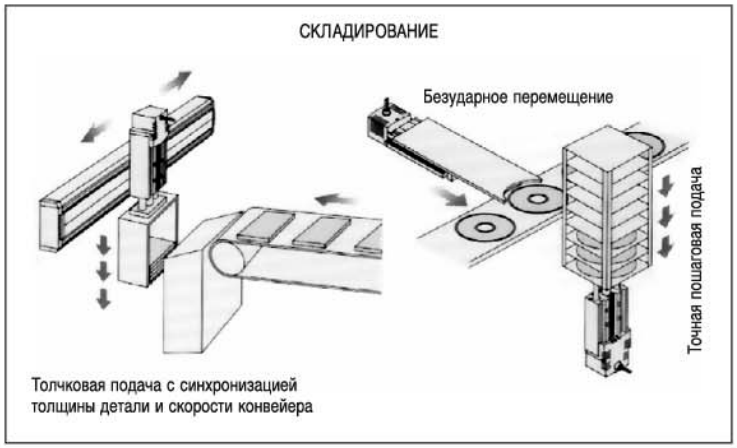
Линейный привод с шаговым электродвигателем

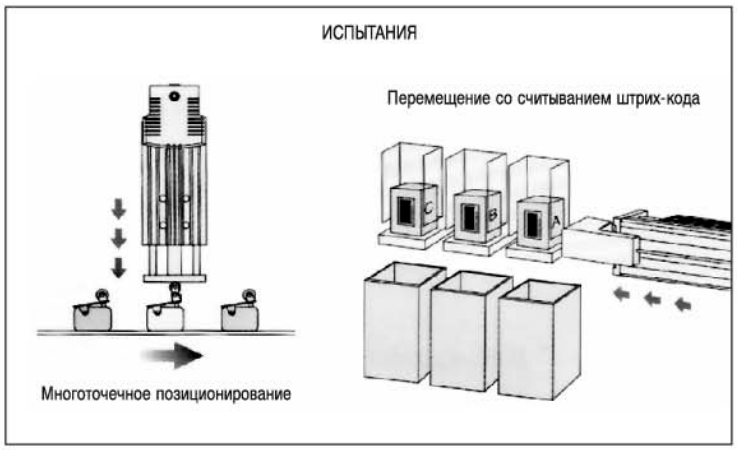
Серия LX

Компактный линейный электрический привод короткого хода с направляющими качения и скольжения.

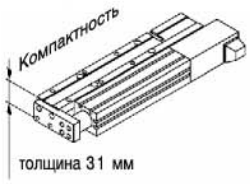
- Точность позиционирования ±0.03~0.05 мм
- Использование шагового двигателя в стандартном исполнении
- Возможно использование с серводвигателем
- Максимальная скорость: 400 мм/с
- Стандартный ход от 25 до 400 мм
- Возможно исполнение с тормозом двигателя
- Возможно исполнение со встроенным датчиком конечного положения

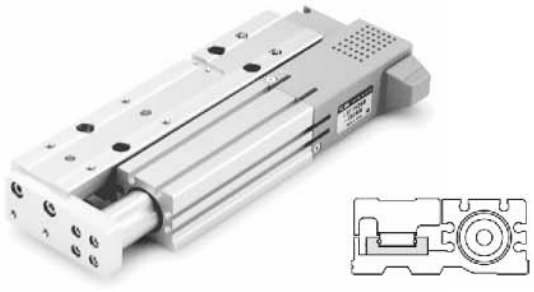
Примеры применения





Серия LXF – с линейной направляющей





Модель	Исполнение	Допустимая нагрузка (кг)	Макс. скорость (мм/с)	Точность позиционирования (мм)	Исполнение винтовой пары	Стандартный ход (мм)	Диапазон рабочих температур (°C)
LXH5SB-□-Q	Без тормоза	2	200	±0.05	Подшипник скольжения	25, 50, 75, 100	5~40 (не допускать конденсации)
LXH5BC-□-Q			30	±0.03	Подшипник качения		
LXH5BD-□-Q			80				
LXH5SA-□-Q			100	±0.05	Подшипник скольжения		

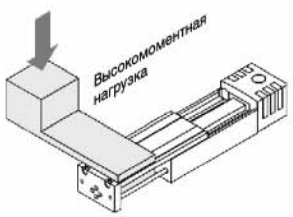
Серия LXP – с подшипником качения

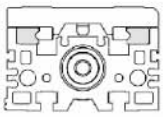
Модель	Исполнение	Допустимая нагрузка (кг)	Макс. скорость (мм/с)	Точность позиционирования (мм)	Исполнение винтовой пары	Стандартный ход (мм)	Диапазон рабочих температур (°C)
LXP5SB-□-Q	Без тормоза	2	200	±0.05	Подшипник скольжения	25, 50, 75, 100, 125, 150, 175, 200	5~40 (не допускать конденсации)
LXP2SB-□-Q		3	200				
LXP5SA-□-Q		4	100				
LXP2BC-□-Q		6	30	±0.03	Подшипник качения		
LXP5BC-□-Q							
LXP2BD-□-Q			80				
LXP5BD-□-Q							
LXP2SA-□-Q			100	±0.05	Подшипник скольжения		
LXP5SB-□-B-Q	С тормозом двигателя	2	200	±0.05	Подшипник скольжения		
LXP2SB-□-B-Q		3	200				
LXP5SA-□-B-Q		4	100				
LXP2BC-□-B-Q		5	30	±0.03	Подшипник качения		
LXP5BC-□-B-Q							
LXP2BD-□-B-Q			80				
LXP5BD-□-B-Q							
LXP5SA-□-B-Q			100	±0.05	Подшипник скольжения		

Компания SMC сохраняет за собой право на внесение технических и размерных изменений

Линейный привод с шаговым электродвигателем
LX

Серия LXS – каретка с направляющими высокой жесткости





Модель	Исполнение	Допустимая нагрузка (кг)	Макс. скорость (мм/с)	Точность позиционирования (мм)	Исполнение винтовой пары	Стандартный ход (мм)	Диапазон рабочих температур (°C)
LXS5SB-□-Q	Без тормоза	3	200	±0.05	Подшипник скольжения	25, 50, 75, 100, 125, 150	5~40 (не допускать конденсации)
LXS2SB-□-Q		4.5	200				
LXS5SA-□-Q		6	100				
LXS2SA-□-Q		9	100				
LXS5BC-□-Q		10	30	±0.03	Подшипник качения		
LXS2BC-□-Q							
LXS5BD-□-Q			80				
LXS2BD-□-Q							
LXS5SB-□-B-Q	С тормозом двигателя	1	200	±0.05	Подшипник скольжения		
LXS2SB-□-B-Q		2	200				
LXS5SA-□-B-Q			100				
LXS2SA-□-B-Q		4	100				
LXS5BC-□-B-Q		5	30	±0.03	Подшипник качения		
LXS2BC-□-B-Q							
LXS5BD-□-B-Q			80				
LXS2BD-□-B-Q							

Серия LX-112F

Линейный электрический привод с направляющей качения, длина хода до 400 мм.

Модель	Исполнение	Допустимая нагрузка (кг)		Макс. скорость (мм/с)	Точность позиционирования (мм)	Исполнение винтовой пары	Стандартный ход (мм)	Диапазон рабочих температур (°C)
		Гориз.	Верт.					
LX-112A-□BE	С тормозом, без тормоза двигателя	7	3	170	±0.03	Подшипник качения	50, 100, 150, 200, 250, 300, 350, 400	5~40 (не допускать конденсации)
LX-112A-□BF		7	2	260				
LX-112A-□BG		7	1	400				

Для управления шаговым двигателем необходимо использовать драйвер (заказывается отдельно).

Модель драйвера	Линейный привод		Тип мотора
LC6D-220AD	С подшипником качения	LXPB2	2-фазный шаговый двигатель
	С направляющими высокой жесткости	LXSH2	
LC6D-507AD	С линейной направляющей	LXFH5	5-фазный шаговый двигатель
	С направляющими высокой жесткости	LXSH5	
	С подшипником качения	LXPB5	

CAT.E 901-B

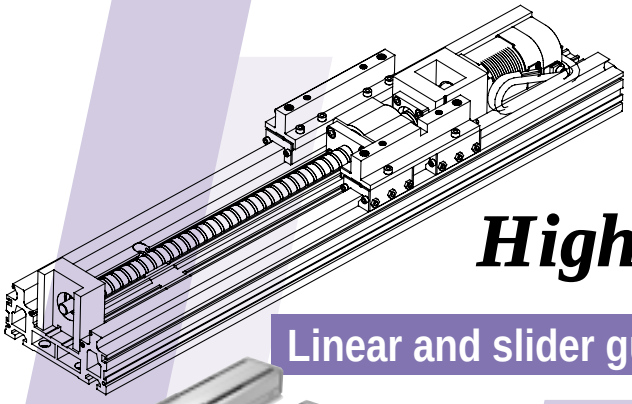
SMC

Uniaxial Electric Actuator

Series LJ1

Slide screw for horizontal mounting and brake for vertical mounting have been added to the high rigidity linear guide /series LJ1H

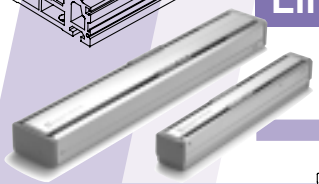
Dedicated teaching box newly released



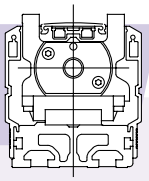
Employs a guide with high

High positioning accuracy is achi

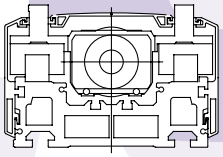
Linear and slider guides with 3 types of feed screws



Linear guide Series LJ1H

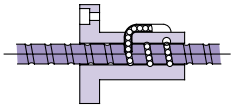


LJ1H10



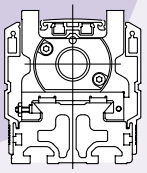
LJ1H20, 30

Ball screw

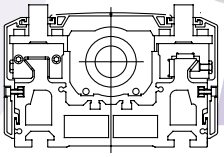


Positioning repeatability
±0.02mm
(ground ball screw)
±0.05mm
(rolled ball screw)

Slider guide Series LJ1S

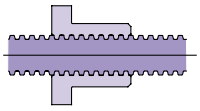


LJ1S10



LJ1S20, 30

Slide screw



Positioning repeatability
±0.1mm
(slide screw)

Abundant product variations

- **Without motor, can be supplied with specified motor**
- **Stepping motor, also compatible with DC motor**
- **Full range of options such as TSUBAKICABLEVEYOR®**

Note) TSUBAKICABLEVEYOR® is a registered trade mark of the TSUBAKIMOTO CHAIN CO.

Completely flat top surface

Improves freedom in mounting of work pieces.

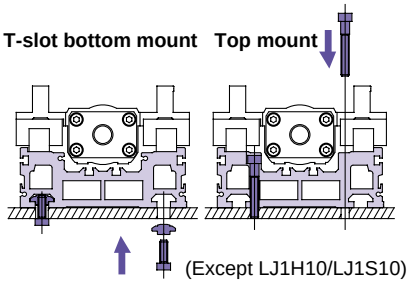
Cable entry is possible from 5 directions

With the slider guide, slide screw type, low drive noise of 47dB or less is possible

(LJ1S Series only)

Model	Noise level (dB)
LJ1S□□□□S□	47 or less
LJ1H□□□□P□	60 or less
LJ1H□□□□N□	61 or less
LJ1H□□□□S□	50 or less

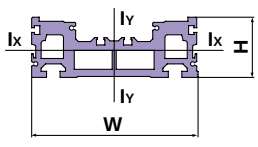
2 types of mounting are possible to improve mounting of the unit.



(Except LJ1H10/LJ1S10)

Higher rigidity

Higher rigidity has been realized by using an aluminum hollow box structure for the body.

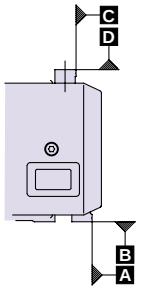


Model		Moment of inertia of area Ix	Moment of inertia of area Iy	W	H
Linear guide	LJ1H10□□	7	48	70	24.7
	LJ1H20□□	40	374	122	44.8
	LJ1H30□□	84	836	151	55
Slider guide	LJ1S10□□	15	52	70	36
	LJ1S20□□	60	402	122	56.3
	LJ1S30□□	177	1000	151	73.3

rigidity and high linear precision.

eved with an AC servomotor and feed screw.

Table running accuracy



Model	Running accuracy	
	C plane to A plane	D plane to B plane
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

Low cost

The high rigidity direct acting guide costs approximately 30% less than the ball screw type (SMC product comparison).

(LJ1S Series only)

Actuator control

- **Absolute and incremental movement commands are provided.** Speed and acceleration settings also are unresricted.
- **Home position return direction is selectable.**

Operation from the teaching box

- **Programming and parameters:** can be operated like a PC. (Can perform operation, monitoring, alarm reset, etc.)

Programming from a PC

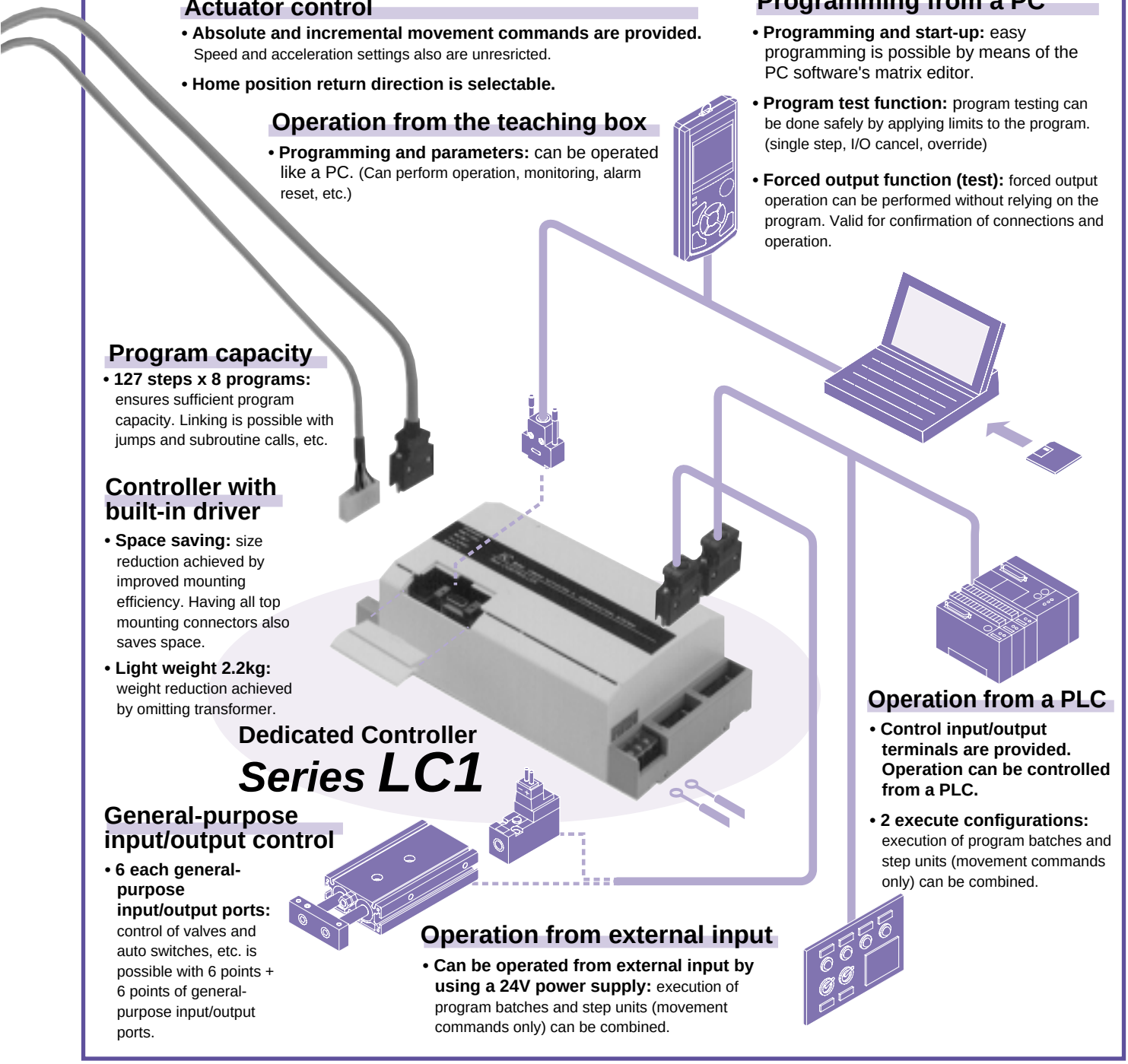
- **Programming and start-up:** easy programming is possible by means of the PC software's matrix editor.
- **Program test function:** program testing can be done safely by applying limits to the program. (single step, I/O cancel, override)
- **Forced output function (test):** forced output operation can be performed without relying on the program. Valid for confirmation of connections and operation.

Program capacity

- **127 steps x 8 programs:** ensures sufficient program capacity. Linking is possible with jumps and subroutine calls, etc.

Controller with built-in driver

- **Space saving:** size reduction achieved by improved mounting efficiency. Having all top mounting connectors also saves space.
- **Light weight 2.2kg:** weight reduction achieved by omitting transformer.



Dedicated Controller

Series LC1

General-purpose input/output control

- **6 each general-purpose input/output ports:** control of valves and auto switches, etc. is possible with 6 points + 6 points of general-purpose input/output ports.

