best Pneumatics 2004” catalog Vol. 6/7/8/9/10/11/12 for Safety Instructions and Auto Switches Precautions.

⚠ Caution

1. **Mount the auto switches at the center of the operating range.**
Check ON and OFF points before setting auto switches so that positions can be detected at the center of the operating range.
If mounted at the end of the operating range, the signal detection will be unstable.
2. **Be aware of the environment temperature and thermal cycle.**
Operate auto switches and auto switch cylinders within the operating temperature range.
The reliability of the auto switches may be adversely affected, especially, when they are exposed to thermal shock, severe temperature and humidity cycle etc.
3. **Be aware of the suitability of oil, chemicals etc.**
Resin and rubber materials are used for the auto switches and switch mounting brackets. Therefore, if there are chemicals such as oil or organic solvents in the environment, the resin and rubber materials may be adversely affected.

4. **During maintenance, securely tighten the switch mounting screws periodically.**
Use switch mounting brackets with the proper tightening torque. In addition, securely tighten the switch mounting screws periodically.
5. **Be careful not to pull or strain the lead wires.**
Be careful not to apply excess tensile force (over 10 N) to the auto switches. Also, adjust the position of the auto switches by sufficiently loosening the screws (3 turns or more).
6. **Do not use the auto switches in environments with strong vibration and impact.**
Do not use the auto switches in environments where excess vibration and impact force outside of the specifications are applied.
7. **Be sure to use a switch spacer and a switch bracket.**
Confirm that a switch spacer is mounted to the end of the auto switch before fastening the auto switch. If the switch bracket is not mounted, the auto switch may move after installation.

Series LZB/LZC

Auto Switch Specifications

Auto Switch Common Specifications

Type	Solid state switch
Leakage current	3-wire: 100 μ A or less 2-wire: 0.8 mA or less
Operating time	1 ms or less
Impact resistance	1000 m/s ²
Insulation resistance	50 M Ω or more at 500 VDC Mega (between lead wire and case)
Withstand voltage	1000 VAC for 1 minute (between lead wire and case)
Ambient temperature	-10 to 60°C
Enclosure	IEC529 standard IP67, JIS C 0920 waterproof construction

Lead Wire Length

Lead wire length indication

(Example) D-M9P **L**

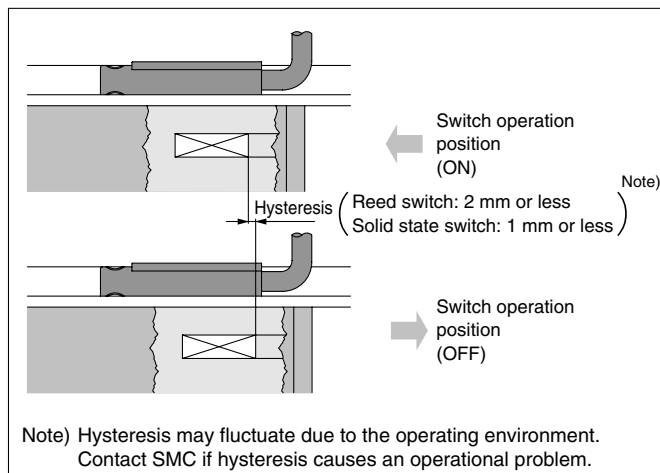
Lead wire length

Nil	0.5 m
L	3 m
Z	5 m

Note 1) Applicable auto switch with 5 m lead wire "Z"
Solid state switch. Manufactured upon receipt of order as standard.

Auto Switch Hysteresis

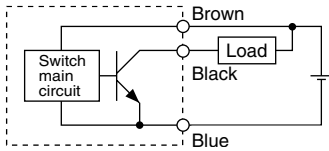
The hysteresis is the difference between the position of the auto switch as it turns "on" and as it turns "off". A part of operating range (one side) includes this hysteresis.



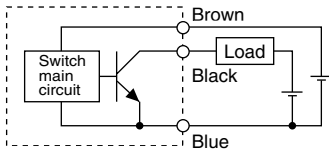
Series LZB/LZC Auto Switch Connections and Examples

Basic Wiring

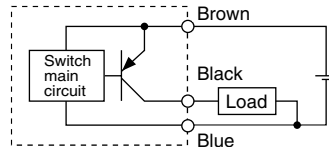
Solid state 3-wire, NPN



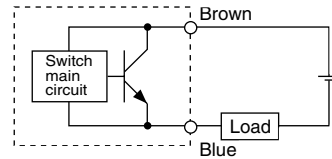
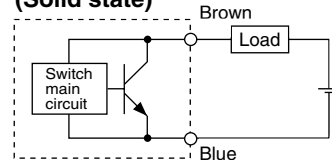
(Power supplies for switch and load are separate.)



Solid state 3-wire, PNP

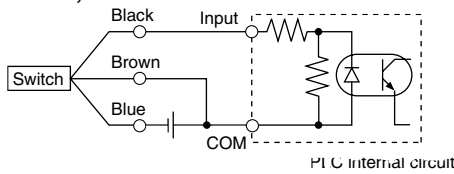


2-wire (Solid state)

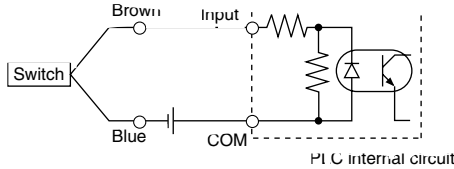


Example of Connection to PLC (Programmable Logic Controller)

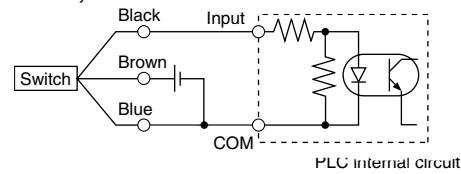
• Sink input specifications 3-wire, NPN



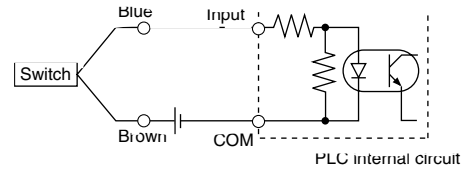
2-wire



• Source input specifications 3-wire, PNP



2-wire

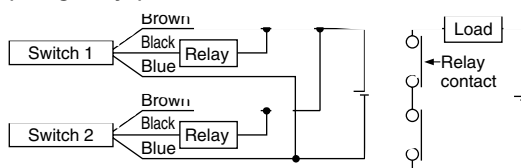


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

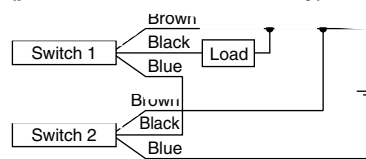
Example of AND (Serial) and OR (Parallel) Connection

• 3-wire

AND connection for NPN output (using relays)

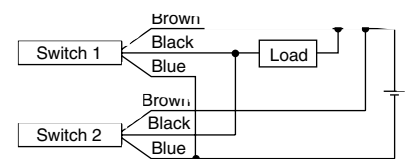


AND connection for NPN output (performed with switches only)

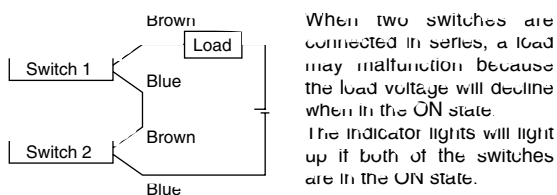


The indicator lights will light up when both switches are turned ON.

OR connection for NPN output



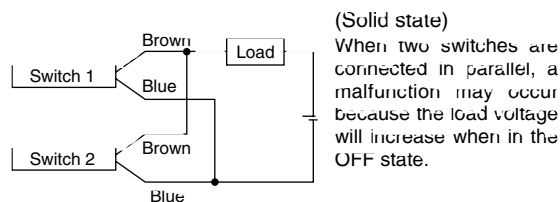
2-wire with 2-switch AND connection



$$\begin{aligned} \text{Load voltage at ON} &= \frac{\text{Power supply voltage}}{\text{Internal voltage drop} \times 2 \text{ pcs.}} \\ &= \frac{24 \text{ V}}{4 \text{ V} \times 2 \text{ pcs.}} \\ &= 16 \text{ V} \end{aligned}$$

Example. Power supply is 24 VDC
Internal voltage drop in switch is 4 V.

2-wire with 2-switch OR connection



$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \\ &\quad \times \text{Load impedance} \\ &= 1 \text{ mA} \times 2 \text{ pcs.} \times 3 \text{ k}\Omega \\ &= 6 \text{ V} \end{aligned}$$

Example: Load impedance is 3 kΩ.
Leakage current from switch is 1 mA.

Solid State Switch: Direct Mounting Style D-M9N/D-M9P/D-M9B



For details about certified products conforming to international standards, visit us at www.smcworld.com.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□ (With indicator light)			
Auto switch part no.	D-M9N	D-M9P	D-M9B
Electrical entry direction	In-line		
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less		2.5 to 40 mA
Internal voltage drop	0.8 V or less		4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less
Indicator light	Red LED illuminates when ON.		

Grommet

- 2-wire load current is reduced (2.5 to 40 mA)
- Lead-free
- UL certified (style 2844) lead cable is used.



Caution

Operating Precautions

Fix the switch with the existing screw installed on the switch body. The switch may be damaged if a screw other than the one supplied, is used.

Lead wires

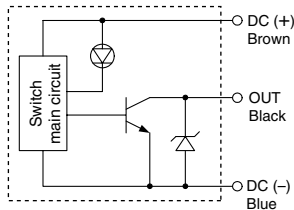
- Oilproof heavy duty vinyl cable: $\varnothing 2.7 \times 3.2$ ellipse, 0.15 mm²,
D-M9B 0.15 mm² x 2 cores
D-M9N, D-M9P 0.15 mm² x 3 cores

Note 1) Refer to page 16 for solid state switch common specifications.

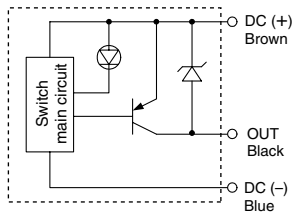
Note 2) Refer to page 16 for lead wire lengths.

Auto Switch Internal Circuit

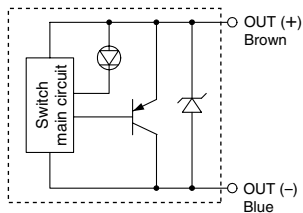
D-M9N



D-M9P



D-M9B



Weight

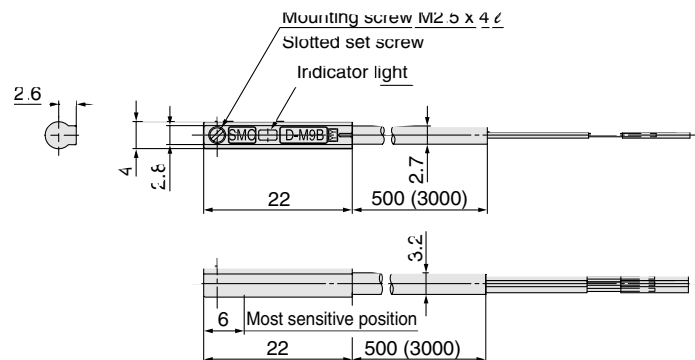
Unit: g

Auto switch part no.	D-M9N	D-M9P	D-M9B	
Lead wire length (m)	0.5	8	8	7
	3	41	41	38
	5	68	68	63

Dimensions

Unit: mm

D M9□



Directional Control Driver for Electric Cylinder

Series **LC3F2**



LC3F212-5A3□

LC3F212-5A5□

Able to control the stroke with only ON/OFF signals

Directional control driver like a solenoid valve

Able to set thrust arbitrarily.

Thrust can be adjusted by adjustment trimmer

Able to control with only 3 different types of input signals

① Directional instruction ② Thrust selection ③ Output ON/OFF

Can be operated manually

Maintenance performance for wiring check has been improved

Product Specifications

Model	LC3F212-5A3□	LC3F212-5A5□
Power supply voltage	24 VDC ± 10%	
Front side label color	Max. 1.3 A	Max. 2.3 A
Input signal	Gray	
Selection of thrust	Blue	
Operating temperature range	Photocoupler input 24 VDC ±10% Max. 8 mA/point	
Operating humidity range	100% or set value (setting range 10 to 70% F.S.)	
Environment	+5 to 40°C	
Display LED	35 to 85% Rh (with no condensation)	
Weight	Indoor (Direct sunlight should be avoided.) No corrosive gas, inflammable gas, oil mist or dust particle	
	POWER, A-PHASE, OFF, SET	
	145 g	

Directional Control Driver for Electric Cylinder

Series LC3F2



How to Order

LC3 F2 12 5 A3 B

Series Power supply Applicable motor Housing set (Connector set)

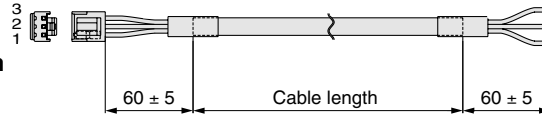
F2 Small sized DC motor driver	5 24 VDC	A3 DC motor (cylinder size 3)	B Nothing included.
		A5 DC motor (cylinder size 5)	

Option

● Cable for power supply terminal

LC3F2 1 C1-02-1

Cable type	Cable length
C1 Cable for CN1 power supply terminal	01 1 m 02 2 m



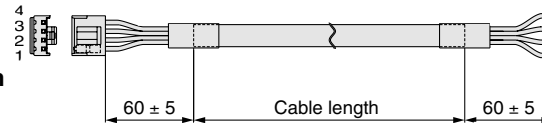
CN1 Power Supply Terminal Table

Terminal	Function	Pin number	Optional cable color
FG	Frame ground	1	Yellow/Green
DC (+)	Driver power supply (+24 V)	2	Brown
DC (-)	Driver power supply (0 V)	3	Blue

● Cable for control terminal

LC3F2 1 C2-02-1

Cable type	Cable length
C2 Cable for CN2 control terminal	01 1 m 02 2 m



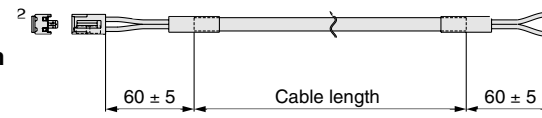
CN2 Control Terminal Table

Terminal	Function	Pin number	Optional cable color
COM	Common terminal	1	White
ON	Output ON command input ON: Motor output OFF: No motor output	2	Red
SET	Adjusted thrust command input ON: Adjusted thrust OFF: 100% thrust (Max. thrust)	3	Yellow
A-PHASE	Traveling direction command input ON: A-PHASE (Retracted side) OFF: B-PHASE (Extended side)	4	Orange

● Cable for motor output terminal

LC3F2 1 C3-02-1

Cable type	Cable length
C3 Cable for CN3 motor output terminal	02 2 m 05 5 m



CN3 Motor Output Terminal Table

Terminal	Function	Pin number	Optional cable color
OUTA	Motor output A (Blue)	1	Blue
OUTB	Motor output B (Red)	2	Red

● Housing set (Connector set)

LC3F2 1-C0	Housing for power supply terminal (Connector)	1 pc.	VHR-3N: J.S.T. Mfg Co., Ltd.)
	Housing for control terminal (Connector)	1 pc.	VHR-4N: J.S.T. Mfg Co., Ltd.)
	Housing for motor output terminal (Connector)	1 pc.	VHR-2N: J.S.T. Mfg Co., Ltd.)
	Contact (Connector pin)	12 pcs.	BVH-21T-P1.1: J.S.T. Mfg Co., Ltd.)