Operation from external input

- **Can be operated from external input by using a 24V power supply:** execution of program batches and step units (movement commands only) can be combined.

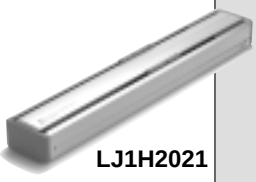
Operation from a PLC

- **Control input/output terminals are provided. Operation can be controlled from a PLC.**
- **2 execute configurations:** execution of program batches and step units (movement commands only) can be combined.

Series LJ1
Electric Actuator
Series Variations

Series	Guide type	Typical model	Mounting position	Feed screw	Positioning repeatability (mm)	Maximum work load (kg)	Maximum speed (mm/sec)	Motor output (W)	Stroke (mm)											
									100	200	300	400	500	600	700	800	900	1000	1200	1500
LJ1H	High rigidity direct acting guide	LJ1H 10	Horizontal	Ground ball screw Lead 12mm	±0.02	10	600	50	●	●	●	●	●							
				Rolled ball screw Lead 12mm	±0.05				●	●	●	●	●							
				Slide screw Lead 20mm	±0.1		500		●	●	●	●	●	●	●	●	●	●		
			Vertical *1)	Ground ball screw Lead 8mm	±0.02	10	400	100	●	●	●	●	●							
				Rolled ball screw Lead 8mm	±0.05				●	●	●	●	●							
				Ground ball screw Lead 12mm	±0.02	5	600		●	●	●	●	●							
				Rolled ball screw Lead 12mm	±0.05				●	●	●	●	●							
		LJ1H 20	Horizontal	Ground ball screw Lead 10mm	±0.02	30	500	100	●	●	●	●	●	●						
				Rolled ball screw Lead 10mm	±0.05				●	●	●	●	●	●						
				Ground ball screw Lead 20mm	±0.02	30	1,000						●	●	●	●	●	●		
				Rolled ball screw Lead 20mm	±0.05								●	●	●	●	●	●		
				Slide screw Lead 20mm	±0.1	15	500		●	●	●	●	●	●	●	●	●	●	●	
			Vertical *1)	Ground ball screw Lead 5mm	±0.02	15	250		●	●	●	●	●	●						
				Rolled ball screw Lead 5mm	±0.05				●	●	●	●	●	●						
				Ground ball screw Lead 10mm	±0.02	8	500		●	●	●	●	●	●						
				Rolled ball screw Lead 10mm	±0.05				●	●	●	●	●	●						
		LJ1H 30	Horizontal	Ground ball screw Lead 25mm	±0.02	60	1,000	200		●	●	●	●	●		●		●	●	●
				Rolled ball screw Lead 25mm	±0.05					●	●	●	●	●		●		●	●	●
				Slide screw Lead 40mm	±0.1	30	500			●	●	●	●	●		●		●	●	●
			Vertical *1)	Ground ball screw Lead 10mm	±0.02	20	500			●	●	●	●	●						
				Rolled ball screw Lead 10mm	±0.05					●	●	●	●	●						
LJ1S	Slider guide	LJ1S 10	Horizontal	Slide screw Lead 20mm	±0.1	5	300	50	●	●	●	●	●	●	●	●	●	●		
		LJ1S 20		Slide screw Lead 20mm		10	300	100	●	●	●	●	●	●	●	●	●	●	●	
		LJ1S 30		Slide screw Lead 20mm		20	500	200		●	●	●	●	●		●		●	●	●

LJ1H1011



LJ1H2021

LJ1H3031

LJ1S1011

LJ1S2021

⚠ **Caution**

***1) Vertical type is equipped with brake.**
Since a regenerative absorption unit may be necessary depending on the operating conditions, separate inquiry should be made.

*2) Consult SMC regarding options.

TSUBAKICABLEVEYOR® is a registered trade mark of the TSUBAKIMOTO CHAIN CO.

	Individual models	Applicable controller model	Options *2)		
			Cover with switch grooves	CABLE-VEYOR®	Dust seal
	LJ1H101□PB-□ LJ1H101□NB-□	LC1-1B1H□			
	LJ1H101□SC-□	LC1-1B1M□			
	LJ1H102□PH-□K LJ1H102□NH-□K LJ1H102□PB-□K LJ1H102□NB-□K	LC1-1B1V□	●	●	
	LJ1H202□PA-□ LJ1H202□NA-□ LJ1H202□PC-□ LJ1H202□NC-□	LC1-1B2H□			
	LJ1H202□SC-□	LC1-1B2M□	●	●	●
	LJ1H202□PF-□K LJ1H202□NF-□K LJ1H202□PA-□K LJ1H202□NA-□K	LC1-1B2V□			
	LJ1H303□PD-□ LJ1H303□ND-□	LC1-1B3H□			
	LJ1H303□SE-□	LC1-1B3M□	●	●	●
	LJ1H303□PA-□K LJ1H303□NA-□K	LC1-1B3V□			
	LJ1S101□SC-□	LC1-1B1S□	●	●	
	LJ1S202□SC-□	LC1-1B2S□	●	●	●
	LJ1S303□SC-□	LC1-1B3S□	●	●	●

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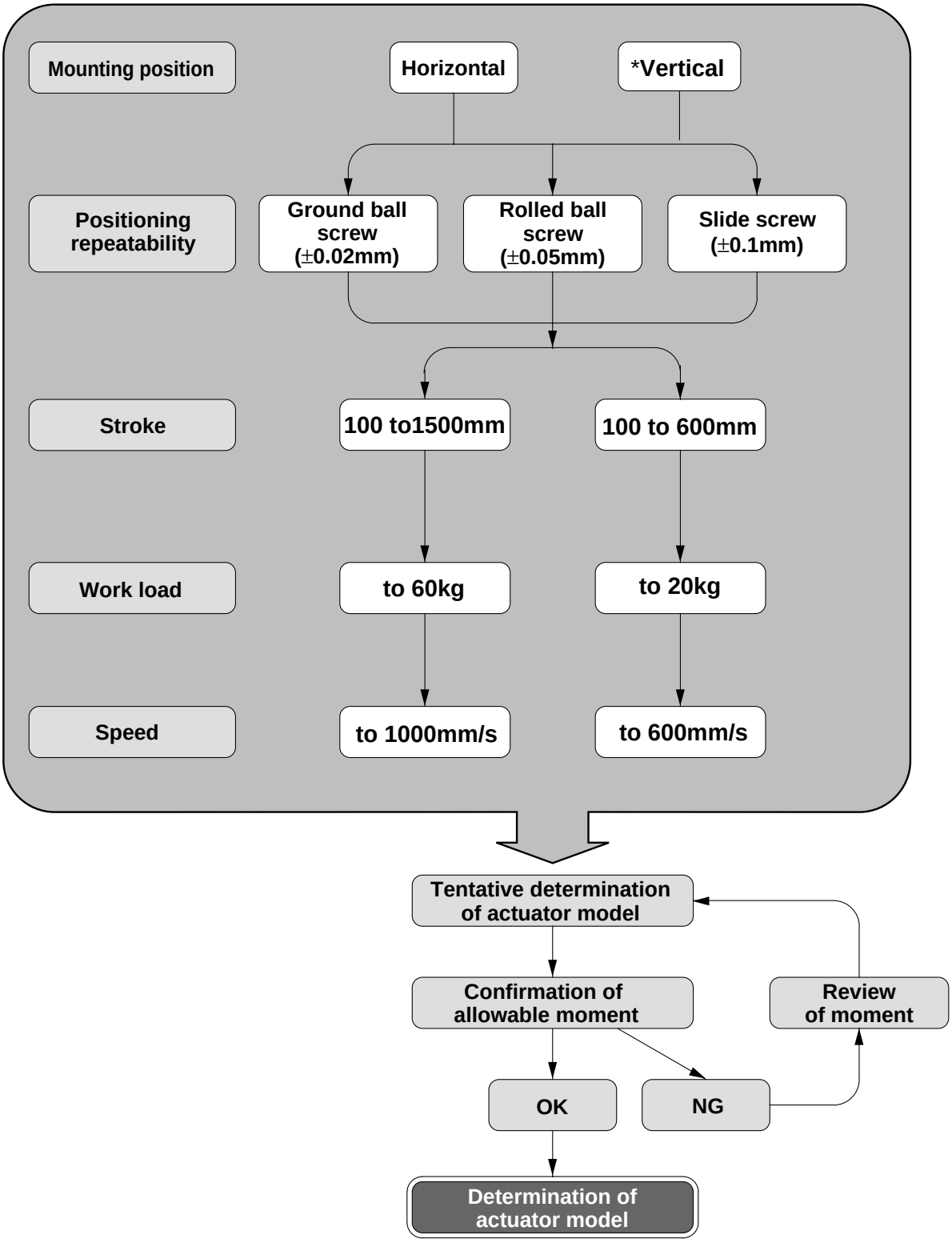
Series LJ1
Electric Actuator
Selection Procedure

Various operating conditions must be considered in order to select an electric actuator. The selection procedure is shown below.

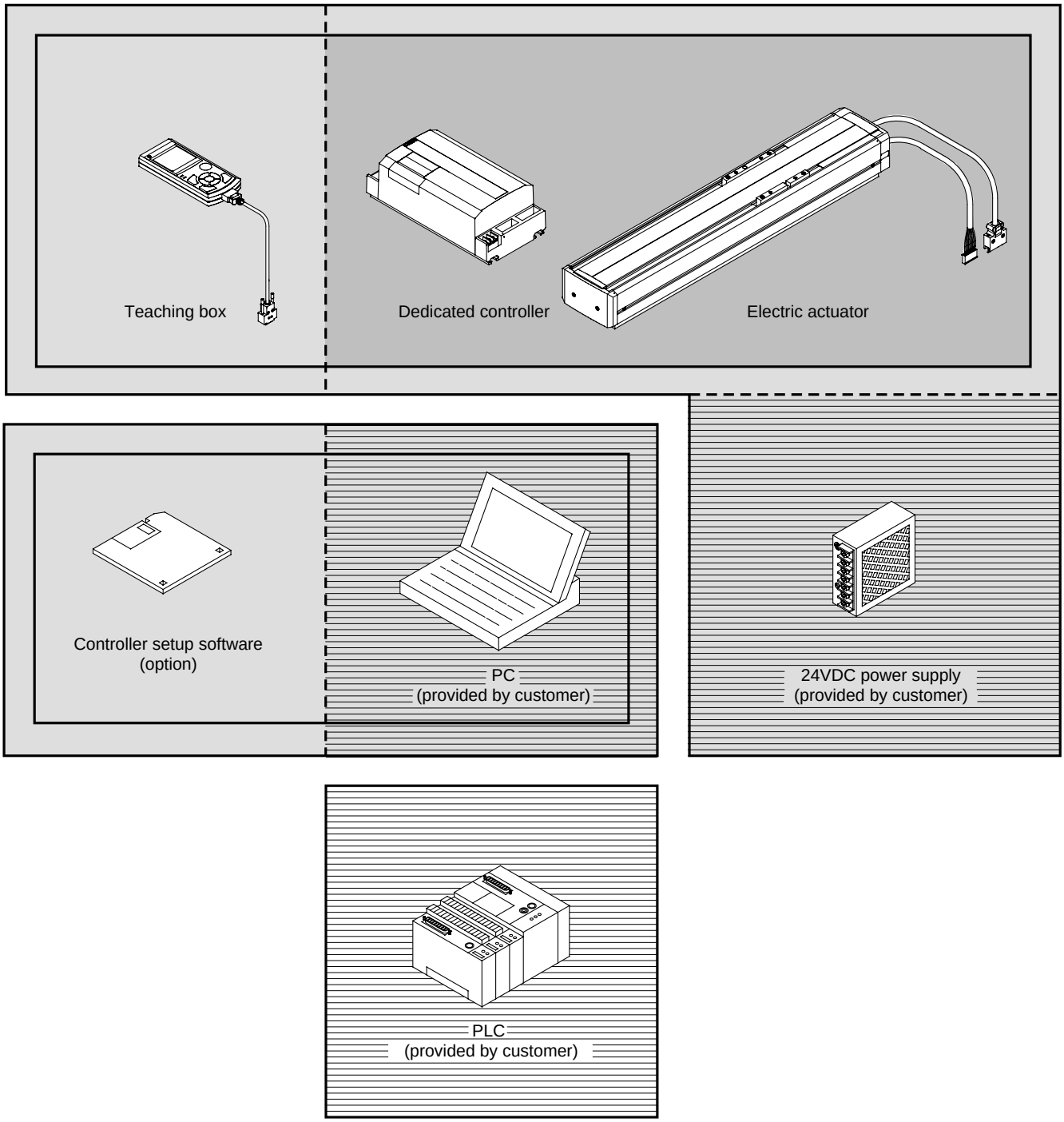


∗ When mounted in a vertical position, selection is limited to ground ball screw and rolled ball screw.

⚠ **Caution**

Vertical type is equipped with brake.
Since a regenerative absorbtion unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Series ***LJ1***
Electric Actuator
Basic Configuration Examples



Basic configuration ① Can be operated with the electric actuator, dedicated controller, teaching box and 24VDC[Note 1)] power supply.

Basic configuration ② Can be operated with the electric actuator, dedicated controller, controller setup software with PC and 24VDC power supply.
Can also be operated from a PLC[Note 2)] or PC for external control.

Note 1) Because the contoller uses the emergency stop terminal corresponding to the B contact, 24VDC must be applied between the control terminals STOP and COM or operation will not be possible. See the instruction manual for further details.

Note 2) When operating from a PC, the controller setup software (option) is required.

Series LJ1
Electric Actuator
Allowable Dynamic Moment

The table is subjected to moment in various directions, depending on the work piece load point. Design should be such that the amount of work piece overhang stays within the ranges shown in the graphs below.

W: Work load (N)

L_1, L_2, L_3: Amount of overhang to work piece center of gravity (mm)

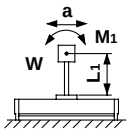
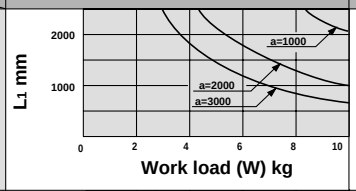
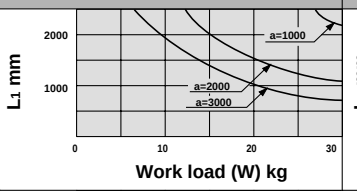
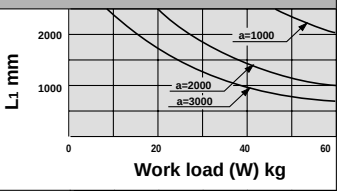
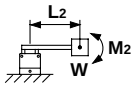
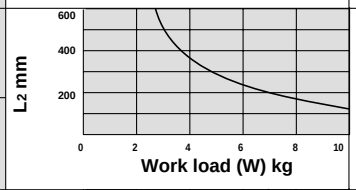
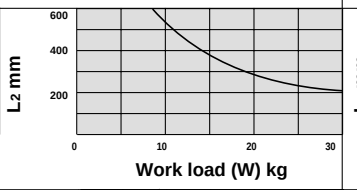
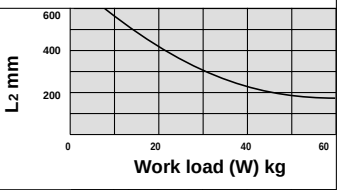
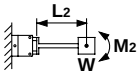
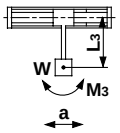
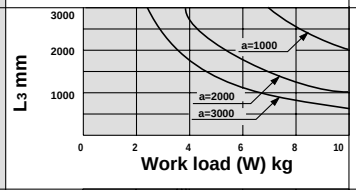
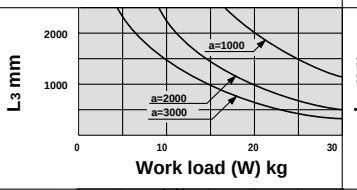
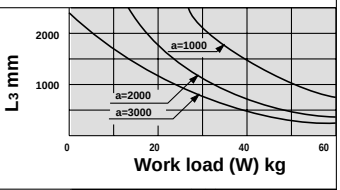
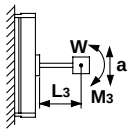
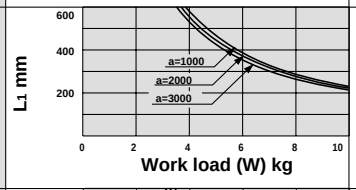
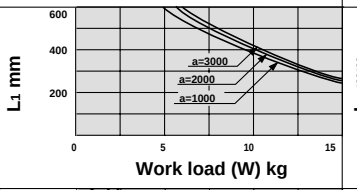
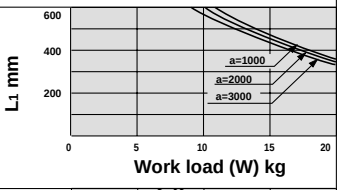
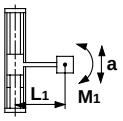
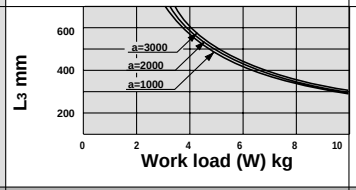
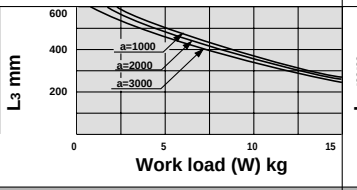
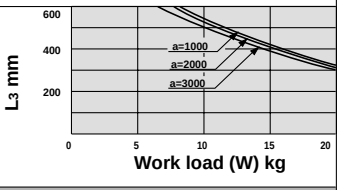
a: Table acceleration (mm/s²)

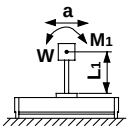
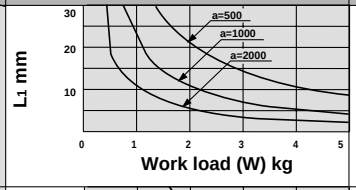
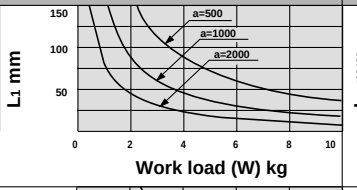
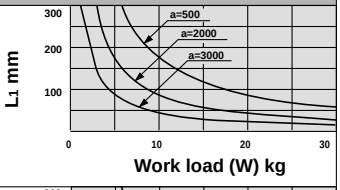
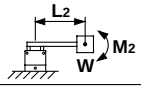
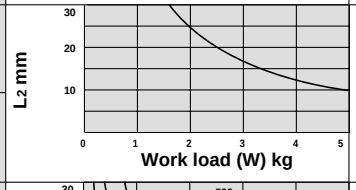
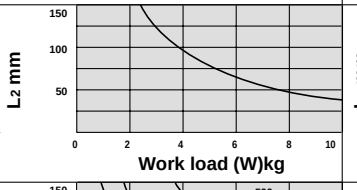
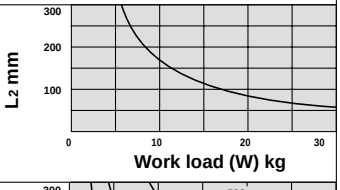
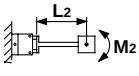
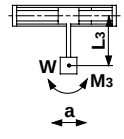
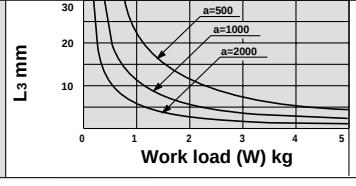
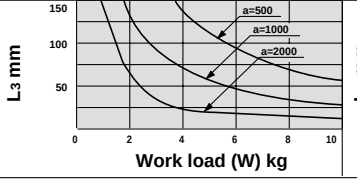
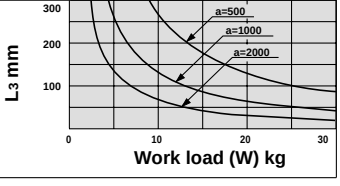
Use of graphs

1) Determine the model.