⚠ Caution

- **Do not apply repetitive bending or pulling stress to the cable.**
Wiring with repetitive bending or pulling stress to the cable will likely cause the cable to break.
- **In the event of crimping the contact (connector pin) and wire use the specific tools as well as the recommended cable**
Crimping tool: YC-160R (J.S.T. Mfg Co., Ltd.)
Pulling tool: EJ-NV (J.S.T. Mfg Co., Ltd.)
Recommended cable connection (common for individual cable) AWG2² (0.5 mm²) Insulated wire O.D. 1.7 to 3.0 mm with shield
Heat resistance is more than 80°C.
Maximum cable length (

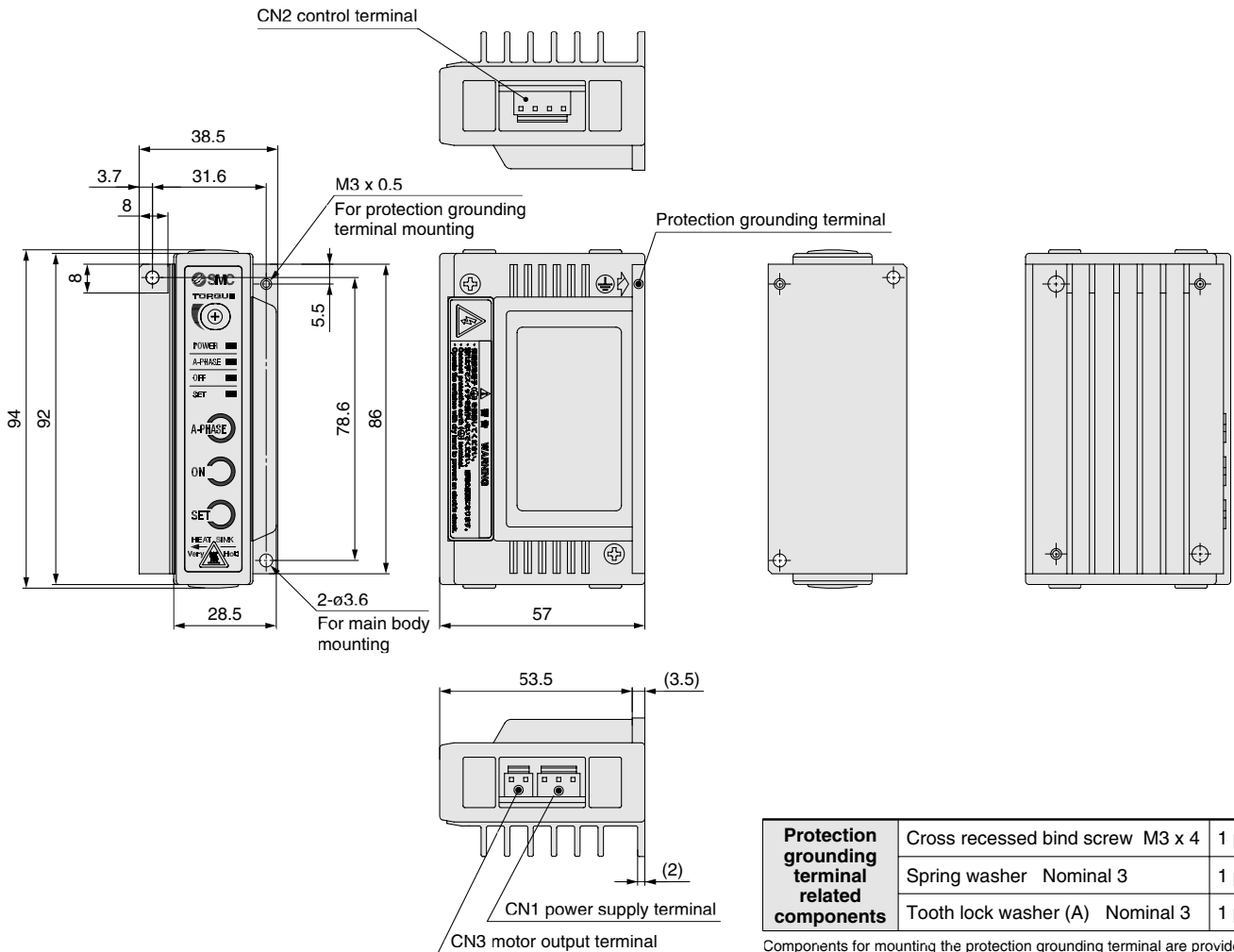
CN1 cable for power supply terminal	2 m
CN2 cable for control terminal	2 m
CN3 cable for motor output terminal	5 m

- **Shield is attached with an optional cable for the LC3F2 series.**
When grounding a shield, remove the sheath and use a metal U-crip or P-crip.

Applicable Cylinder Table

Cylinder part no.	Applicable directional control driver
L□Z□3□-□□□A3□□-□□□□	LC3F212-5A3□
L□Z□5□-□□□A5□□-□□□□	LC3F212-5A5□

Dimensions

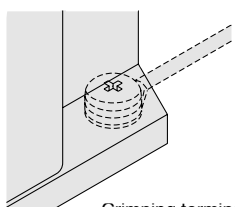


How to Mount

Mount the directional control driver vertically against the wall, using two mounting screw holes, so the front side (on which its adjustment trimmer and manual switch are located) is facing to an operator

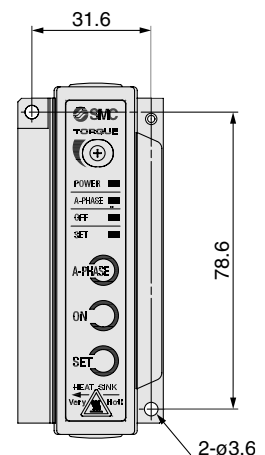
Applicable mounting screw: M3 (2 pcs.) [to be supplied by customer]

* How to mount a protection grounding terminal



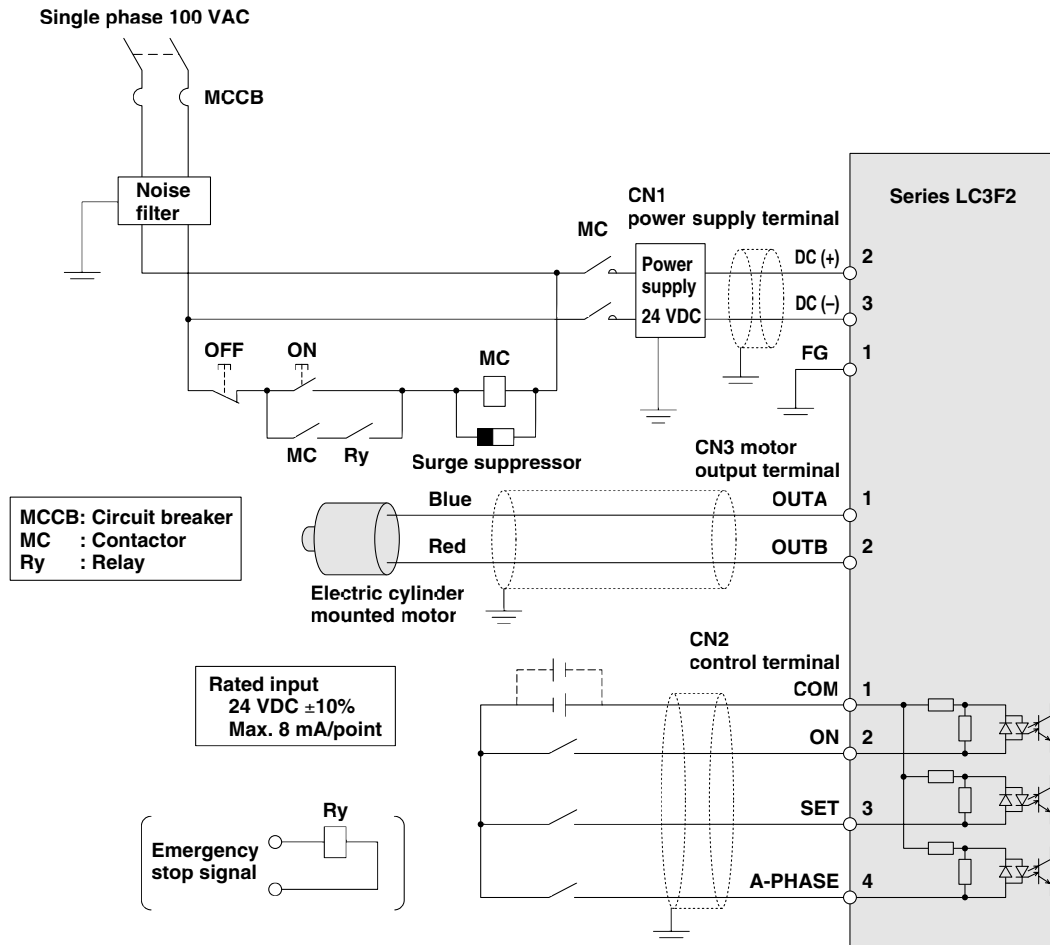
- Cross recessed bind screw (Accessory) M3 x 4
- Spring washer Nominal 3 (Accessory)
- Crimping terminal
- Tooth lock washer (A) (Accessory) Nominal 3

Crimping terminal and grounding cable are supplied by customer



Series LC3F2

Wiring Example

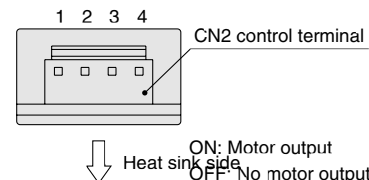
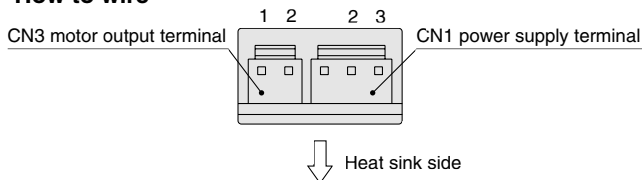


For System Chart, refer to Features 1

⚠ Caution

There is no emergency stop function or power supply switch in the directional control driver. Please be sure to provide an emergency stop and power supply insulation (insulator) device as a total machine equipment, referencing the above wiring examples. Also, please be sure to turn off the power supply for the whole equipment prior to wiring the directional control driver.

How to wire



CN1 Power Supply Terminal

Pin no.	Terminal	Function
1	FG	Frame ground
2	DC (+)	Driver power supply (+24 V)
3	DC (-)	Driver power supply (0 V)

Housing: VHR-3N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1 (J.S.T. Mfg Co., Ltd.)

CN3 Motor Output Terminal

Pin no.	Terminal	Function
1	OUTA	Motor output A (Blue wire)
2	OUTB	Motor output B (Red wire)

Housing: VHR-2N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1 (J.S.T. Mfg Co., Ltd.)

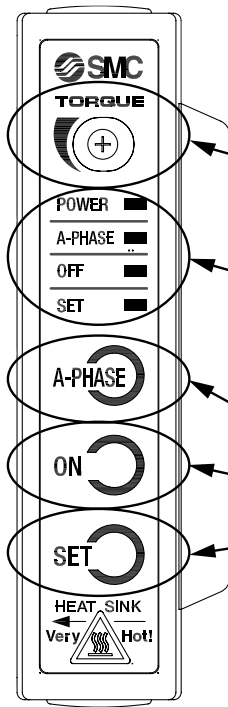
CN2 Control Terminal

Pin no.	Terminal	Function
1	COM	Common terminal
2	ON	Output ON command input
3	SET	Adjusted thrust command input
4	A-PHASE	Traveling direction command input

Housing: VHR-4N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1.1 (J.S.T. Mfg Co., Ltd.)

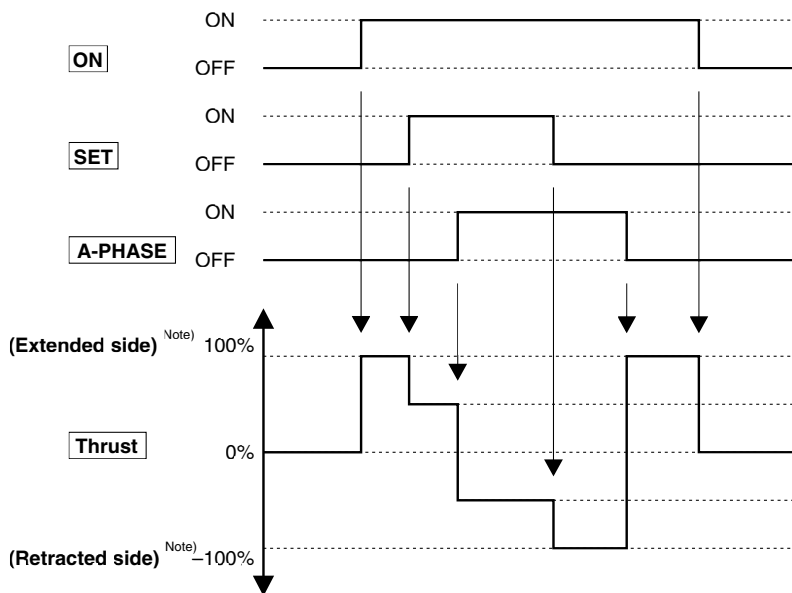
Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11.

Description of Each Part and its Function



Category	Description	Details
Trimmer	Thrust adjustment trimmer	Thrust changes through adjustment.
Indicator light	POWER	Light illuminates when power is supplied.
	A-PHASE	Light illuminates by A-PHASE command. (Travelling to the retracted side when illuminated)
	OFF	Light illuminates when turning OFF. (No motor output is generated when illuminated.)
	SET	Light illuminates by SET command. (Thrust set by the thrust adjustment trimmer, when illuminated.)
Manual switch	A-PHASE	A-PHASE command while pressing (Travelling to the retracted side)
	ON	ON command while pressing (Motor output will be generated.)
	SET	SET command while pressing (Thrust set by the thrust adjustment trimmer will be outputted.)

Timing Chart



Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11

CN2 Control Terminal

Pin no.	Terminal	Function	
1	COM	Common terminal	
2	ON	Output ON command input	ON: Motor output OFF: No motor output
3	SET	Adjusted thrust command input	ON: Adjusted thrust OFF: 100% thrust (Max. thrust)
4	A-PHASE	Traveling direction command input	ON: A-PHASE (Retracted side) ^{Note)} OFF: B-PHASE (Extended side) ^{Note)}

Housing: VHR-4N (J.S.T. Mfg Co., Ltd.)

Contact: BVH-21T-P1.1 (J.S.T. Mfg Co., Ltd.)


Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11.





Electric Cylinders

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 10218-1992 ^{Note 1)}, JIS B 8433-1993 ^{Note 2)} and other safety practices.

 **Caution** : Operator error could result in injury or equipment damage.

 **Warning** : Operator error could result in serious injury or loss of life.

 **Danger** : In extreme conditions, there is a possibility of serious injury or loss of life.

Note 1) ISO 10218-1992: Manipulating industrial robots-Safety

Note 2) JIS B 8433-1993: Manipulating industrial robots--Safety

Warning

1. The compatibility of the electric cylinder with an application should be examined by the system planner, or by the person who determines the specifications.

Since the products specified here are used in various operating conditions, their compatibility with a specific system must be based on either specifications, post analysis and/or tests to meet a specific requirement. The expected performance and safety assurance is the responsibility of the person who has determined the compatibility between the cylinder and the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with consideration towards any possible equipment failure when configuring the system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of an electric cylinder should be performed by a trained and experienced operator.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment will be removed, confirm the safety process as mentioned above, and shut off the power supply for this equipment.
3. Before machinery/equipment is restarted, confirm that safety measures are in effect.

4. Contact SMC if the product will be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, medical equipment, food and beverages, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

5. Review and confirm the product's documentation thoroughly before using the product, or contact our distributors, or SMC for confirmation for a problem free application.

6. Use the product after thoroughly reviewing and confirming the precautions in this catalog.

7. Some products in this catalog are for particular applications and sites only. Check and confirm with the distributor or SMC.



Electric Cylinder Precautions 1

Be sure to read this before handling.

General

Caution on Handling

⚠ Caution

1. In order to ensure proper operation, be certain to read the instruction manual carefully. As a rule, handling or usage/operation other than those contained in the instruction manual are prohibited.
2. If the cylinder will be used in an environment where it will be exposed to chips, dust, cutting oil (water, liquids), etc., a cover or other protection should be provided.
3. Operate with cables secured. Avoid bending cables at sharp angles where they enter the cylinder, and also be sure that cables do not move easily.