2) Determine the mounting position.
Confirm whether mounting is horizontal, lateral or vertical (LJ1H only).

3) Confirm the amount of overhang.
Operating conditions should be such that the work load and amount of overhang for each component of moment (pitching, yawing, rolling) fall within the ranges shown in the graphs.

Mounting position / Direction of load movement		Model	LJ1H10	LJ1H20	LJ1H30
Pitching		Horizontal/Lateral			
Rolling		Horizontal			
		Lateral			
Yawing		Horizontal/Lateral			
Pitching		Vertical			
Yawing		Vertical			

Mounting position / Direction of load movement		Model	LJ1S10	LJ1S20	LJ1S30
Pitching		Horizontal/Lateral			
Rolling		Horizontal			
		Lateral			
Yawing		Horizontal/Lateral			

Deflection Data

The load and the amount of deflection at load point W are shown in the graphs below for each series.

With single end support and table moved to the end of the stroke

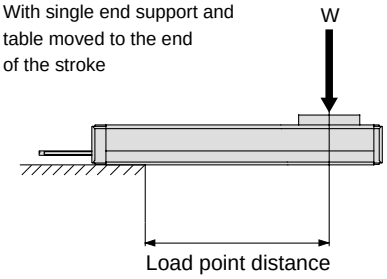


Figure 1. Horizontal

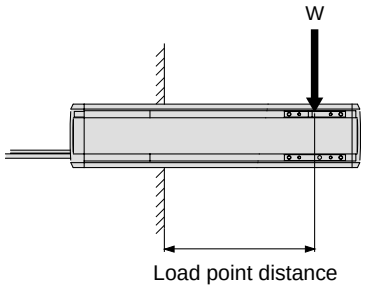
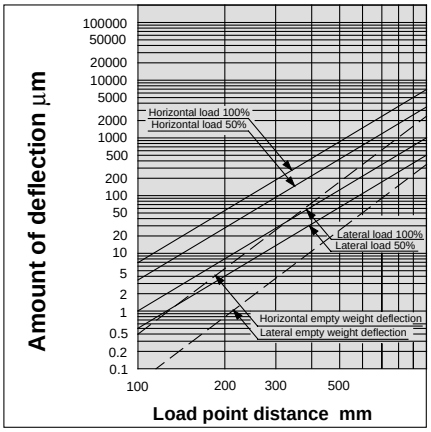
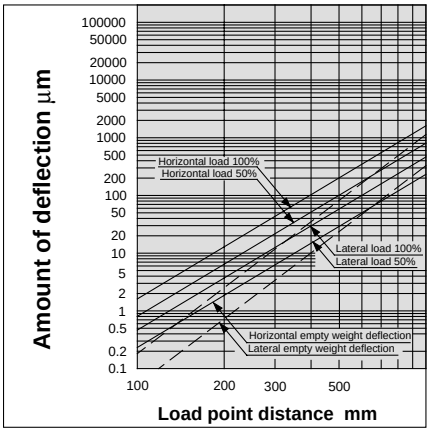


Figure 2. Lateral

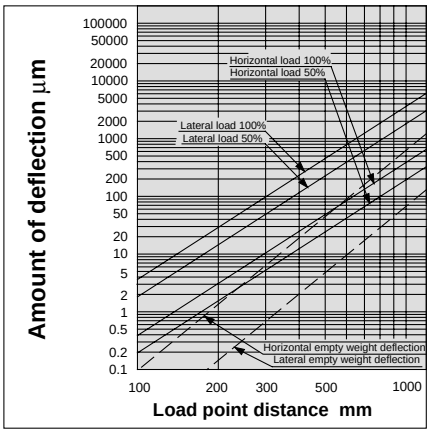
LJ1H10



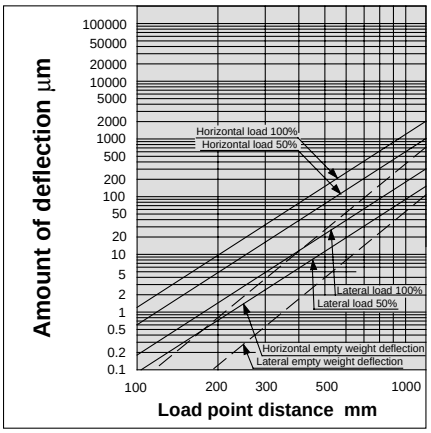
LJ1S10



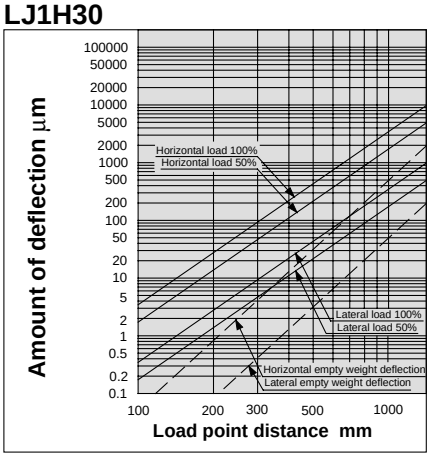
LJ1H20



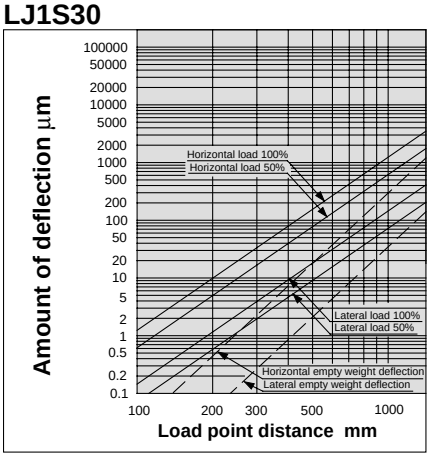
LJ1S20



LJ1H30



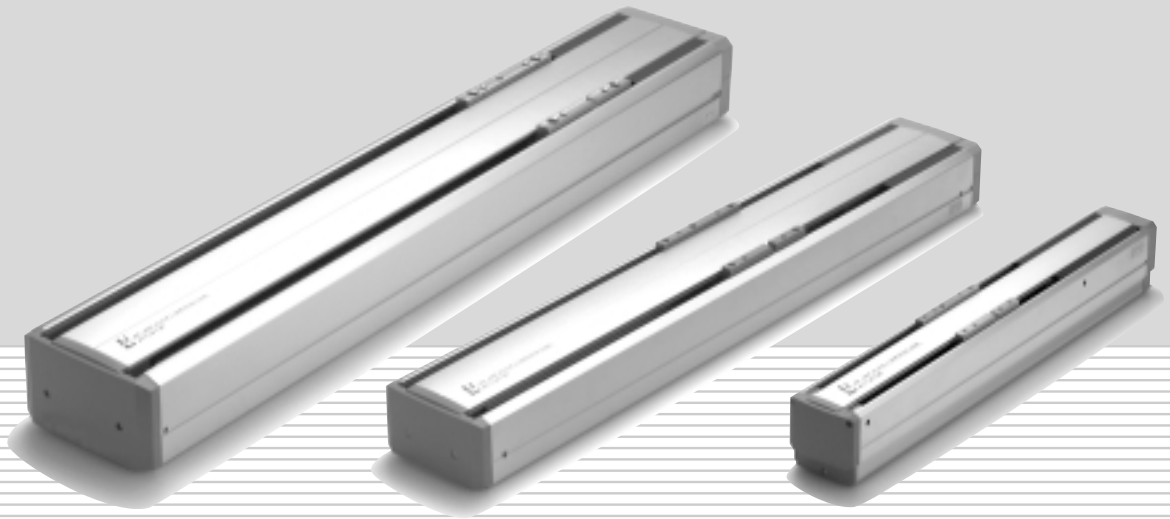
LJ1S30



Uniaxial Electric Actuator

Series LJ1H

High Rigidity Direct Acting Guide



Uniaxial Electric Actuator
High Rigidity Direct Acting Guide Type

Series LJ1H10
Motor Output: 50/100W

How to Order

LJ1 H 10 1 1 N B — 100 ☐ — F 2

Guide type

H	High rigidity direct acting guide

Series

10	Series 10

Motor output

1	50W
2	100W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications.)

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications.)

H	8mm
B	12mm
C	20mm

Stroke
(Refer to Table 1 below for applications.)

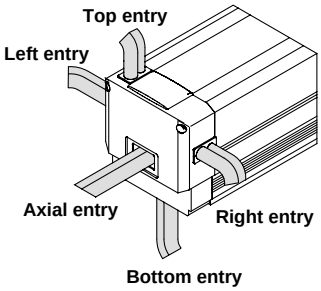
100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

Brake Note)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

Table 1: Feed screw and stroke combinations

Model		Stroke (mm)									
		100	200	300	400	500	600	700	800	900	1000
Screw combination	**LJ1H101☐PB-** **Stroke**	•	•	•	•	•					
	LJ1H101☐NB- **Stroke**	•	•	•	•	•					
	LJ1H101☐SC- **Stroke**	•	•	•	•	•	•	•	•	•	•
	LJ1H102☐PH- **Stroke** **K**	•	•	•	•	•					
	LJ1H102☐NH- **Stroke** **K**	•	•	•	•	•					
	LJ1H102☐PB- **Stroke** **K**	•	•	•	•	•					
	LJ1H102☐NB- **Stroke** **K**	•	•	•	•	•					

Please note that combinations other than those shown above cannot be produced.

⚠Caution

Note) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

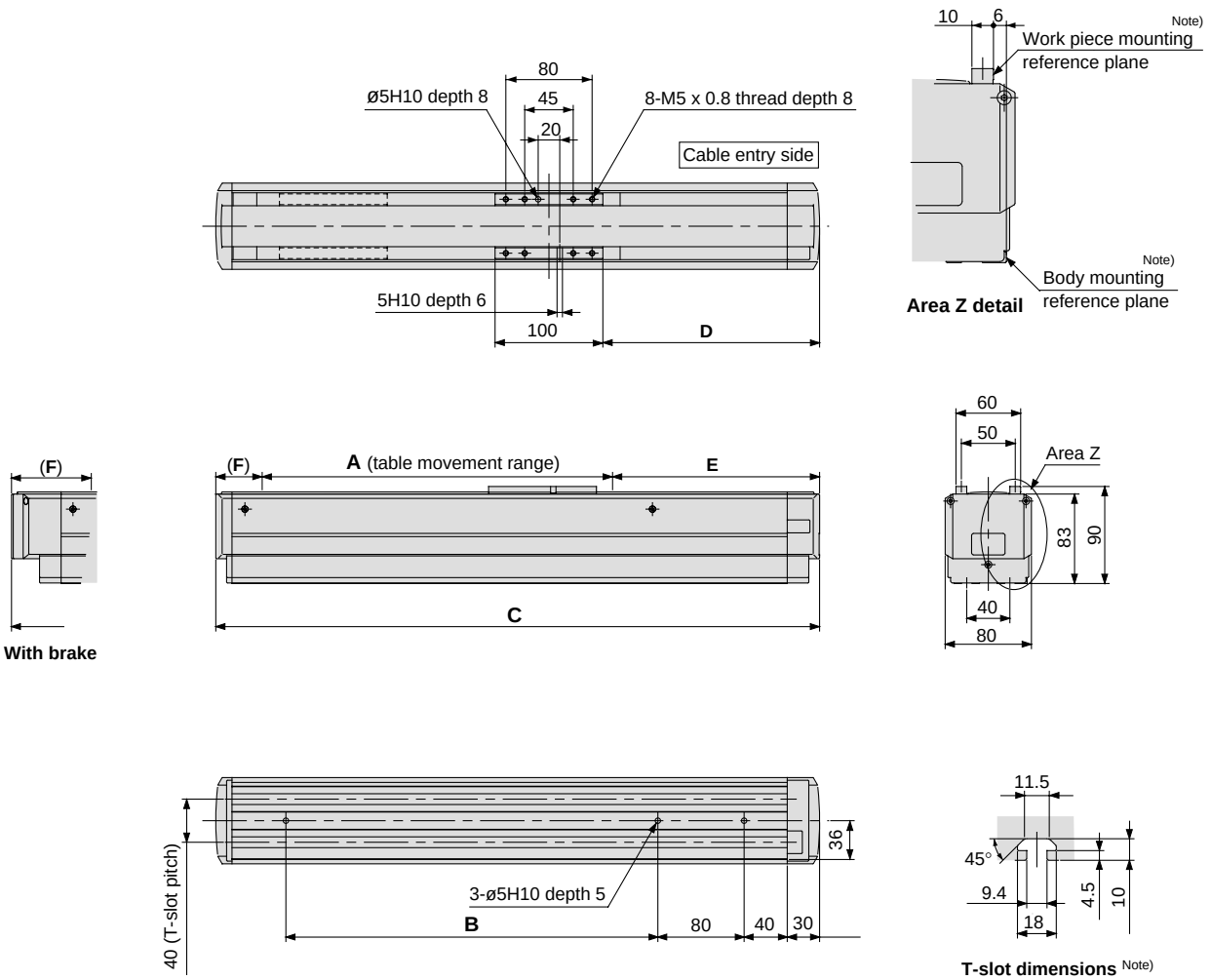
Stroke					mm	100	200	300	400	500	600	700	800	900	1000
Weight	Ball screw				kg	5.2	6.0	6.8	7.5	8.3	–				
	Slide screw				kg	5.3	6.2	7.2	8.0	8.8	9.7	10.5	11.3	12.2	13.0
Operating temperature range					°C	5 to 40 (with no condensation)									
Maximum work load	Horizontal specification	Ball screw	12mm lead	50W	kg	10					–				
		Slide screw	20mm lead			10									
	Vertical Note) specification	Ball screw	12mm lead	100W		5					–				
			8mm lead			10					–				
Maximum speed	Horizontal specification	Ball screw	12mm lead	50W	mm/s	600					–				
		Ball screw	20mm lead			500									
	Vertical Note) specification	Ball screw	12mm lead	100W		600					–				
			8mm lead			400					–				
Rated thrust	Horizontal specification	Ball screw	12mm lead	50W	N	74					–				
		Slide screw	20mm lead			24									
	Vertical Note) specification	Ball screw	12mm lead	100W		150					–				
			8mm lead			225					–				
Positioning repeatability	Ball screw	Rolled			mm	±0.05					–				
		Ground				±0.02					–				
	Slide screw	Rolled				±0.1									
Motor output	Horizontal specification					AC servomotor (50W)									
	Vertical specification Note)					AC servomotor (100W)					–				
Encoder						Incremental system									
Feed screw	Horizontal specification	Ball screw	Rolled			ø12mm, 12mm lead					–				
			Ground								–				
		Slide screw	Rolled			ø20mm, 20mm lead									
	Vertical Note) specification	Ball screw	Rolled			ø12mm, 12mm lead 8mm lead					–				
			Ground												
Guide						High rigidity direct acting guide									
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24V					–				
											–				
	Holding torque				Nm	0.4					–				

⚠ Caution

Note) Since a regenerative absorption unit may be necessary for vertical specifications, a separate inquiry should be made.