Caution on Design

⚠ Warning

1. In cases where dangerous conditions may result from power failure or malfunction of the product, install safety equipment to prevent damage to machinery and human injury. Consideration must also be given to drop prevention with regard to suspension equipment and lifting mechanisms.
2. Consider possible loss of power sources.
Take measures to protect against human injury and machine damage in the event that there is a loss of air pressure, electricity or hydraulic power.
3. Consider emergency stops.
Design so that human injury and/or damage to machinery and equipment will not be caused when machinery is stopped by a safety device under abnormal conditions such as a power outage or a manual emergency stop.
4. Consider the action when operation is restarted after an emergency stop or abnormal stop.
Design the machinery so that human injury or equipment damage will not occur upon restart of operation.

Selection

⚠ Warning

1. Confirm the specifications.
The products in this catalog should not be used outside of the range of specifications, since this may cause damage malfunction, etc. (Refer to the specifications.)

Mounting

⚠ Caution

1. Make sure that cables are not caught by cylinder movement.
2. Do not use in locations where there is vibration or impact shock. Contact SMC before using in this kind of environment, as damage may result.
3. Give adequate consideration to the arrangement of wiring, etc., when mounting. If wiring is forced into inappropriate arrangement, this may lead to breaks in the wiring and result in malfunction.

Operating Environment

⚠ Caution

1. Avoid use in the following environments.
 1. Locations with a lot of debris or dust, or where chips may enter.
 2. Locations where the ambient temperature exceeds the operating temperature range specified in each model. (Refer to the specifications.)
 3. Locations where the ambient humidity exceeds the operating humidity range specified in each model. (Refer to the specifications.)
 4. Locations where corrosive or combustible gases are generated.
 5. Locations where strong magnetic or electric fields are generated.
 6. Locations where direct vibration or impact shock, etc., will be applied to the cylinder unit.
 7. Locations where a lot of dusts, water drops and oil drops are applied to a product.

Maintenance

⚠ Warning

1. Perform a maintenance according to the procedures indicated in the instruction manual.
If handled improperly, malfunction and damage of machinery or equipment may occur.
2. Removal of equipment
When equipment is removed, first confirm that measures are in place to prevent dropping or runaway of driven objects, etc., and then proceed after shutting off the electric power. When starting up again, proceed with caution after confirming that conditions are safe.

Grounding

⚠ Warning

1. Be sure to ground an electric cylinder.
2. Dedicated grounding should be used as much as possible. Grounding should be to a type 3 ground. (Ground resistance of 100 Ω or less.)
3. Grounding should be as close as possible to the electric cylinder, and the ground wires should be as short as possible.



Electric Cylinder Precautions 2

Be sure to read this before handling.

Cylinder

Caution on Design

⚠ Warning

1. **There is a possibility of dangerous sudden action by cylinders if sliding parts of machinery are twisted due to external forces, etc.**

In such cases, human injury may occur, e.g., by catching hands or feet in the machinery, or damage to the machinery itself may occur. Therefore, the machine should be adjusted for smooth operation and designed to avoid such dangers.

2. **A protective cover is recommended to minimize the risk of human injury.**

If a driven object and moving parts of a cylinder pose a danger of human injury, design the structure to avoid contact with the human body.

3. **Securely tighten all stationary parts and connected parts of cylinders so that they will not become loose.**

Avoid use in locations where direct vibration or impact shock, etc., will be applied to the body of the cylinder.

Operation

⚠ Caution

1. **Conduct the following inspection before cylinder/directional control driver is operated.**
 - a) Confirm that the power supply line or each signal line for cylinder/directional control driver is not broken.
 - b) Confirm that the power supply line or each signal line for cylinder/directional control driver is not loosened.
 - c) Confirm that the cylinder/directional control driver is not mounted loosely.
 - d) Confirm that the cylinder/directional control driver is operated correctly.
 - e) Confirm the function of the emergency stop.
2. **Take measures such as installing a fence, etc., to prevent any person from entering the operational area of the cylinder/directional control driver and related equipment.**
3. **If a person should enter an area as mentioned above 2., take measures to ensure that the emergency stop is controlled by a sensor, etc.**
4. **In case the cylinder/directional control driver is stopped by abnormalities, take necessary measures to prevent danger from related equipment.**
5. **In case of abnormalities of related equipment, take necessary measures to prevent danger from a cylinder/directional control driver.**
6. **Take necessary measures to prevent broken or cut power lines or signal lines of the cylinder/directional control driver from pinching, shearing, curling, scratching and grazing.**
7. **In case there is abnormal heat, fume and flame, etc., in the cylinder/directional control driver, cut off the power supply immediately.**
8. **In the event of an installation, adjustment, inspection or maintenance of a cylinder/directional control driver, as well as related equipment, be sure to cut off the power supply for the cylinder/directional control driver and related equipment and take measures such as locking or safety-lock, etc., so that persons other than workers are not able to restart the operation again. Furthermore, display the information for doing those jobs at the places where anyone can see easily.**

Operation

⚠ Caution

9. **In case several persons are doing the job, determine the procedure, signs, measures against abnormality and restarting measures in advance. Then let the person who is not doing the job supervise that job.**

Caution on Handling

⚠ Caution

1. **The cylinder can be used with a load directly applied to it, as long as it is within the allowable range. However, it is necessary to design an appropriate connecting method and use careful alignment when a load with external support and guide mechanisms is connected. The longer the stroke is, the larger the variation in the axial center becomes. Therefore, devise a connection method to absorb the variation.**
2. **The product can be used without lubrication. In case the product is lubricated, special grease is required. Contact the distributor or SMC.**

Mounting

⚠ Caution

1. **Do not use until you verify that the equipment can operate properly.**
2. **The product should be mounted and operated after thoroughly reading the instruction manual and understanding its contents.**
3. **Do not dent, scratch or cause other damage to the body and table mounting surfaces.**

This may cause a loss of parallelism in the mounting surfaces, looseness in the guide unit, an increase in operating resistance or other problems.
4. **When attaching a workpiece, do not apply strong impact shock or a large moment.**

If an outside force exceeding the allowable moment is applied, this may cause looseness in the guide unit, an increase in sliding resistance or other problems.
5. **When connecting a load having an external support or guide mechanism, be sure to select a suitable connection method and perform careful alignment.**
6. **Fix the cylinder's fixing part and connecting part securely.**

If the cylinder is used at a highly frequency or in a location with a large amount of vibration, fix it securely using adhesives to prevent it from loosening.



Directional Control Driver Precautions 1

Be sure to read this before handling.

Directional Control Driver

Caution on Handling

⚠ Warning

1. Never touch the directional control driver inside. It will likely lead to an electrical shock or other trouble.
2. Use only the designated combination between motor and directional control driver.

⚠ Caution

1. Do not disassemble and modify. It may result in the trouble, malfunction, fire, etc.
2. Do not touch for a while when being energized or after cutting off the power source because it is high temperature.
3. If a fire or danger against the human being is expected by abnormal heat generation of the product, emitting fume and catching on fire, etc., cut off the power supply for the main body and the system immediately.

Power Supply

⚠ Caution

1. In cases where voltage fluctuations greatly exceed the required voltage, a constant voltage transformer, etc., should be used to allow operation within the required range.
2. Use a power supply that has low noise between lines and between power and ground. In cases where noise is high, an isolation transformer should be used.
3. The power supply line and the interface power supply line must be wired separately in different systems.
4. To prevent surges from lightning, connect a varistor for lightning. Ground the surge absorber for lightning separately from the grounding of the directional control driver.