Dimensions

Scale: 15%



Dimension table/without brake

(mm)

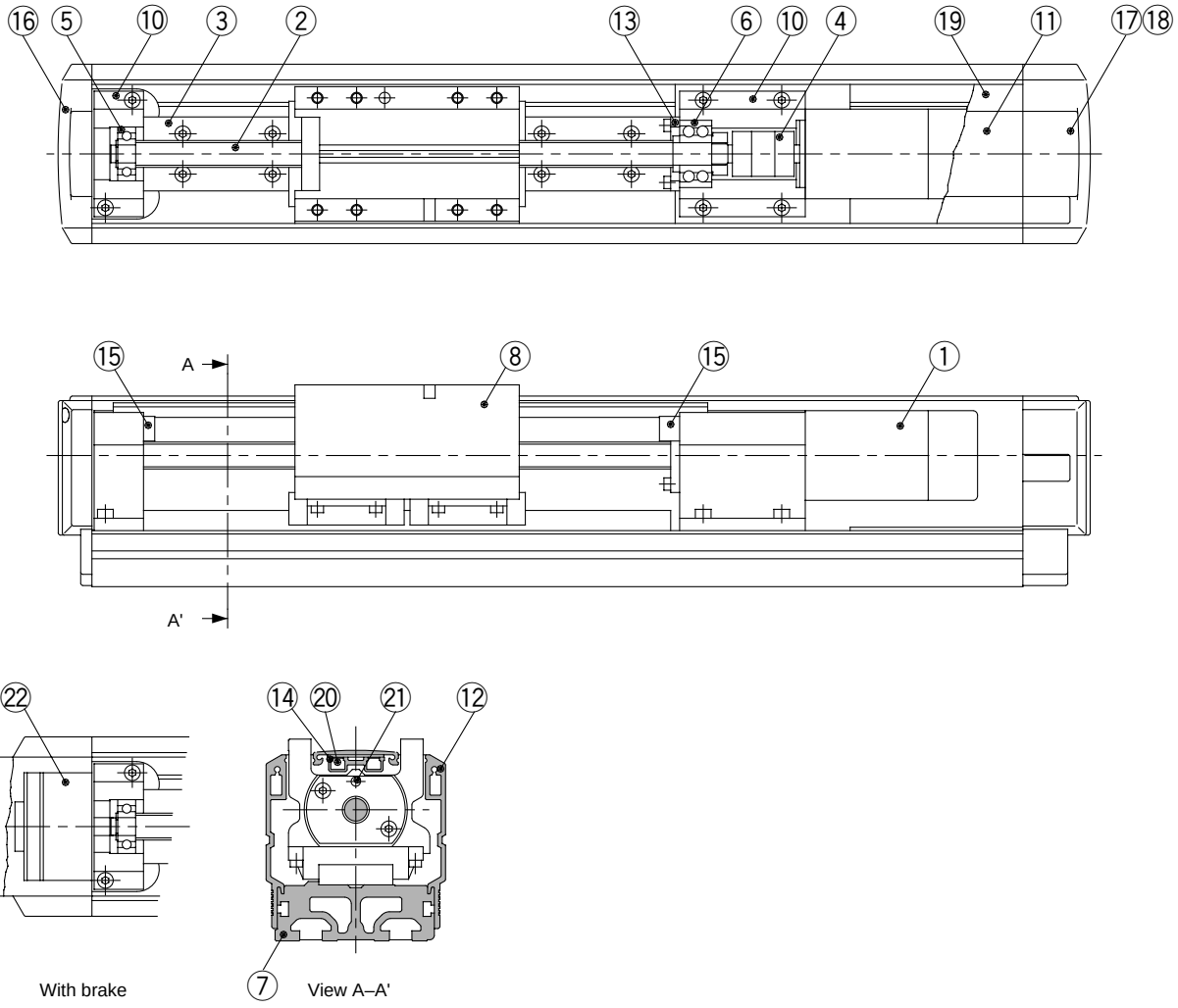
Model	Stroke	A	B	C	D	E	F
LJ1H101□□□-100 -□□	100	225	245	460	201	192	43
LJ1H101□□□-200 -□□	200	325	345	560	201	192	43
LJ1H101□□□-300 -□□	300	425	445	660	201	192	43
LJ1H101□□□-400 -□□	400	525	545	760	201	192	43
LJ1H101□□□-500 -□□	500	625	645	860	201	192	43
LJ1H101□ SC-600 -□□	600	725	745	960	201	192	43
LJ1H101□ SC-700 -□□	700	825	845	1060	201	192	43
LJ1H101□ SC-800 -□□	800	925	945	1160	201	192	43
LJ1H101□ SC-900-□□	900	1025	1045	1260	201	192	43
LJ1H101□ SC-1000-□□	1000	1125	1145	1360	201	192	43

Dimension table/with brake

LJ1H102□□□-100K-□□	100	225	245	507	217	208	74
LJ1H102□□□-200K-□□	200	325	345	607	217	208	74
LJ1H102□□□-300K-□□	300	425	445	707	217	208	74
LJ1H102□□□-400K-□□	400	525	545	807	217	208	74
LJ1H102□□□-500K-□□	500	625	645	907	217	208	74

Note) Special T-nuts are required to secure the body. The special T-nuts are included with the body unit.
Refer to "Options" on page 40 regarding the quantity of T-nuts.
The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.

Construction



Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	50W/100W
2	**Feed screw**	–	Ball screw/Slide screw
3	**High rigidity direct acting guide**	–	
4	**Coupling**	–	
5	**Bearing R**	–	
6	**Bearing F**	–	
7	**Frame A**	Aluminum alloy	
8	**Table**	Aluminum alloy	
9	**Housing A**	Aluminum alloy	
10	**Housing B**	Aluminum alloy	
11	**Top cover**	Aluminum alloy	

Parts list/Main parts

No.	Description	Material	Note
12	**Side cover**	Aluminum alloy	
13	**Housing cover**	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**	–	

Series LJ1H10

Nonstandard Motor Specifications (Motor Output: 50/100W)

How to Order

LJ1 H 10 G 1 1 N B — 100 ☐ — F W — X10

Guide type

H	High rigidity direct acting guide

Series

10	Series 10

Motor specifications

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

Motor output

1	50W
2	100W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications).

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications).

H	8mm
B	12mm
C	20mm

Stroke
(Refer to Table 1 below for applications).

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

Brake Note 2)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Limit switch

Nil	None
W	B contact specification 2pcs.

Note 1)

X10	Nonstandard motor

Note1) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.

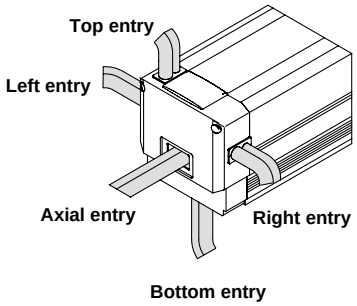


Table 1: Feed screw and stroke combinations

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

Please note that combinations other than those shown above cannot be produced.

Refer to page 4 for dimensions.

⚠Caution

Note 2) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

Stroke					mm	100	200	300	400	500	600	700	800	900	1000
Weight (without motor)	Ball screw				kg	4.8	5.6	6.4	7.1	7.9	–				
	Slide screw				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)									
Maximum work load	Horizontal specification	Ball screw	12mm lead	50W	kg	10					–				
		Slide screw	20mm lead			10									
	Vertical Note 1) specification	Ball screw	12mm lead	100W		5					–				
			8mm lead			10					–				
Maximum speed	Horizontal specification	Ball screw	12mm lead	50W	mm/s	600					–				
		Slide screw	20mm lead			500									
	Vertical Note 1) specification	Ball screw	12mm lead	100W		600					–				
			8mm lead			400					–				
Feed screw	Horizontal specification	Ball screw	Rolled			ø12mm, 12mm lead					–				
			Ground								–				
		Slide screw	Rolled			ø20mm 20mm lead									
	Vertical Note 1) specification	Ball screw	Rolled			ø12mm, 12mm lead 8mm lead					–				
			Ground												
Guide						High rigidity direct acting guide									
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24V					–				
	Holding torque				Nm	0.4					–				
Limit switch Note 2)	Specifications					Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current 150mA									

⚠ Caution

Note 1) Since the maximum work load for vertical specifications is influenced by the regenerative power throughput of the drive, this should be reviewed carefully.

Note 2) Refer to the drawing below for the internal circuitry of the limit switch.

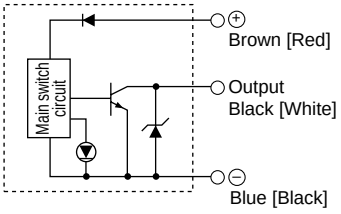
Nonstandard Compatible Motors: The following motors can be mounted when specified.

	Motor output (W)	Power supply voltage (AC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., LTD	50	100/115	MSM5AZP1A	MSD5A1P1E
		200/230		MSD5A3P1E
	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1
		200/230		MR-C10A
	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP
		200/230	SGME-A5AF12	SGDE-A5AP
	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

∗ Refer to the motor compatibility table on page 42 when specified without motor.
∗ Compatible motors for horizontal operation are 50W only, and for vertical operation 100W only.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1$^{H}_{S}$10 on page 43.
These may be used for reference during design and assembly.
∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

D-Y59AL-232



Uniaxial Electric Actuator
High Rigidity Direct Acting Guide Type

Series LJ1H20
Motor Output:100W

How to Order

LJ1 H 20 2 1 N A — 300 ☐ — F 2

Guide type

H	High rigidity direct acting guide

Series

20	Series 20

Motor output

2	100W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications.)

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications.)

F	5mm
A	10mm
C	20mm

Stroke
(Refer to Table 1 below for applications.)

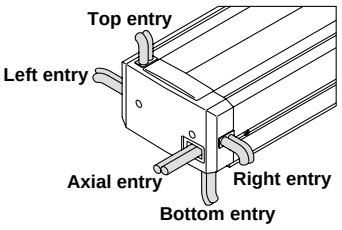
100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

Brake Note)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

Table 1: Feed screw and stroke combinations

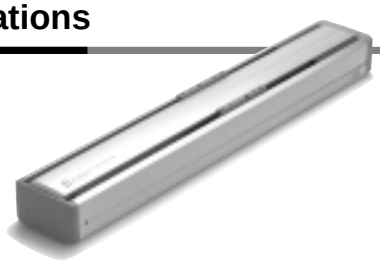
Model		Stroke (mm)										
		100	200	300	400	500	600	700	800	900	1000	1200
Screw combination	LJ1H202☐PA-Stroke	•	•	•	•	•	•					
	LJ1H202☐NA-Stroke	•	•	•	•	•	•					
	LJ1H202☐PC-Stroke					•	•	•	•	•	•	
	LJ1H202☐NC-Stroke					•	•	•	•	•	•	
	LJ1H202☐SC-Stroke	•	•	•	•	•	•	•	•	•	•	•
	LJ1H202☐PF-StrokeK	•	•	•	•	•	•					
	LJ1H202☐NF-StrokeK	•	•	•	•	•	•					
	LJ1H202☐PA-StrokeK	•	•	•	•	•	•					
	LJ1H202☐NA-StrokeK	•	•	•	•	•	•					

Please note that combinations other than those shown above cannot be produced.

⚠ Caution

Note) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

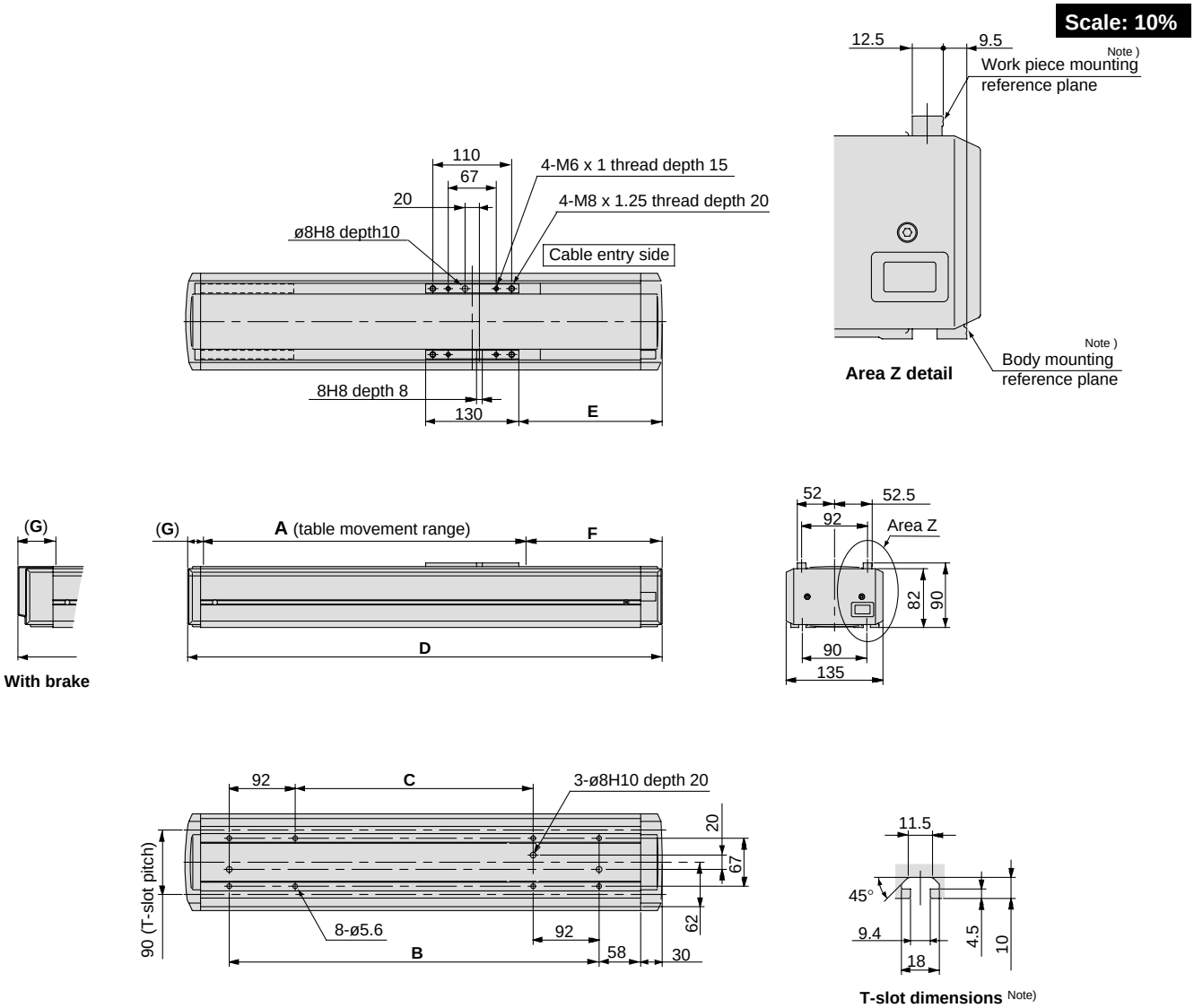


Stroke					mm	100	200	300	400	500	600	700	800	900	1000	1200
Weight	Ball screw				kg	7.7	8.9	10.1	11.2	12.6	13.7	14.5	15.3	17.2	18.6	–
	Slide screw				kg	9.0	10.0	11.1	12.2	13.3	14.3	15.3	17.2	19.1	20.6	24.7
Operating temperature range					°C	5 to 40 (with no condensation)										
Maximum work load	Horizontal specification	Ball screw	10mm lead	100W	kg	30						–				
			20mm lead			–				30						–
		Slide screw	20mm lead			15										
	Vertical Note) specification	Ball screw	5mm lead			15						–				
			10mm lead			8						–				
Maximum speed	Horizontal specification	Ball screw	10mm lead	100W	mm/s	500						–				
			20mm lead			–				1000		930	740	600	500	–
		Slide screw	20mm lead			500										
	Vertical Note) specification	Ball screw	5mm lead			250						–				
			10mm lead			500						–				
Rated thrust	Ball screw		5mm lead	100W	Nm	360						–				
			10mm lead			180						–				
			20mm lead			–				90						–
	Slide screw		20mm lead			50										
Positioning repeatability	Ball screw	Rolled			mm	±0.05										
		Ground				±0.02										
	Slide screw	Rolled				±0.1										
Motor output	Horizontal specification					AC servomotor (100W)										
	Vertical specification Note)					AC servomotor (100W)										
Encoder						Incremental system										
Feed screw	Horizontal specification	Ball screw	Rolled			ø15mm, 10mm lead						–				
			Ground			–				ø15mm, 20mm lead						–
		Slide screw	Rolled			ø20mm, 20mm lead										
	Vertical Note) specification	Ball screw	Rolled			ø16mm, 5mm lead ø15mm, 10mm lead						–				
			Ground													
Guide						High rigidity direct acting guide										
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24VDC						–				
												–				
	Holding torque				Nm	0.4						–				

⚠Caution

Note) Since a regenerative absorption unit may be necessary for vertical specifications, a separate inquiry should be made.

Dimensions



Dimension table/without brake

(mm)

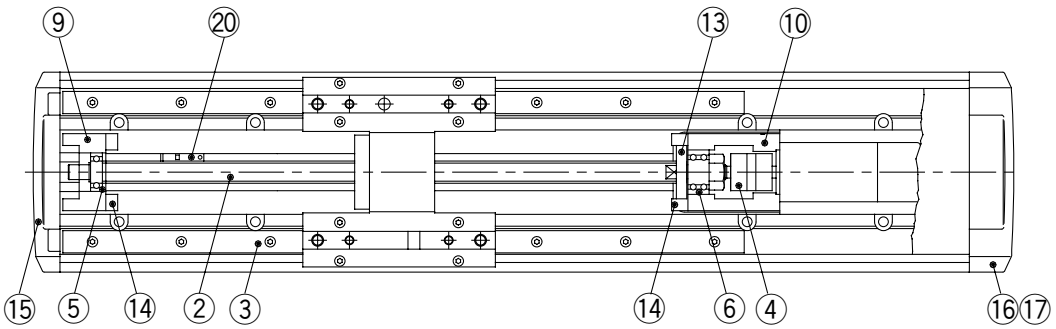
Model	Stroke	A	B	C	D	E	F	G
LJ1H202□□□- 100 -□□	100	250	316	132	462	200	190	22
LJ1H202□□□- 200 -□□	200	350	416	232	562	200	190	22
LJ1H202□□□- 300 -□□	300	450	516	332	662	200	190	22
LJ1H202□□□- 400 -□□	400	550	616	432	762	200	190	22
LJ1H202□□□- 500 -□□	500	650	716	532	862	200	190	22
LJ1H202□□□- 600 -□□	600	750	816	632	962	200	190	22
LJ1H202□□C- 700 -□□	700	859	916	732	1062	192	177	26
LJ1H202□□C- 800 -□□	800	959	1016	832	1162	192	177	26
LJ1H202□□C- 900 -□□	900	1059	1116	932	1262	192	177	26
LJ1H202□□C-1000 -□□	1000	1159	1216	1032	1362	192	177	26
LJ1H202□SC -1200 -□□	1200	1359	1416	1232	1562	192	177	26

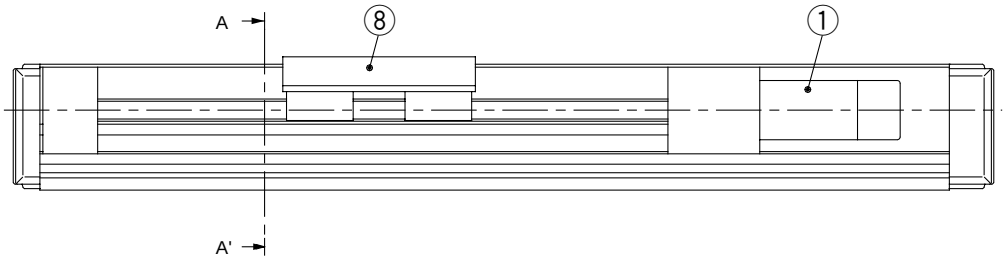
Dimension table/with brake

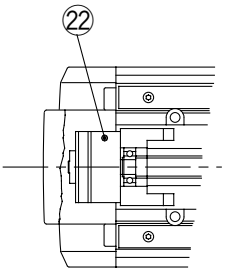
LJ1H202□□□-100K-□□	100	250	316	132	493	200	190	53
LJ1H202□□□-200K-□□	200	350	416	232	593	200	190	53
LJ1H202□□□-300K-□□	300	450	516	332	693	200	190	53
LJ1H202□□□-400K-□□	400	550	616	432	793	200	190	53
LJ1H202□□□-500K-□□	500	650	716	532	893	200	190	53
LJ1H202□□□-600K-□□	600	750	816	632	993	200	190	53

Note) The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.
When mounting the body unit, M6 x (30+α, α: effective thread length of the actuator mounting platform) bolts are required.
When mounting using the T-slots on the actuator, special T-nuts are required. Refer to "Options" on page 40.

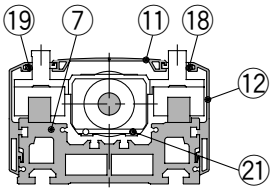
Construction







With brake



View A–A'

Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	100W
2	**Feed 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	**Body cover A**	Aluminum alloy	

Parts list/Main parts

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**	–	

Series LJ1H20

Nonstandard Motor Specifications (Motor Output:100W)

How to Order

LJ1 H 20 G 2 1 N A — 300 ☐ — F W — X10

Guide type

H	High rigidity direct acting guide

Series

20	Series 20

Motor specifications

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

Motor output

2	100W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications).

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications).

F	5mm
A	10mm
C	20mm

Stroke
(Refer to Table 1 below for applications).

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

Brake Note 2)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Limit switch

Nil	None
W	B contact specification 2pcs.

Note 1)

X10	Nonstandard motor

Note 1) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.

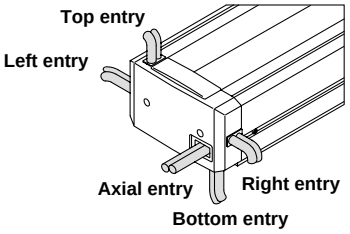


Table 1: Feed screw and stroke combinations

Model		Stroke (mm)										
		100	200	300	400	500	600	700	800	900	1000	1200
Screw combination	LJ1H20□2□PA- Stroke	•	•	•	•	•	•					
	LJ1H20□2□NA- Stroke	•	•	•	•	•	•					
	LJ1H20□2□PC- Stroke					•	•	•	•	•	•	
	LJ1H20□2□NC- Stroke					•	•	•	•	•	•	
	LJ1H20□2□SC- Stroke	•	•	•	•	•	•	•	•	•	•	•
	LJ1H20□2□PF- Stroke K	•	•	•	•	•	•					
	LJ1H20□2□NF- Stroke K	•	•	•	•	•	•					
	LJ1H20□2□PA- Stroke K	•	•	•	•	•	•					
	LJ1H20□2□NA- Stroke K	•	•	•	•	•	•					

Please note that combinations other than those shown above cannot be produced.

Refer to page 10 for dimensions.

⚠Caution

Note 2) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

Stroke					mm	100	200	300	400	500	600	700	800	900	1000	1200
Weight (without motor)	Ball screw				kg	7.2	8.4	9.6	10.7	12.1	13.2	14.4	15.6	16.8	18.0	–
	Slide screw				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)										
Maximum work load	Horizontal specification	Ball screw	10mm lead	100W	kg	30						–				
			20mm lead			–				30						–
		Slide screw	20mm lead			15										
	Vertical Note 1) specification	Ball screw	5mm lead			15						–				
			10mm lead			8						–				
Maximum speed	Horizontal specification	Ball screw	10mm lead	100W	mm/s	500						–				
			20mm lead			–				1000		930	740	600	500	–
		Slide screw	20mm lead			500										
	Vertical Note 1) specification	Ball screw	5mm lead			250						–				
			10mm lead			500						–				
Feed screw	Horizontal specification	Ball screw	Rolled, Ground			ø15mm, 10mm lead						–				
						–				ø15mm, 20mm lead						–
		Slide screw	Rolled			ø20mm, 20mm lead										
	Vertical Note 1) specification	Ball screw	Rolled, Ground			ø16mm, 5mm lead ø15mm, 10mm lead						–				
Guide						High rigidity direct acting guide										
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24V						–				
	Holding torque				Nm	0.4						–				
Limit switch Note 2)	Specifications					Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current 150mA										

⚠Caution

Note 1) Since the maximum work load for vertical specifications is influenced by the regenerative power throughput of the drive, this should be reviewed carefully.

Note 2) Refer to the drawing below for the internal circuitry of the limit switch.

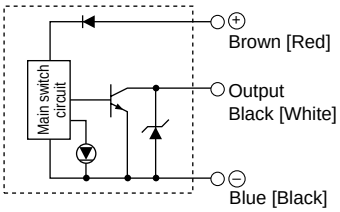
Nonstandard Compatible Motors: The following motors can be mounted when specified.

	Motor output (W)	Power supply voltage (AC)	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

∗ Refer to the motor compatibility table on page 42 when specified without motor.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1$^{H}_{S}$ 20 on page 43.
These may be used for reference during design and assembly.
∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

D-Y59AL-232



Uniaxial Electric Actuator
High Rigidity Direct Acting Guide Type

Series LJ1H30
Motor Output: 200W

How to Order

LJ1 H 30 3 1 N D — 600 — F 2

Guide type

H	High rigidity direct acting guide

Series

30	Series 30

Motor output

3	200W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications.)

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications.)

A	10mm
D	25mm
E	40mm

Stroke
(Refer to Table 1 below for applications.)

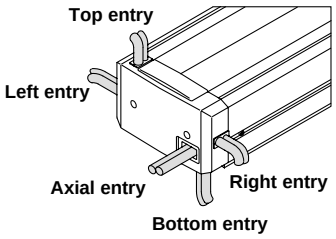
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

Brake Note)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

Table 1: Feed screw and stroke combinations

Model		Stroke (mm)								
		200	300	400	500	600	800	1000	1200	1500
Screw combination	LJ1H303□PD- Stroke	•	•	•	•	•	•	•	•	•
	LJ1H303□ND- Stroke	•	•	•	•	•	•	•	•	•
	LJ1H303□SE- Stroke	•	•	•	•	•	•	•	•	•
	LJ1H303□PA- Stroke K	•	•	•	•	•				
	LJ1H303□NA- Stroke K	•	•	•	•	•				

Please note that combinations other than those shown above cannot be produced.

⚠ Caution

Note) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

Stroke					mm	200	300	400	500	600	800	1000	1200	1500
Weight	Ball screw				kg	16.0	18.0	20.0	22.0	24.0	28.5	33.0	37.0	43.0
	Slide screw				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)								
Maximum work load	Horizontal specification	Ball screw	25mm lead	200W	kg	60								
		Slide screw	40mm lead			30								
	Vertical Note 1) specification	Ball screw	10mm lead			20						–		
Maximum speed Note 2)	Horizontal specification	Ball screw	25mm lead	200W	mm/s	1000							700	500
		Slide screw	40mm lead			500								
	Vertical Note 1) specification	Ball screw	10mm lead			500						–		
Rated thrust	Horizontal specification	Ball screw	25mm lead	200W	N	144								
		Slide screw	40mm lead			50								
	Vertical Note 1) specification	Ball screw	10mm lead			360						–		
Positioning repeatability	Ball screw	Rolled			mm	±0.05								
		Ground				±0.02								
	Slide screw	Rolled				±0.1								
Motor output	Horizontal specification					AC servomotor (200W)								
	Vertical specification Note 1)					AC servomotor (200W)								
Encoder						Incremental system								
Feed screw	Horizontal specification	Ball screw	Rolled			ø25mm, 25mm lead								
			Ground											
		Slide screw	Rolled			ø30mm, 40mm lead								
	Vertical Note 1) specification	Ball screw	Rolled			ø20mm, 10mm lead						–		
			Ground									–		
Guide						High rigidity direct acting guide								
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24VDC						–		
												–		
	Holding torque				Nm	1.0						–		

⚠ Caution

Note 1) **Since a regenerative absorption unit may be necessary for vertical specifications, a separate inquiry should be made.**

Note 2) Since there is a speed limitation based on the load weight even in the case of a horizontal actuator, refer to the table below.

(Table) Maximum speed for each load weight

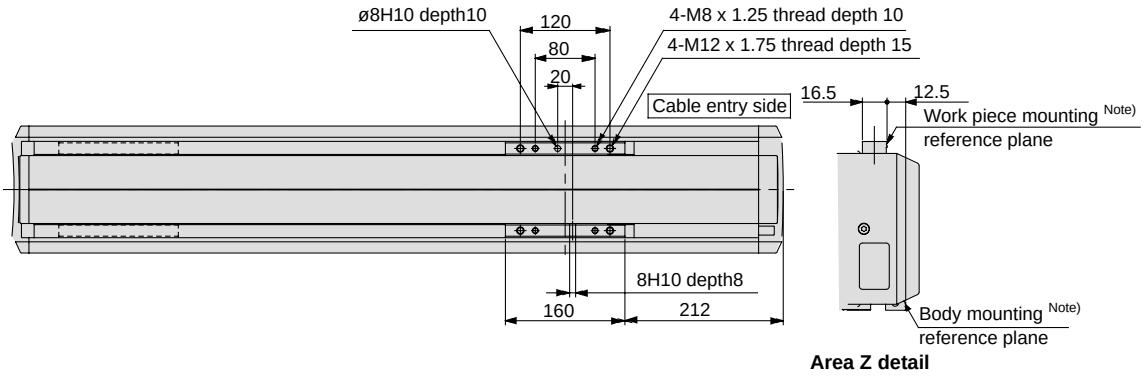
Unit (mm/s)

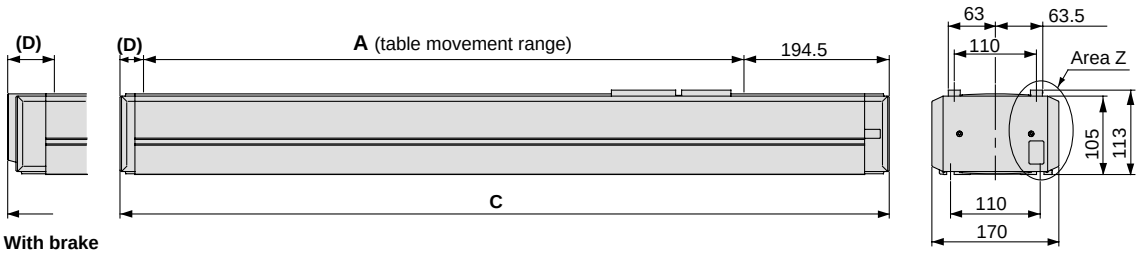
Model	Load weight (N)						Note
	100	200	300	400	500	600	
LJ1H3031□D-200 to 1000-□□	1000	1000	1000	1000	900	800	Power supply 100/110(V)±10% Compatible controller LC1-1B3H1-□□
LJ1H3031□D-1200-□□	700	700	700	700	700	700	
LJ1H3031□D-1500-□□	500	500	500	500	500	500	
LJ1H3032□D-200 to 1000-□□	1000	900	800	700	650	600	Power supply 200(V)±10% Compatible controller LC1-1B3H2-□□
LJ1H3032□D-1200-□□	700	700	700	700	650	600	
LJ1H3032□D-1500-□□	500	500	500	500	500	500	

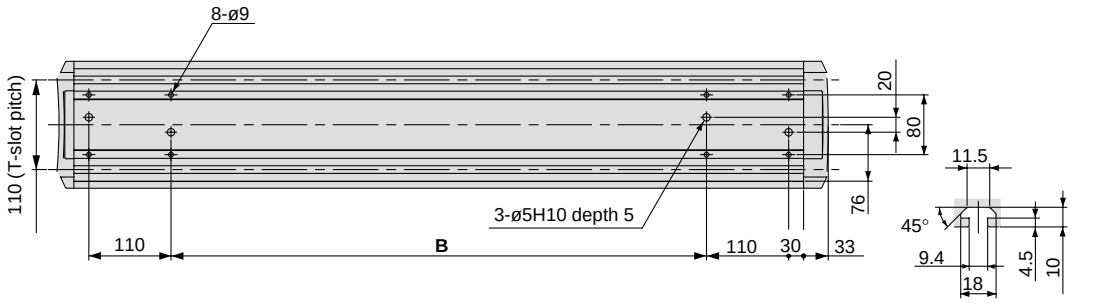
∗ Consult with SMC in case the above conditions are exceeded.

Dimensions

Scale: 10%







Dimension table/without brake

(mm)

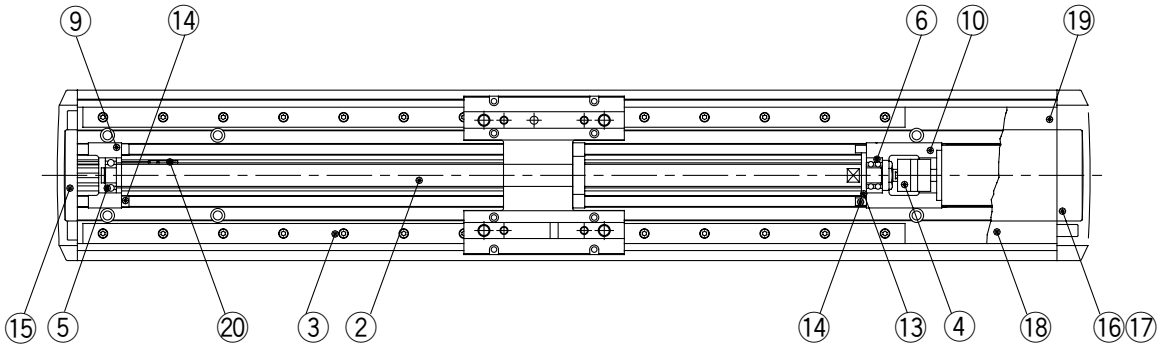
Model	Stroke	A	B	C	D
LJ1H303 □□□ - 200 - □□	200	404	297	630	31.5
LJ1H303 □□□ - 300 - □□	300	504	397	730	31.5
LJ1H303 □□□ - 400 - □□	400	604	497	830	31.5
LJ1H303 □□□ - 500 - □□	500	704	597	930	31.5
LJ1H303 □□□ - 600 - □□	600	804	697	1030	31.5
LJ1H303 □□□ - 800 - □□	800	1004	897	1230	31.5
LJ1H303 □□□-1000 - □□	1000	1204	1097	1430	31.5
LJ1H303 □□□-1200 - □□	1200	1404	1297	1630	31.5
LJ1H303 □□□-1500 - □□	1500	1704	1597	1930	31.5

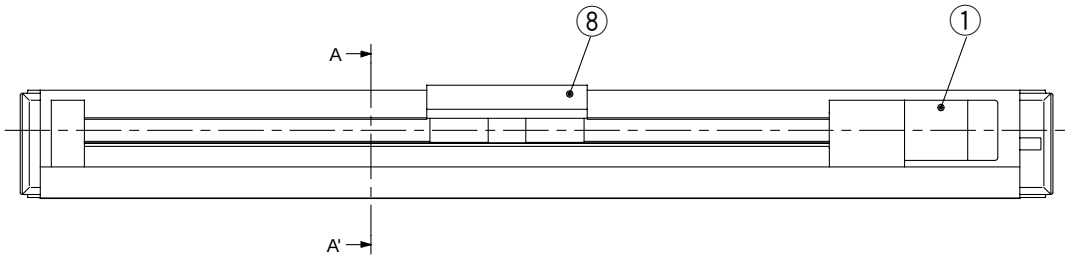
Dimension table/with brake

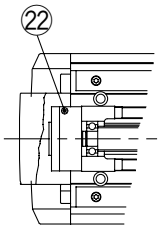
LJ1H303 □□A-200K- □□	200	404	297	661	62.5
LJ1H303 □□A-300K- □□	300	504	397	761	62.5
LJ1H303 □□A-400K- □□	400	604	497	861	62.5
LJ1H303 □□A-500K- □□	500	704	597	961	62.5
LJ1H303 □□A-600K- □□	600	804	697	1061	62.5

Note) The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.
When mounting the body unit, M8 x (30+α, α: effective thread length of the actuator mounting platform) bolts are required.
When mounting using the T-slots on the actuator, special T-nuts are required. Refer to "Options" on page 40.