Grounding

⚠ Caution

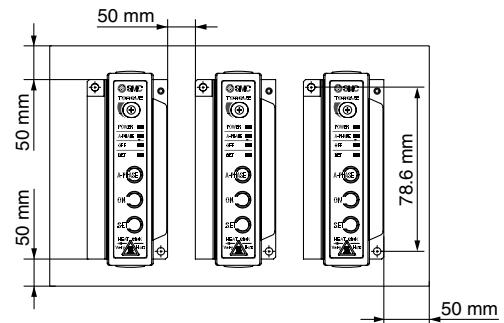
1. Be sure to carry out grounding in order to ensure the noise tolerance of the directional control driver.
2. Dedicated grounding should be used as much as possible. Grounding should be to a type 3 ground. (Ground resistance of 100 Ω or less.)
3. Grounding should be as close as possible to the directional control driver, and the ground wires should be as short as possible.
4. In the unlikely event that malfunction is caused by the ground, disconnected it from the ground.

Mounting

⚠ Caution

1. Mount the directional control driver on incombustible materials. Mounting on combustible materials directly or mounting closely to it may lead to a fire.
2. Consider the cooling period, so that the operating temperature of main body should be within the range of specifications. Also, allow enough distance from each side of the main body, construction and the parts.

Cooling should be considered, so the surface temperature of a heat sink should not be more than 50°C even though the temperature is within the operating range.



3. Avoid placing with large-sized solenoid contact apparatus or vibrating source such as no fuse insulator and then make a separate panel or mount in the distance.
4. Mounting should enable the connectors to be inserted or removed after installation.
5. If there are concave or convex or distorted parts on the mounting face of a directional control driver, an unreasonable force can be applied to the frame or case, which can cause trouble. Mount on the flat face.

Wiring

⚠ Danger

1. Adjustment, installation, or wiring changes should be conducted after power supply to this product is turned off. Otherwise, there is a possibility of an electrical shock.

⚠ Caution

1. Wiring should be performed correctly.
For each terminal, voltages other than stipulated in the operation manual should not be applied. Otherwise, the product may break.
2. Connect the housing securely.
3. Treat the noise securely.
If the noise is at the same wavelength as the signal lines, it will lead to malfunction. As a countermeasure, separate the high and low electrical lines and shorten the length of wiring, etc.
4. When using a cable made by oneself, confirm the electric wire is of a proper gauge as mentioned in the instruction manual and it is not affected by a noise before using.



Directional Control Driver Precautions 2

Be sure to read this before handling.

Wiring

Warning

- 1. Avoid repeatedly bending and/or stretching the cables.**
Repeatedly applying bending stress and/or stretching force to the cables may result in broken lead wires.
- 2. Avoid incorrect wiring.**
Depending on the type of incorrect wiring, the directional control driver may be damaged.
- 3. Perform wiring when the power is turned off.**
The directional control driver may be damaged and malfunction.
- 4. Do not wire with power lines or high voltage lines.**
Conduct wiring for a directional control driver separately from power lines or high voltage lines to avoid interference from the noise or surge of the power lines or high voltage lines. This may result in malfunction.
- 5. Confirm that the wiring is properly insulated.**
Be certain that there is no faulty wiring insulation (contact with other circuits, improper insulation between terminals, etc.) because the directional control driver may be damaged due to excessively applied voltage or current flow to it.

Operating Environment

Warning

- 1. Do not use in an environment subjected to temperature cycle.**
If used in an environment where temperature cycling occurs, other than the usual temperature change, the internal directional control driver may be adversely effected.
- 2. Do not use in a place that has excessive electrical surge generation.**
When there are units (solenoid type lifter, high frequency induction furnace, motor, etc.) which generate a large amount of surge in an area around the directional control driver, deterioration or damage may occur to the internal circuit elements of the directional control driver. Avoid sources of surge generation and crossed lines.
- 3. Select a product type that has built-in surge absorbing elements for a load, such as relays and solenoid valves employed for driving voltage generating load directly.**
- 4. Avoid use in the following environments.**
 1. Locations with a lot of debris or dust, or where chips may enter.
 2. Locations where the ambient temperature exceeds the operating temperature range specified in each model. (Refer to the specifications.)
 3. Locations where the ambient humidity exceeds the operating humidity range specified in each model. (Refer to the specifications.)
 4. Locations where corrosive or combustible gases are generated.
 5. Locations where strong magnetic or electric fields are generated.
 6. Locations where direct vibration or impact shock, etc., will be applied to the cylinder unit.
 7. Locations where a lot of dusts, water drops and oil drops are applied to a product.

Adjustment and Operation

Warning

- 1. Do not short the loads.**
Short on the load of the directional control driver indicates an error, but it may cause over current and damage the directional control driver.
- 2. Do not operate or conduct any settings with wet hands.**
An electric shock may result from wet hands.
- 3. When operating the manual switch, avoid making contact with the workpiece.**
Contact with the workpiece may cause injury.

Caution

- 1. Do not push the manual switch with sharp pointed items.**
Sharp pointed items may cause manual switch damage.
- 2. Do not touch the heat sink parts of the directional control driver.**
Conduct operation after confirming that the machine is cool since it gets hot while in operation.
- 3. When adjusting the trimmer, the following conditions should be observed.**
 1. Adjust it with a supply pressure of 4.9 N or less.
 2. Adjust the adjustment parts with 68.5 mN or less.

Maintenance

Warning

- 1. Periodically perform a maintenance of the product.**
Confirm that the piping and bolts are securely tightened. Unintentional malfunction of a system's components may occur as a result of a cylinder malfunction.
- 2. Do not disassemble, modify (including change of printed circuit board) or repair.**
Disassembly or modification may result in injury or failure.

Caution

- 1. Confirm the range of movement of a workpiece (a slider) before connecting the driving power supply or turning on the switch.**
The movement of the work may cause an accident.



Directional Control Driver Precautions 3

Be sure to read this before handling.

Caution on Design and Selection

Warning

1. Conduct operation at regulated voltage.

The product may not function correctly or the directional control driver section may be damaged if used with any other voltage than the specified regulated voltage.

2. Operate within the limit of the specification range.

If operated outside of the specification range, there is a possibility of fire, malfunction, and or cylinder damage. Operate after confirming the required specifications.

3. To prevent any damage by product failure or malfunction, plan and construct a backup system beforehand, such as multiplexing the components and equipment, employing failure free planning, etc.

4. Secure the space for maintenance.

When planning, consider the space to be required for product checkup and maintenance.

5. Provide a protective cover when there is a risk of human injury.

If a driven object and or moving parts of a cylinder pose a danger to human injury, design the structure to avoid contact with the human body



Directional Control Driver Precautions 4

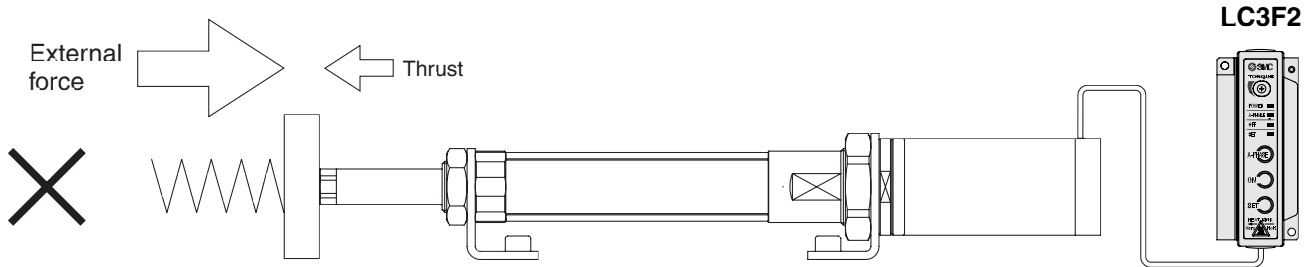
Be sure to read this before handling.

Caution on Design and Operation

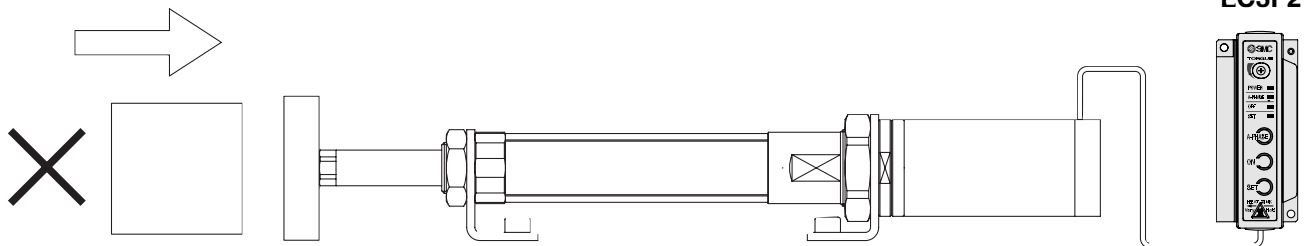
1. If an electric cylinder with DC motor should be rotated by the larger external force than the generated thrust, the reverse inrush voltage generated may cause adverse effects on the electric cylinders directional control driver and result in malfunction or damage to the product.