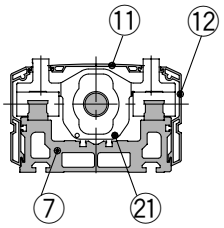
Construction







With brake



View A–A'

Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	200W
2	**Feed 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	

Parts list/Main parts

No.	Description	Material	Note
12	**Side cover**	Aluminum alloy	
13	**Bearing retainer**	Carbon steel	Kanigen 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**	–	

Series LJ1H30

Nonstandard Motor Specifications (Motor Output: 200W)

How to Order

LJ1 H 30 G 3 1 N D — 600 ☐ — F W — X10

Guide type

H	High rigidity direct acting guide

Series

30	Series 30

Motor specifications

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

Motor output

3	200W

Power supply voltage

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

Feed screw type
(Refer to Table 1 below for applications).

P	Ground ball screw
N	Rolled ball screw
S	Slide screw

Feed screw lead
(Refer to Table 1 below for applications).

A	10mm
D	25mm
E	40mm

Stroke
(Refer to Table 1 below for applications).

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

Brake Note 2)

Nil	None
K	With brake

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

Limit switch

Nil	None
W	B contact specification 2pcs.

Note 1)

X10	Nonstandard motor

Note 1) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.

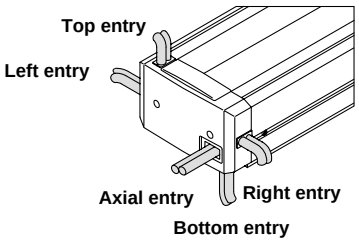


Table 1: Feed screw and stroke combinations

	Model	Stroke (mm)								
		200	300	400	500	600	800	1000	1200	1500
Screw combination	LJ1H30☐3☐PD-Stroke	•	•	•	•	•	•	•	•	•
	LJ1H30☐3☐ND-Stroke	•	•	•	•	•	•	•	•	•
	LJ1H30☐3☐SE-Stroke	•	•	•	•	•	•	•	•	•
	LJ1H30☐3☐PA-Stroke K	•	•	•	•	•				
	LJ1H30☐3☐NA-Stroke K	•	•	•	•	•				

Please note that combinations other than those shown above cannot be produced.

Refer to page 16 for dimensions.

⚠ Caution

Note 2) Units equipped with brakes are for vertical mounting. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

Specifications

Stroke					mm	200	300	400	500	600	800	1000	1200	1500
Weight (without motor)	Ball screw				kg	14.9	16.9	18.9	20.9	22.9	27.4	31.9	35.9	41.9
	Slide screw				kg	13.8	15.9	17.9	20	22.1	26.2	30.4	34.5	40.8
Operating temperature range					°C	5 to 40 (with no condensation)								
Maximum work load	Horizontal specification	Ball screw	25mm lead	200W	kg	60								
		Slide screw	40mm lead			30								
	Vertical Note 1) specification	Ball screw	10mm lead			20					–			
Note 3) **Maximum speed**	Horizontal specification	Ball screw	25mm lead	200W	mm/s	1000							700	500
		Slide screw	40mm lead			500								
	Vertical Note 1) specification	Ball screw	10mm lead			500					–			
Motor output	Horizontal specification					AC servomotor (200W)								
	Vertical specification Note 1)					AC servomotor (200W)								
Encoder						Incremental system								
Feed screw	Horizontal specification	Ball screw	Rolled			ø25mm, 25mm lead								
			Ground											
		Slide screw	Rolled			ø30mm, 40mm lead								
	Vertical Note 1) specification	Ball screw	Rolled			ø20mm, 10mm lead					–			
			Ground								–			
Guide						High rigidity direct acting guide								
Electromagnetic brake	Specifications					Deenergized operation type Rated voltage 24V					–			
											–			
	Holding torque				Nm	1.0					–			
Note 2) **Limit switch**	Specifications					Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current 150mA								

⚠ Caution

Note 1) Since the maximum work load for vertical specifications is influenced by the regenerative power throughput of the drive, this should be reviewed carefully.

Note 2) Refer to the drawing below for the internal circuitry of the limit switch.

Note 3) Since the maximum speed may be limited by the work load, a separate inquiry should be made.

Nonstandard Compatible Motors: The following motors can be mounted when specified.

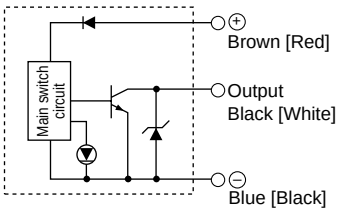
	Motor output (W)	Power supply voltage (AC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., LTD	200	100/115	MSM021P1A	MSD021P1E
		200/230	MSM022P1A	MSD023P1E
Mitsubishi Electric Corporation	200	100/115	HC-PQ23	MR-C20A1
		200/230		MR-C20A
Yaskawa Electric Corporation	200	100/115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

∗ Refer to the motor compatibility table on page 42 when specified without motor.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1 H/S 30 on page 43.
These may be used for reference during design and assembly.

∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

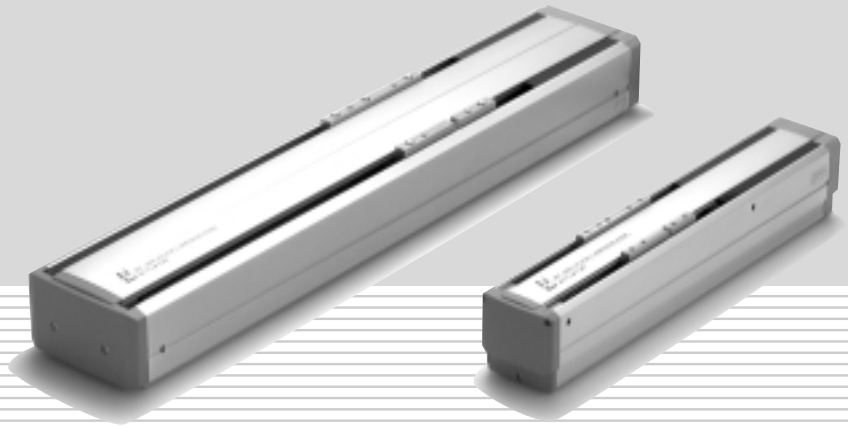
D-Y59AL-232



Uniaxial Electric Actuator

Series LJ1S

Slider Guide



Uniaxial Electric Actuator
Slide Bearing Type
Direct Acting Guide

Series LJ1S10
Motor Output: 50W

How to Order

LJ1 S 10 1 1 S C — 100 — F 2

Guide type

S	Slider guide

Series

10	Series 10

Motor output

1	50W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

C	20mm

Stroke

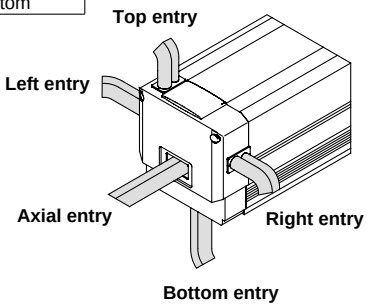
100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



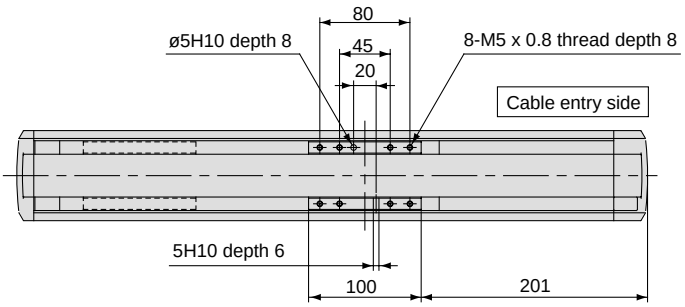
Please make separate inquiry regarding combinations with ball screw
and a special slider guide, which can also be arranged in addition to the above.

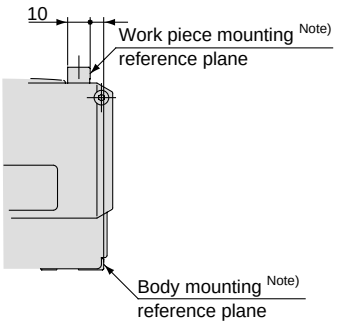
Specifications

Stroke		mm	100	200	300	400	500	600	700	800	900	1000
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)									
Maximum work load		kg	5									
Maximum speed		mm/s	300									
Rated thrust		N	24									
Positioning repeatability		mm	±0.1									
Motor output			AC servomotor (50W)									
Encoder			Incremental system									
Feed screw	Rolled slide screw		ø20mm, 20mm lead									
Guide			Slider guide									

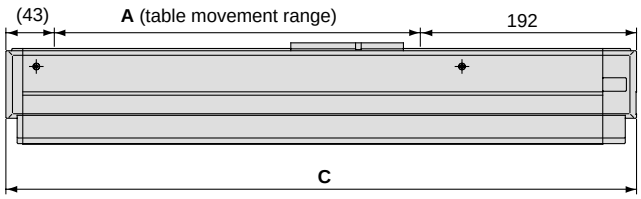
Dimensions

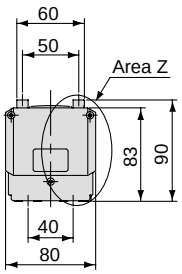
Scale: 15%

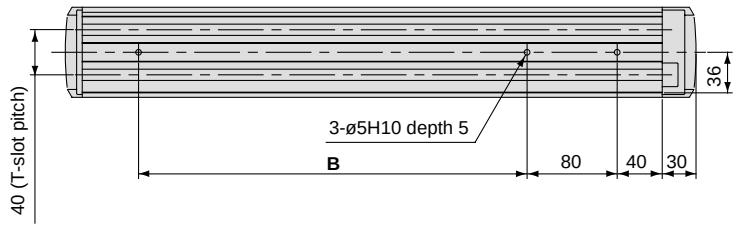


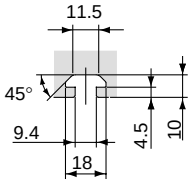


Area Z detail









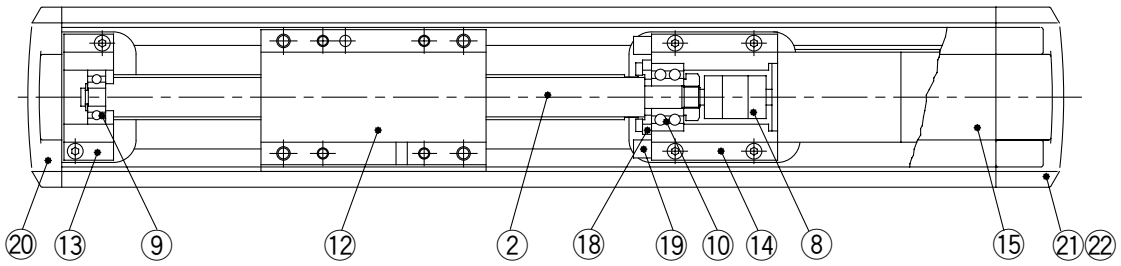
T-slot dimensions Note)

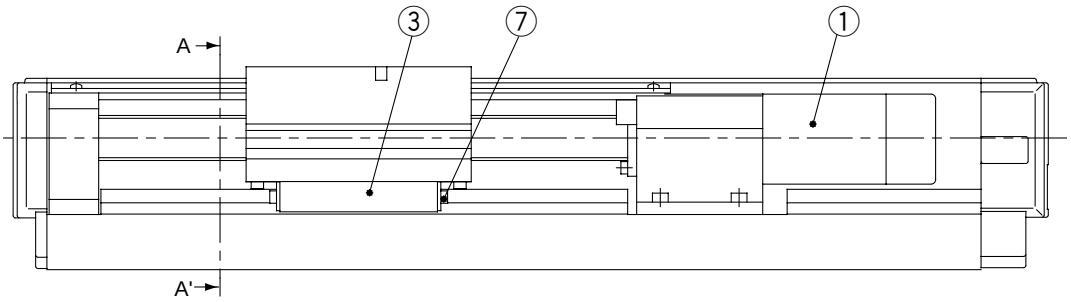
Dimension table

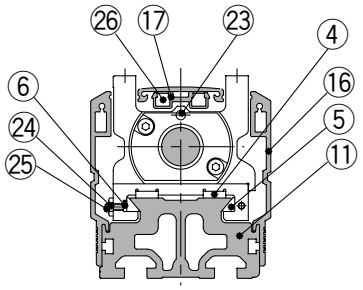
Model	Stroke	A	B	C
LJ1S101□SC- 100-□□	100	225	245	460
LJ1S101□SC- 200-□□	200	325	345	560
LJ1S101□SC- 300-□□	300	425	445	660
LJ1S101□SC- 400-□□	400	525	545	760
LJ1S101□SC- 500-□□	500	625	645	860
LJ1S101□SC- 600-□□	600	725	745	960
LJ1S101□SC- 700-□□	700	825	845	1060
LJ1S101□SC- 800-□□	800	925	945	1160
LJ1S101□SC- 900-□□	900	1025	1045	1260
LJ1S101□SC-1000-□□	1000	1125	1145	1360

Note) Special T-nuts are required to secure the body. The special T-nuts are included with the body unit.
Refer to "Options" on page 40 regarding the quantity of T-nuts, etc.
The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.

Construction







View A-A'

Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	50W
2	**Feed 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	**Frame A**	Aluminum alloy	
12	**Table**	Aluminum alloy	
13	**Housing B**	Aluminum alloy	

Parts list/Main parts

No.	Description	Material	Note
14	**Housing A**	Aluminum alloy	
15	**Top cover A**	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 set screw**	Chrome molybdenum steel	M3 x 8
25	**Nut**	Mild steel	M3
26	**Auto switch**	–	

Series LJ1S10
Nonstandard Motor Specifications (Motor Output: 50W)

How to Order

LJ1 S 10 G 1 1 S C — 100 — F W — X10

Guide type

S	Slider guide

Series

10	Series 10

Motor specifications

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

Motor output

1	50W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

C	20mm

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

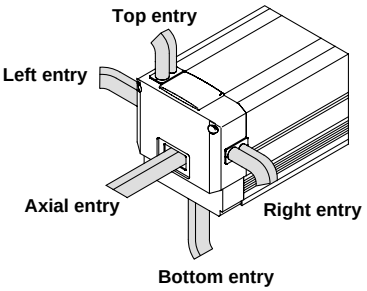
Limit switch

Nil	None
W	B contact specification 2pcs.

Note)

X10	Nonstandard motor

Note) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.



Please make separate inquiry regarding combinations with ball screw and a special slider guide, which can be arranged in addition to the above.
Refer to page 24 for dimensions.

Specifications

Stroke		mm	100	200	300	400	500	600	700	800	900	1000
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)									
Maximum work load		kg	5									
Maximum speed		mm/s	300									
Positioning repeatability		mm	±0.1									
Feed screw	Rolled slide screw		ø20mm, 20mm lead									
Guide			Slider guide									
Limit switch Note)	Specifications		Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current: 150mA									

Note) Refer to the drawing below for the internal circuitry of the limit switch.

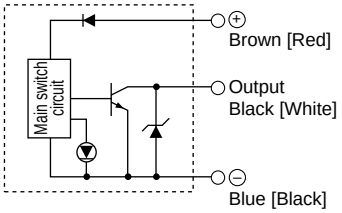
Nonstandard Compatible Motors: The following motors can be mounted when specified.

	Motor output (W)	Power supply voltage (AC)	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

∗ Refer to the motor compatibility table on page 42 when specified without motor.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1 $^{H}_{S}$10 on page 43.
These may be used for reference during design and assembly.
∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

D-Y59AL-232



Uniaxial Electric Actuator
Slide Bearing Type
Direct Acting Guide

Series LJ1S20
Motor Output: 100W

How to Order

LJ1 S 20 2 1 S C — 300 — F 2

Guide type

S	Slider guide

Series

20	Series 20

Motor output

2	100W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

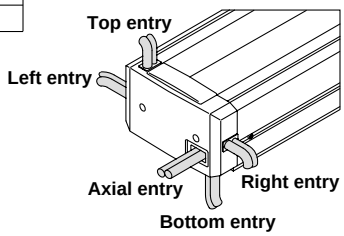
C	20mm

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

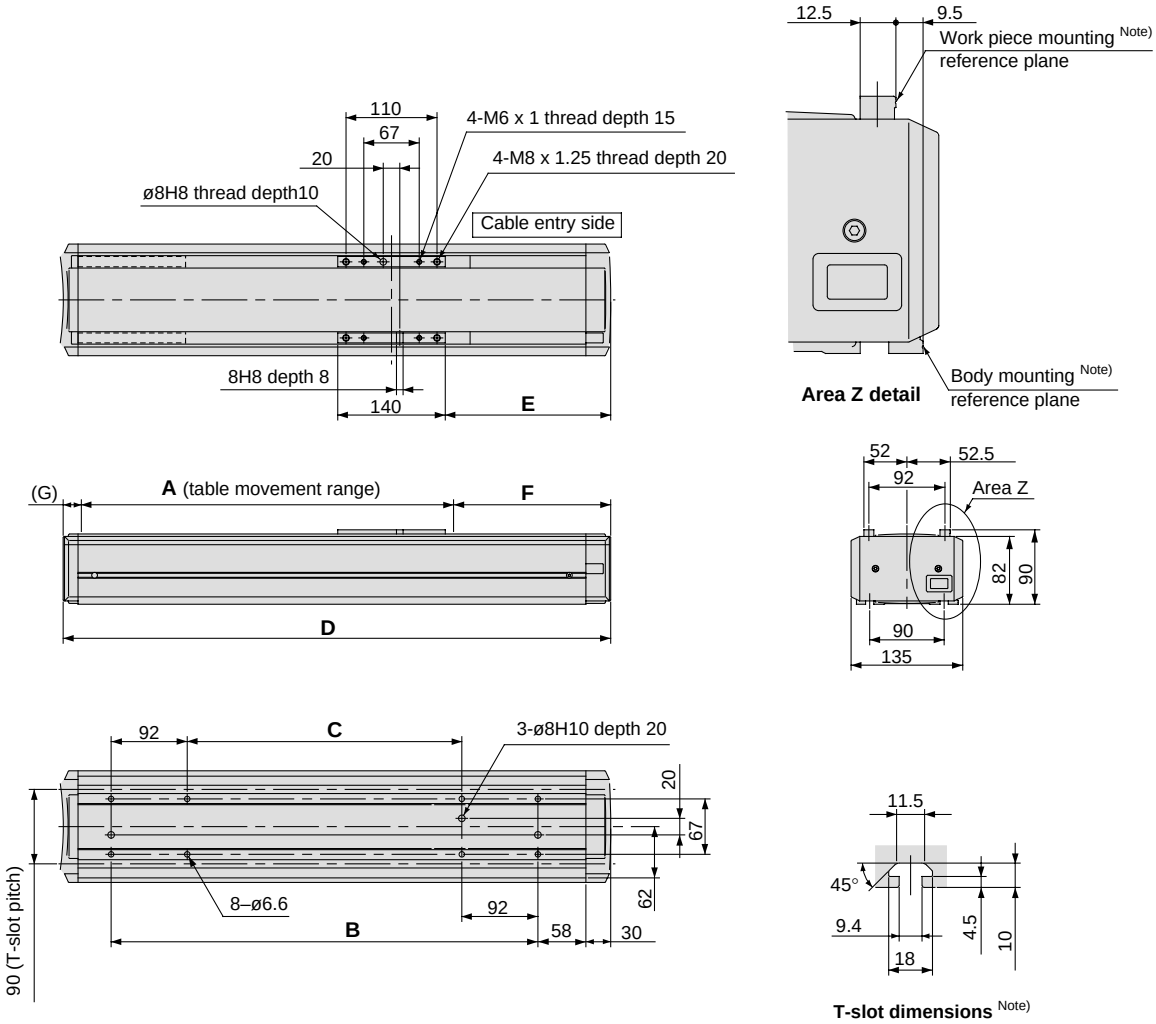
Please make separate inquiry regarding combinations with ball screw
and a special slider guide, which can also be arranged in addition to the above.

Specifications

Stroke		mm	100	200	300	400	500	600	700	800	900	1000	1200
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)										
Maximum work load		kg	10										
Maximum speed		mm/s	300										
Rated thrust		N	50										
Positioning repeatability		mm	±0.1										
Motor output			AC servomotor (100W)										
Encoder			Incremental system										
Feed screw	Rolled slide screw		ø20mm, 20mm lead										
Guide			Slider guide										

Dimensions

Scale: 10%

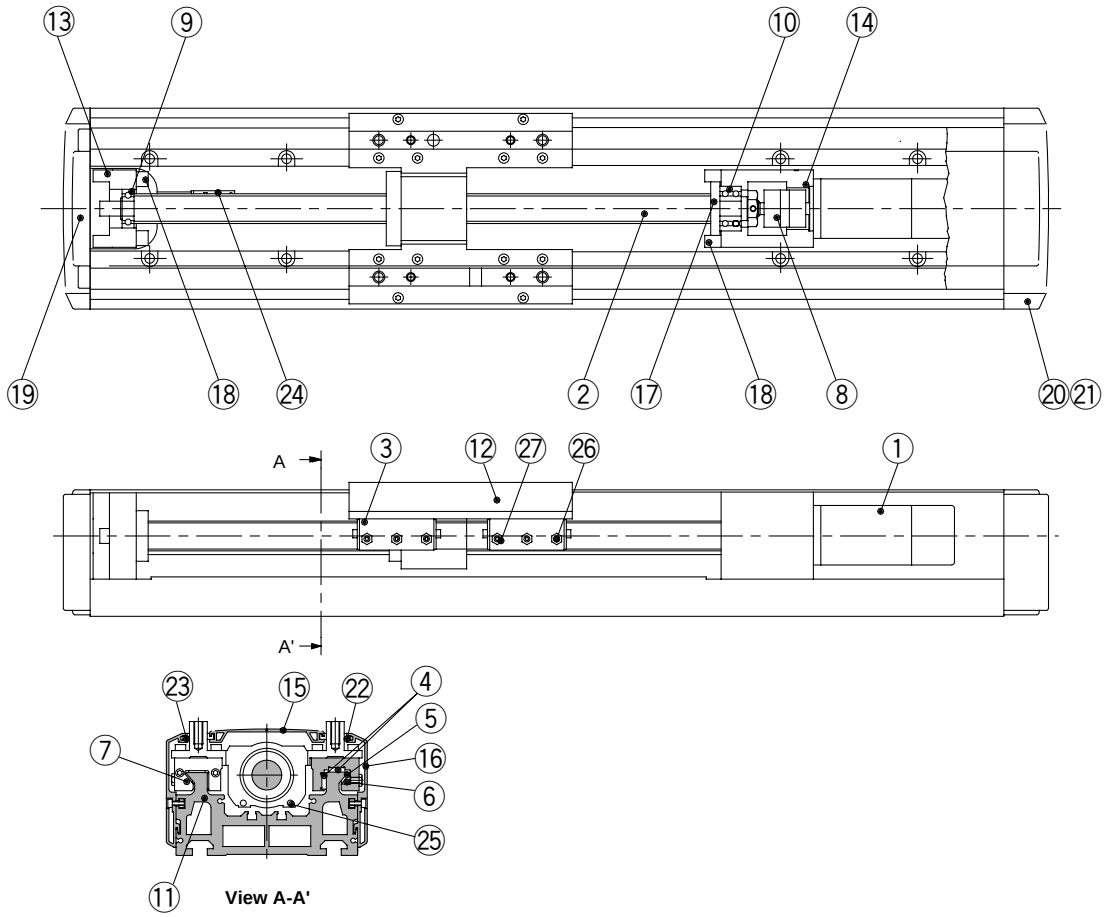


Dimension table/without brake

Model	Stroke	A	B	C	D	E	F	G
LJ1S202□ SC- 100-□□	100	269	316	132	462	184	175	18
LJ1S202□ SC- 200-□□	200	369	416	232	562	184	175	18
LJ1S202□ SC- 300-□□	300	469	516	332	662	184	175	18
LJ1S202□ SC- 400-□□	400	569	616	432	762	184	175	18
LJ1S202□ SC- 500-□□	500	669	716	532	862	184	175	18
LJ1S202□ SC- 600-□□	600	769	816	632	962	184	175	18
LJ1S202□ SC- 700-□□	700	878	916	732	1062	176	162	22
LJ1S202□ SC- 800-□□	800	978	1016	832	1162	176	162	22
LJ1S202□ SC- 900-□□	900	1078	1116	932	1262	176	162	22
LJ1S202□ SC-1000-□□	1000	1178	1216	1032	1362	176	162	22
LJ1S202□ SC-1200-□□	1200	1378	1416	1232	1562	176	162	22

Note) The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.
When mounting the body unit, M6 x (33+α, α: effective thread length of the actuator mounting platform) bolts are required.
When mounting using the T-slots on the actuator, special T-nuts are required. Refer to "Options" on page 40.

Construction



Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	100W
2	**Feed 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	

Parts list/Main parts

No.	Description	Material	Note
14	**Housing B**	Aluminum alloy	
15	**Body cover A**	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 set screw**	Chrome molybdenum steel	M4 x 8
27	**Nut**	Mild steel	M4

Series LJ1S20

Nonstandard Motor Specifications (Motor Output: 100W)

How to Order

LJ1 S 20 G 2 1 S C — 300 — F W — X10

Guide type

S	Slider guide

Series

20	Series 20

Motor specifications

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

Motor output

2	100W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

C	20mm

Stroke

100	100mm
200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
700	700mm
800	800mm
900	900mm
1000	1000mm
1200	1200mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

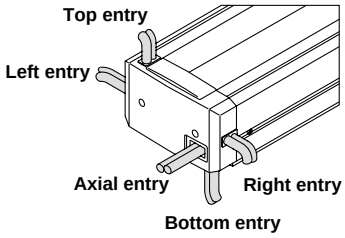
Limit switch

Nil	None
W	B contact specification 2pcs.

Note)

X10	Nonstandard motor

Note) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.



Please make separate inquiry regarding combinations with ball screw and a special slider guide, which can be arranged in addition to the above.
Refer to page 30 for dimensions.

Specifications

Stroke		mm	100	200	300	400	500	600	700	800	900	1000	1200
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)										
Maximum work load		kg	10										
Maximum speed		mm/s	300										
Positioning repeatability		mm	±0.1										
Feed screw	Rolled slide screw		ø20mm, 20mm lead										
Guide			Slider guide										
Limit switch Note)	Specifications		Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current: 150mA										

Note) Refer to the drawing below for the internal circuitry of the limit switch.

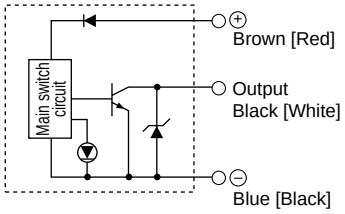
Nonstandard Compatible Motors: The following motors can be mounted when specified.

	Motor output (W)	Power supply voltage (AC)	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

∗ Refer to the motor compatibility table on page 42 when specified without motor.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1$^{H}_{S}$20 on page 43.
These may be used for reference during design and assembly.
∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

D-Y59AL-232



Uniaxial Electric Actuator
Slide Bearing Type
Direct Acting Guide

Series LJ1S30
Motor Output: 200W

How to Order

LJ1 S 30 3 1 S C — 600 — F 2

Guide type

S	Slider guide

Series

30	Series 30

Motor output

3	200W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

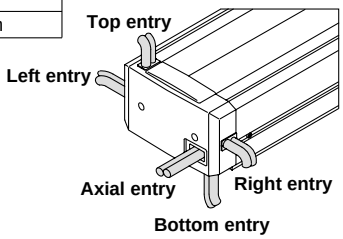
C	20mm

Stroke

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom



Cable length

2	2000mm
3	3000mm
4	4000mm
5	5000mm

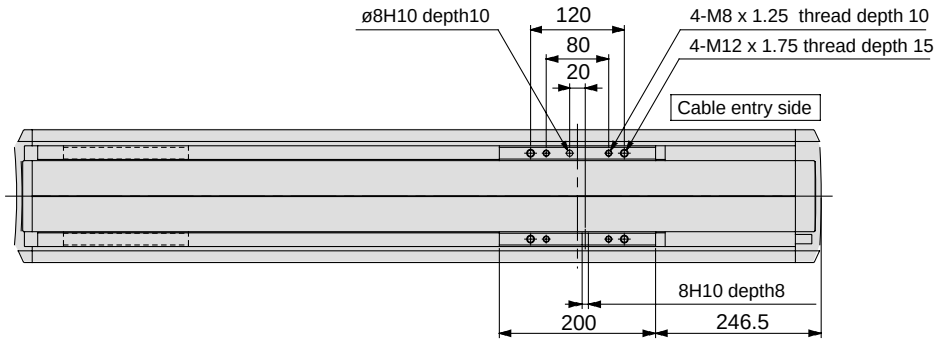
Please make separate inquiry regarding combinations with ball screw
and a special slider guide, which can also be arranged in addition to the above.

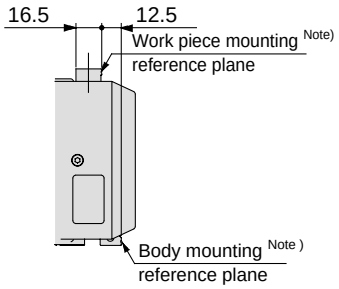
Specifications

Stroke		mm	200	300	400	500	600	800	1000	1200	1500
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)								
Maximum work load		kg	20								
Maximum speed		mm/s	500								
Rated thrust		N	50								
Positioning repeatability		mm	±0.1								
Motor output			AC servomotor (200W)								
Encoder			Incremental system								
Feed screw	Rolled slide screw		ø25mm, 20mm lead								
Guide			Slider guide								

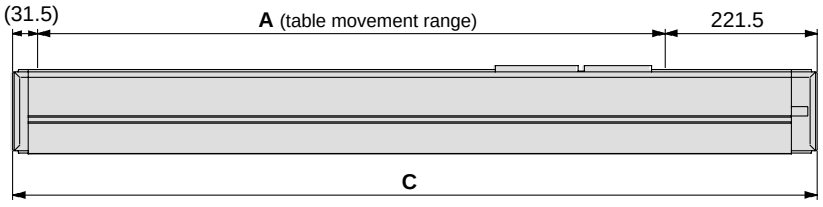
Dimensions

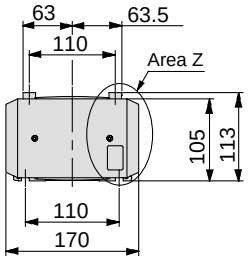
Scale: 10%

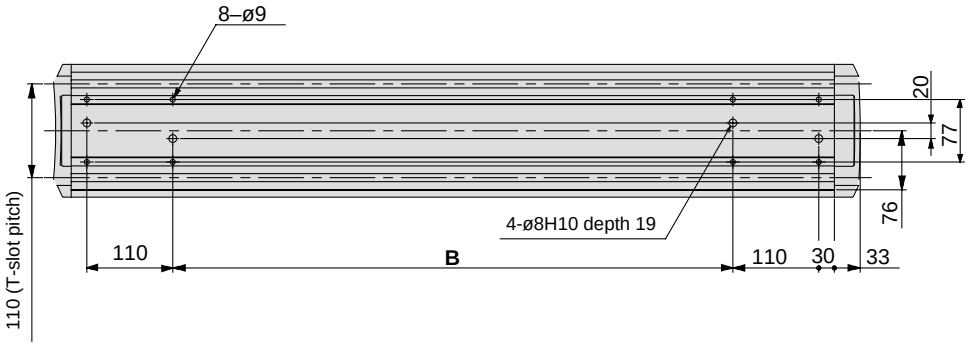


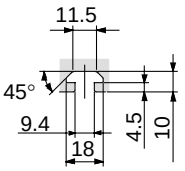


Area Z detail









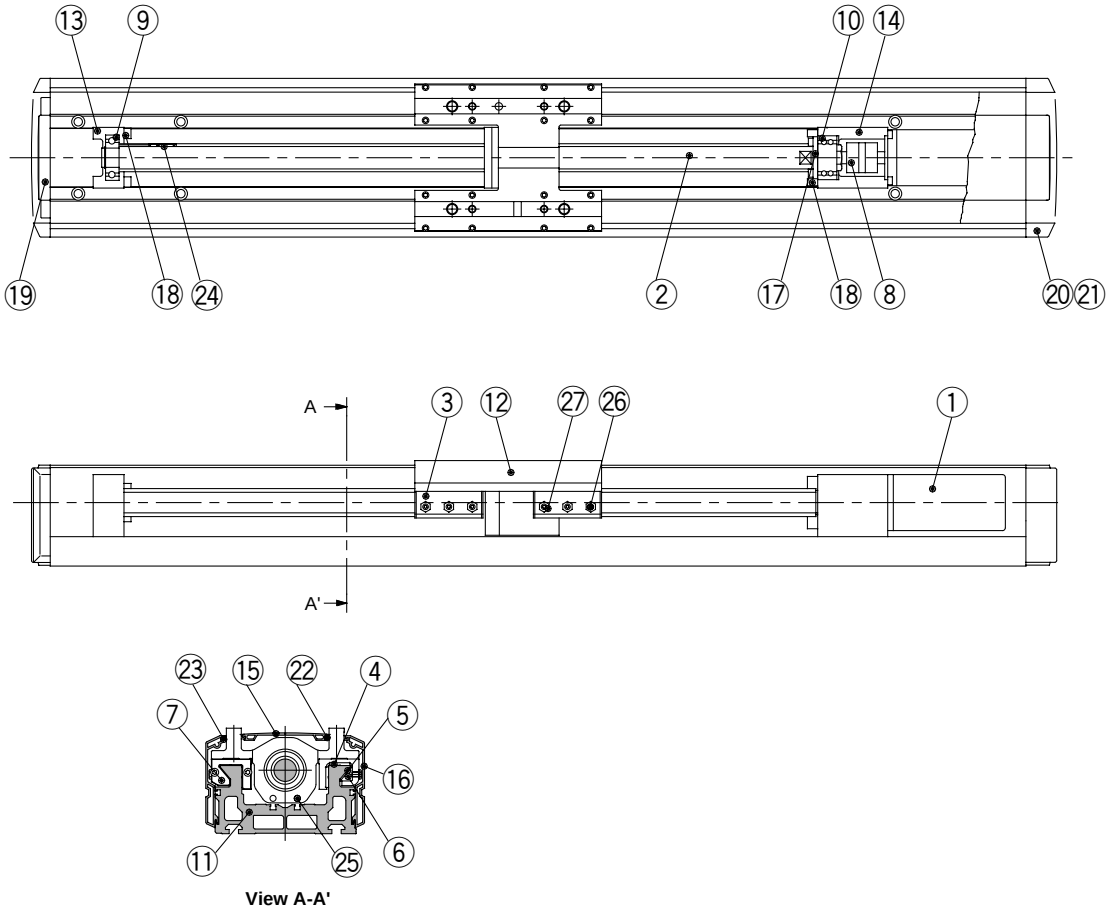
T-slot dimensions Note)

Dimension table/without brake

Model	Stroke	A	B	C
LJ1S303□SC- 200-□□	200	445	365	698
LJ1S303□SC- 300-□□	300	545	465	798
LJ1S303□SC- 400-□□	400	645	565	898
LJ1S303□SC- 500-□□	500	745	665	998
LJ1S303□SC- 600-□□	600	845	765	1098
LJ1S303□SC- 800-□□	800	1045	965	1298
LJ1S303□SC-1000-□□	1000	1245	1165	1498
LJ1S303□SC-1200-□□	1200	1445	1365	1698
LJ1S303□SC-1500-□□	1500	1745	1665	1998

Note) The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting equipment.
When mounting the body unit, M8 x (30+α, α: effective thread length of the actuator mounting platform) bolts are required.
When mounting using the T-slots on the actuator, special T-nuts are required. Refer to "Options" on page 40.