Example)

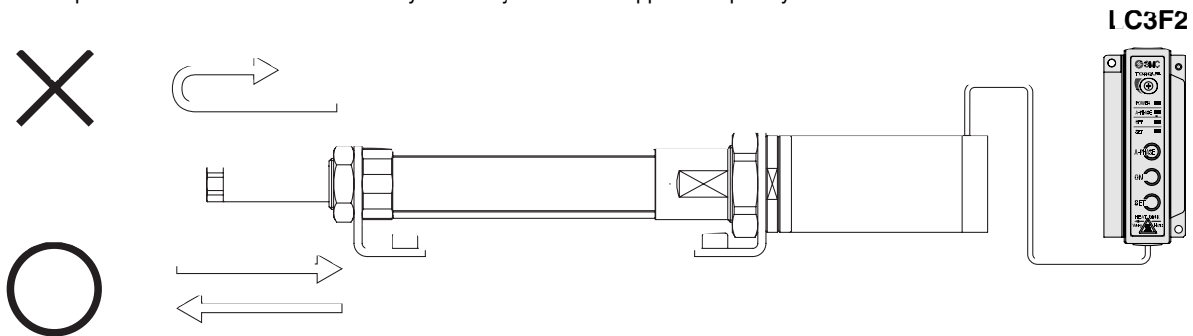
- Do not push or pull a cylinder rod, applying a larger load than the generated thrust. (Please use caution if the generated thrust should be switched over between a high thrust and a low thrust.)



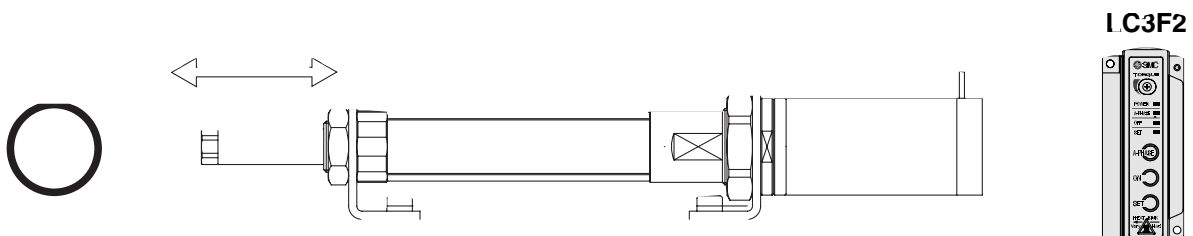
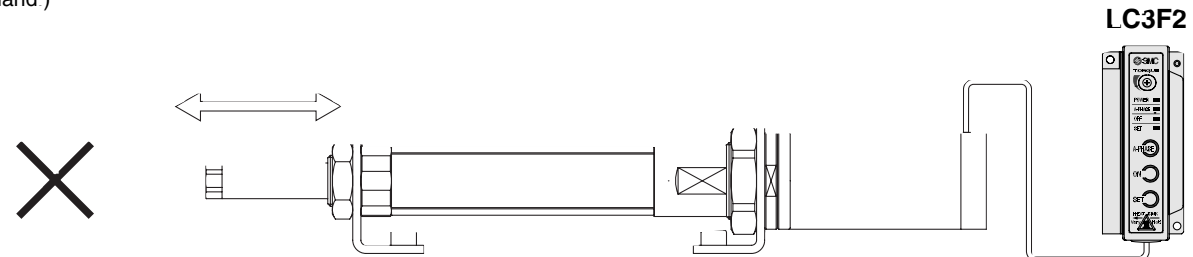
- Do not use this product by stopping it with a load or external force. (control operation)



- Command an operation in the reverse direction only after a cylinder rod stopped completely.



- Do not operate a cylinder rod with an external force when the electric cylinder directional control driver is turned off or output is in the off state. (If a cylinder rod needs to be moved manually for the purpose of adjustment, etc., be sure to remove the CN3 motor output terminal beforehand.)





Auto Switch Precautions 1

Be sure to read this before handling.

Design and Selection

Warning

1 Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside the range of specifications of current load, voltage, temperature or impact.

2. Use caution when multiple actuators are used and close to each other

When two or more auto switch actuators are lined up in close proximity to each other, magnetic field interference may cause the switches to malfunction. Maintain a minimum cylinder separation of 40 mm

3. Pay attention to the length of time that a switch is ON at an intermediate stroke position.

When an auto switch is placed at an intermediate position of the stroke and a load is driven at the time the piston passes, the auto switch will operate, but if the speed is too great the operating time will be shortened and the load may not operate properly. The maximum detectable piston speed is:

$$V \text{ (mm/s)} = \frac{\text{Auto switch operating range (mm)}}{\text{Time load applied (ms)}} \times 1000$$

4. Keep wiring as short as possible.

<Solid state switch>

Although wire length should not affect switch function, use a wire 100 mm or shorter.

5. Take note of the internal voltage drop of the switch.

<Solid state switch>

Generally, the internal voltage drop will be greater with a 2-wire solid state auto switch than with a reed switch. Take the same precautions as in 1).

Also, note that a 12 VDC relay is not applicable.

6. Pay attention to leakage current

<Solid state switch>

With a 2-wire solid state auto switch, current (leakage current) flows to the load to operate the internal circuit even when in the OFF state.

$$\text{Operating current of load (OFF condition)} > \text{Leakage current}$$

If the criteria given in the above formula are not met, it will not reset correctly (stays ON). Use a 3-wire switch if this specification will not be satisfied.

Moreover, leakage current flow to the load will be "n" times larger when "n" auto switches are connected in parallel.

7 Do not use a load that generates surge voltage.

<Solid state switch>

Although a zener diode for surge protection is connected at the output side of a solid state auto switch, damage may still occur if the surge is applied repeatedly. When a load, such as a relay or solenoid, which generates surge is directly driven, use a type of switch with a built-in surge absorbing element.

8 Cautions for use in an interlock circuit

When an auto switch is used for an interlock signal requiring high reliability, devise a double interlock system to avoid trouble by providing a mechanical protection function, or by also using another switch (sensor) together with the auto switch. Also perform periodic maintenance and confirm proper operation.

9. Ensure sufficient clearance for maintenance activities.

When designing an application, be sure to allow sufficient clearance for maintenance and inspections



Auto Switch Precautions 2

Be sure to read this before handling.

Mounting & Adjustment

Warning

1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (300 m/s² or more for reed switches and 1000 m/s² or more for solid state switches) while handling. Although the body of the switch may not be damaged, the inside of the switch could be damaged and cause a malfunction.

2. Do not carry an actuator by the auto switch lead wires.

Never carry a cylinder (actuator) by its lead wires. This may not only cause broken lead wires, but it may cause internal elements of the switch to be damaged by the stress.

3. Mount switches using the proper fastening torque.

When a switch is tightened beyond the range of fastening torque, the mounting screws, mounting bracket or switch may be damaged. On the other hand, tightening below the range of fastening torque may allow the switch to slip out of position.

4. Mount a switch at the center of the operating range.

Adjust the mounting position of an auto switch so that the piston stops at the center of the operating range (the range in which a switch is ON).

(The mounting position shown in a catalog indicates the optimum position at stroke end.) If mounted at the end of the operating range (around the borderline of ON and OFF), operation will be unstable.

<D-M9□>

When the D-M9□(V) auto switch is used to replace old series auto switch, it may not activate depending on operating condition because of its shorter operating range.

Such as

- Application where the stop position of actuator may vary and exceed the operating range of the auto switch, for example, pushing, pressing, clamping operation, etc.
- Application where the auto switch is used for detecting an intermediate stop position of the actuator. (In this case the detecting time will be reduced.)

In these applications, set the auto switch to the center of the required detecting range.

Caution

1. Fix the switch with appropriate screw installed on the switch body. If using other screws, switch may be damaged.

Wiring

Warning

1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from applying bending stress or stretching force to the lead wires.

2. Be sure to connect the load before power is applied.

<2-wire type>

If the power is turned ON when an auto switch is not connected to a load, the switch will be instantly damaged because of excess current.

3. Confirm proper insulation of wiring.

Be certain that there is no faulty wiring insulation (contact with other circuits, ground fault, improper insulation between terminals, etc.). Damage may occur due to excess current flow into a switch.

4. Do not wire with power lines or high voltage lines.

Wire separately from power lines or high voltage lines, avoiding parallel wiring or wiring in the same conduit with these lines. Control circuits, including auto switches, may malfunction due to noise from these other lines.

5. Do not allow short circuit of loads.

<Solid state switch>

Model D-M9□ and all models of PNP output type switches do not have built-in short circuit prevention circuits. If loads are short circuited, the switches will be instantly damaged, as in the case of reed switches.

Take special care to avoid reverse wiring with the power supply line (brown) and the output line (black) on 3-wire type switches.

6. Avoid incorrect wiring.

<Solid state switch>

1) If connections are reversed on a 2-wire type switch, the switch will not be damaged if protected by a protection circuit, but the switch will always stay in an ON state. However, it is still necessary to avoid reversed connections, since the switch could be damaged by a load short circuit in this condition.

2) If connections are reversed (power supply line + and power supply line -) on a 3-wire type switch, the switch will be protected by a protection circuit. However, if the power supply line (+) is connected to the blue wire and the power supply line (-) is connected to the black wire, the switch will be damaged.

<D-M9□>

D-M9□ does not have built-in short circuit protection circuit. Be aware that if the power supply connection is reversed (e.g. (+) power supply wire and (-) power supply wire connection is reversed), the switch will be damaged.

* Lead wire color changes

Lead wire colors of SMC auto switches have been changed in order to meet NECA Standard 0402 for production beginning September, 1996 and thereafter. Please refer to the tables provided.

2-wire

	Old	New
Output (+)	Red	Brown
Output (-)	Black	Blue

3-wire

	Old	New
Power supply (+)	Red	Brown
Power supply GND	Black	Blue
Output	White	Black



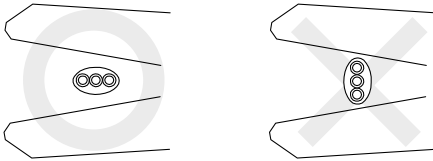
Auto Switch Precautions 3

Be sure to read this before handling.

Wiring

⚠ Caution

- When the cable sheath is stripped, confirm the stripping direction. The insulator may be split or damaged depending on the direction. (D-M9□ only)



Recommended Tool

Model name	Model no.
Wire stripper	D-M9N-SWY

* Stripper for a round cable (ø2.0) can be used for a 2-wire type cable.

Operating Environment

⚠ Warning

- Never use in an atmosphere of explosive gases.

The construction of auto switches is not intended to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.

- Do not use in an area where a magnetic field is generated.

Auto switches will malfunction or magnets inside actuators will become demagnetized.

- Do not use in an environment where the auto switch will be continually exposed to water.

Although switches, satisfy IEC standard IP67 construction (JIS C 0920: waterproof construction), do not use switches in applications where continually exposed to water splash or spray. Poor insulation or swelling of the potting resin inside switches may cause malfunction.

- Do not use in an environment with oil or chemicals.

Consult with SMC if auto switches will be used in an environment with coolant, cleaning solvent, various oils or chemicals. If auto switches are used under these conditions for even a short time, they may be adversely affected by improper insulation, malfunction due to swelling of the potting resin, or hardening of the lead wires.

- Do not use in an environment with temperature cycles.

Consult with SMC if switches are used where there are temperature cycles other than normal temperature changes, as they may be adversely affected internally.

- Do not use in an environment where there is excessive impact shock.

Operating Environment

⚠ Warning

- Do not use in an area where surges are generated.

<Solid state switch>

When there are units (solenoid type lifter, high frequency induction furnace, motor, etc.) which generate a large amount of surge in the area around actuators with solid state auto switches, this may cause deterioration or damage to the switches. Avoid sources of surge generation and crossed lines.

- Avoid accumulation of iron debris or close contact with magnetic substances.

When a large amount of ferrous debris such as machining chips or spatter is accumulated, or a magnetic substance (something attracted by a magnet) is brought into close proximity with an auto switch actuator, it may cause the auto switch (actuator) to malfunction due to a loss of the magnetic force inside the actuator.

Maintenance

⚠ Warning

- Perform the following maintenance periodically in order to prevent possible danger due to unexpected auto switch malfunction.

- Securely tighten switch mounting screws.
If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.
- Confirm that there is no damage to lead wires.
To prevent faulty insulation, replace switches or repair lead wires, etc., if damage is discovered.

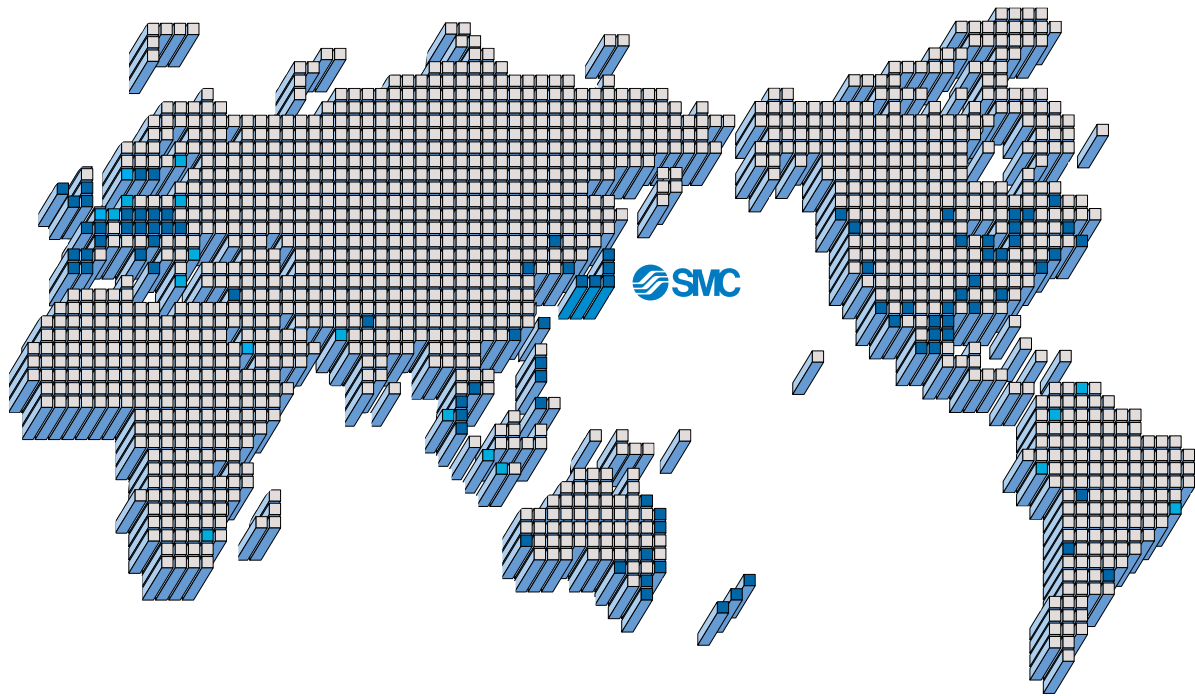
Other

⚠ Warning

- Consult with SMC concerning water resistance, elasticity of lead wires, usage at welding sites, etc.



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SMC Corporation

1-3-4 Shirobashi, Minato-ku, Tokyo 105-3659 JAPAN

TEL: 03-3502-2740 FAX: 03-3508-2480

URL: <http://www.smcworld.com>

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