Construction



View A-A'

Parts list/Main parts

No.	Description	Material	Note
1	**AC servomotor**	–	200W
2	**Feed 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	

Parts list/Main parts

No.	Description	Material	Note
14	**Housing B**	Aluminum alloy	
15	**Body cover A**	Aluminum alloy	
16	**Side cover**	Aluminum alloy	
17	**Bearing retainer**	Carbon steel	Kanigen 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 set screw**	Chrome molybdenum steel	M5 x 8
27	**Nut**	Mild steel	M5

Series LJ1S30

Nonstandard Motor Specifications (Motor Output: 200W)

How to Order

LJ1 S 30 G 3 1 S C — 600 — F W — X10

Guide type

S	Slider guide

Series

30	Series 30

Motor specifications

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

Motor output

3	200W

Power supply voltage

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

Feed screw type

S	Slide screw

Feed screw lead

C	20mm

Stroke

200	200mm
300	300mm
400	400mm
500	500mm
600	600mm
800	800mm
1000	1000mm
1200	1200mm
1500	1500mm

Cable entry direction

F	Axial
R	Right
L	Left
T	Top
B	Bottom

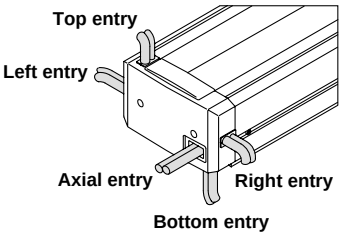
Limit switch

Nil	None
W	B contact specification 2pcs.

Note)

X10	Nonstandard motor

Note) A driver is included when shipped with a nonstandard motor installed. The cable to connect the motor and driver is optional, and may be supplied by the customer, or the cable corresponding to the selected motor may be ordered separately from the section on how to order cables under "Options" on page 40.



Please make separate inquiry regarding combinations with ball screw and a special slider guide, which can be arranged in addition to the above.
Refer to page 36 for dimensions.

Specifications

Stroke		mm	200	300	400	500	600	800	1000	1200	1500
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)								
Maximum work load		kg	20								
Maximum speed		mm/s	500								
Feed screw	Rolled slide screw		ø25mm, 20mm lead								
Guide			Slider guide								
Limit switch Note)	Specifications		Power supply voltage: 4.5 to 28VDC Current consumption: 12mA or less Control output: Open collector, maximum load current: 150mA								

Note) Refer to the drawing below for the internal circuitry of the limit switch.

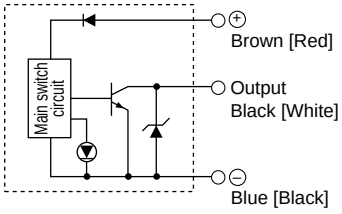
Nonstandard Compatible Motors: The following motors can be mounted when specified.

	Motor output (W)	Power supply voltage (AC)	Motor model	Corresponding 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

∗ Refer to the motor compatibility table on page 42 when specified without motor.
For the dimensions of the motor mounting area, refer to the dimensions for Series LJ1$^{H}_{S}$20 on page 43.
These may be used for reference during design and assembly.
∗ For detailed driver specifications, etc., inquiries should be directed to the respective motor manufacturers.

Limit Switch Internal Circuit

D-Y59AL-232

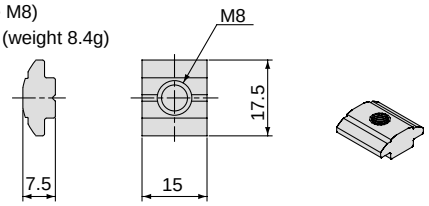


Series LJ1
Option Specifications

T-nuts for Mounting Electric Actuator

T-nuts are used when mounting an actuator using its T-slots. When mounting by means of T-nuts alone, the quantity of nuts indicated below should be used as a minimum.

T-nut (nut size M8)
Type **LJ1-T8** (weight 8.4g)



T-nut quantities for mounting

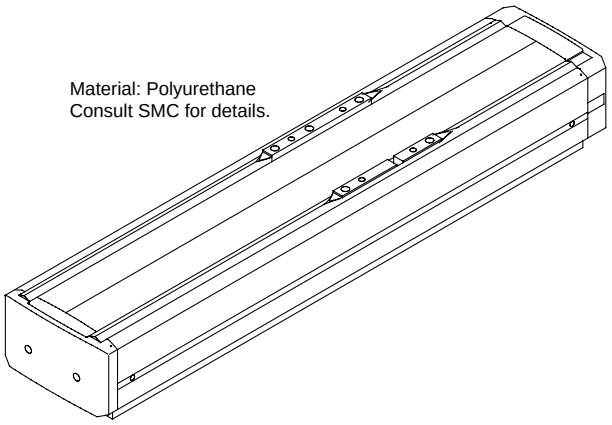
Model	Quantity
LJ1$^{H}_{S}$10	200mm stroke or less 6pcs.
	300mm stroke or more 8pcs.
LJ1$^{H}_{S}$20	8pcs.
LJ1$^{H}_{S}$30	8pcs.

∗ T-nuts are built into the body unit for Series LJ1$^{H}_{S}$10 only.

Dustproof Cover

The dustproof cover prevents the entry of dust, paper dust and scraps, etc.

Material: Polyurethane
Consult SMC for details.



Cover with Switch Slots

This is a cover with T-slots for mounting external switches.
Switch positions can be easily changed.
It is used by replacing the standard cover.

How to Order

LJ1 – K 2 – 300

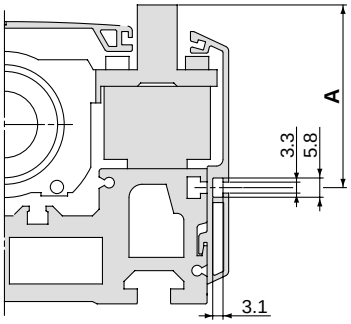
Compatible model

1	LJ1$^{H}_{S}$10
2	LJ1$^{H}_{S}$20
3	LJ1$^{H}_{S}$30

Stroke

100	100mm	**700**	700mm
200	200mm	**800**	800mm
300	300mm	**900**	900mm
400	400mm	**1000**	1000mm
500	500mm	**1200**	1200mm
600	600mm	**1500**	1500mm

∗ Refer to "Series Variations" on Feature page 3 for correspondence of models and strokes.



Dimension table

Model	A
LJ1$^{H}_{S}$10	30
LJ1$^{H}_{S}$20	55
LJ1$^{H}_{S}$30	69

Nonstandard Motor Cables

Cables for connecting nonstandard motors and drivers.
Cable lengths other than those shown below should be arranged by the customer.

How to Order

LJ1 – 1 – G 05

Cable length

05	5m

Compatible models

G	Matsushita Electric Industrial Co., LTD
R	Mitsubishi Electric Corporation
Y	Yasukawa Electric Corporation

Cable compatibility table

Model	Manufacturer's No.
LJ1-1-G05 Note 1)	MFMCA0050AEB (for motor) MFECA0050EAB (for encoder)
LJ1-1-R05	(for motor) Note 2) MR-CCBL5M (for encoder)
LJ1-1-Y05 Note 3)	DP9320081-2 (for motor) DP9320089-2 (for encoder)

Note 1) When the Matsushita Electric Industrial Co., LTD motor driver is selected, in addition to the cable, a power supply connector (MOLEX 5569-1OR) and an interface connector (3M 10126-3000VE) are also required.
Note 2) A cable is not provided for the Mitsubishi Electric Corporation motor, and therefore the customer should arrange a 4 wire 0.75mm^2 electric cable.
Note 3) When the Yasukawa Electric Corporation motor driver is selected, a digital operator and personal computer are required for selecting the various parameters.

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

TSUBAKICABLEVEYOR® Unit for Electric Actuator

TSUBAKICABLEVEYOR® is a registered trade mark of the TSUBAKIMOTO CHAIN CO.

Able to compactly arrange supporting guides for cables and hoses.

How to Order

LJ1 – C [1] – [100]

Compatible model

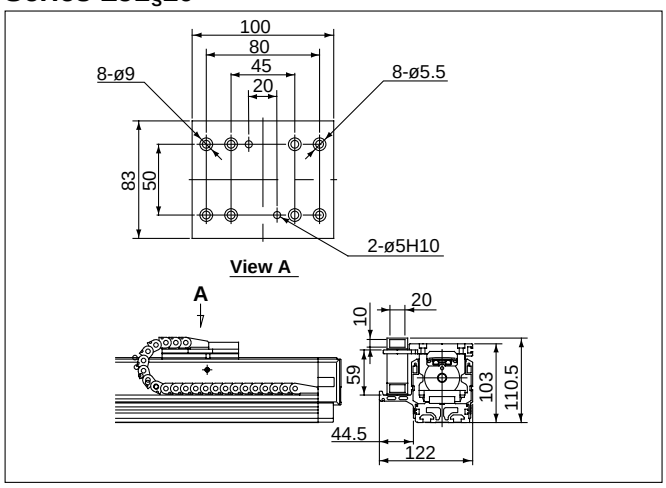
1	LJ1$^{H}_{S}$10
2	LJ1$^{H}_{S}$20
3	LJ1$^{H}_{S}$30

Stroke

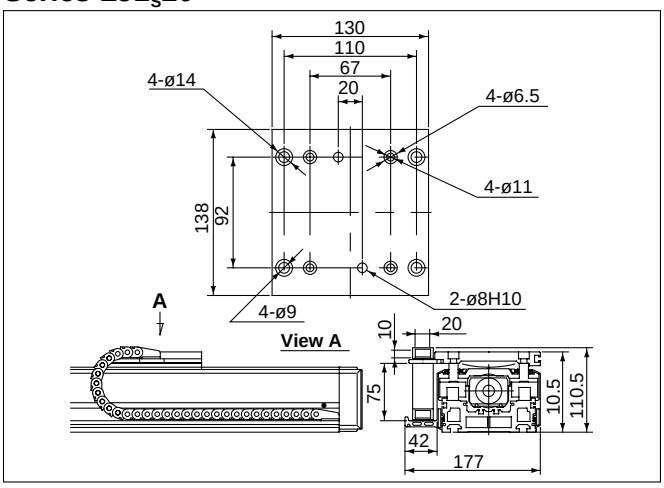
100	100mm	**700**	700mm
200	200mm	**800**	800mm
300	300mm	**900**	900mm
400	400mm	**1000**	1000mm
500	500mm	**1200**	1200mm
600	600mm	**1500**	1500mm

∗ Refer to "Series Variations" on Feature page 3 for correspondence of models and strokes

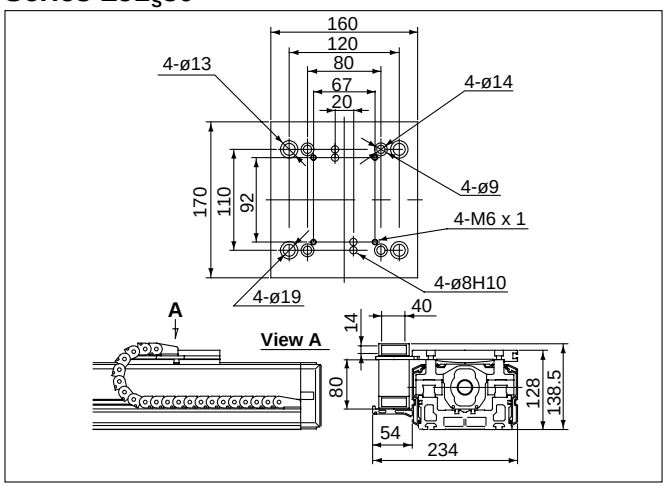
Series LJ1$^{H}_{S}$10



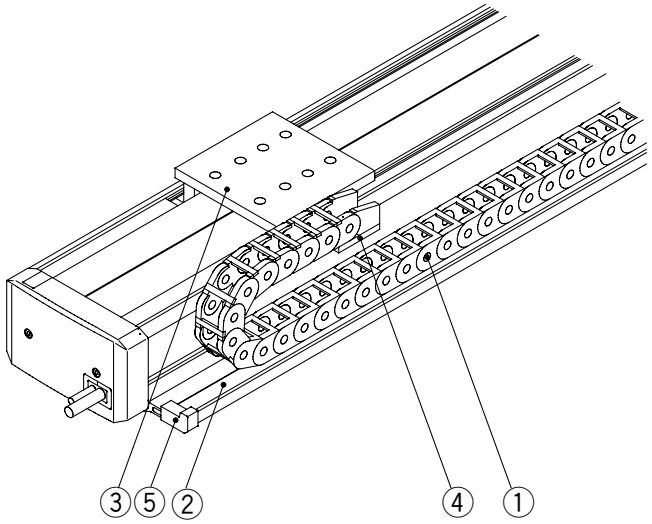
Series LJ1$^{H}_{S}$20



Series LJ1$^{H}_{S}$30



Construction/Parts list



Parts list

No.	Description	Material	Note
1	**TSUBAKICABLEVEYOR®**	–	–
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 TSUBAKICABLEVEYOR®

1. When handling, connecting and disconnecting the TSUBAKICABLEVEYOR®
   - Wear suitable clothing and appropriate protective gear (safety glasses, gloves, safety shoes, etc.).
   - Use suitable tools.
   - Provide support so that the TSUBAKICABLEVEYOR® and parts do not move freely.
2. Implement protective measures (safety cover, etc.).
3. Be sure to turn off the power and ensure that it cannot be turned on accidently before installation, removal or maintenance of the equipment.
4. In order to prevent secondary accidents, put the surrounding area in good order and operate under safe conditions.

Series LJ1
Reference Data

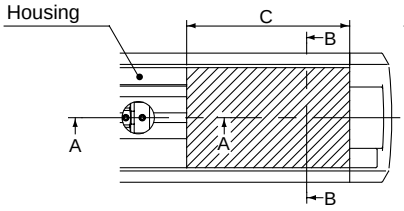
Motor Options 1

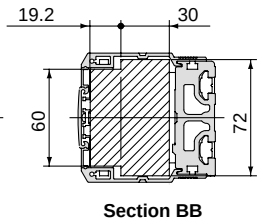
The following motors can be mounted when specified without motor.

	Motor output (W)	Power supply voltage (AC)	Motor model	Compatible driver model	Compatible model
Matsushita Electric Industrial Co., LTD	50	100/115	MSM5AZP1A	MSD5A1P1E	LJ1H10 (horizontal only)
			MSM5AZA1A	MSD5A1A1X	
		200/230	MSM5AZP1A	MSD5A3P1E	LJ1S10
			MSM5AZA1A	MSD5A3A1X	
	100	100/115	MSM011P1A	MSD011P1E	LJ1H10 (vertical only)
			MSM011A1A	MSD011A1X	LJ1H20
		200/230	MSM012P1A	MSD013P1E	LJ1S20
			MSM012A1A	MSD013A1X	
	200	100/115	MSM021P1A	MSD021P1E	LJ1H30
			MSM021A1A	MSD021A1X	
		200/230	MSM022P1A	MSD023P1E	LJ1S30
			MSM022A1A	MSD023A1X	
Mitsubishi Electric Corporation	50	100/115	HC-PQ053	MR-C10A1	LJ1H10 (horizontal only)
			HA-ME053	MR-J10MA1	
			HC-MF053	MR-J2-10A1	
		200/230	HC-PQ053	MR-C10A	LJ1S10
			HA-ME053	MR-J10MA	
			HC-MF053	MR-J2-10A	
	100	100/115	HC-PQ13	MR-C10A1	LJ1H10 (vertical only)
			HA-ME13	MR-J10MA1	
			HC-MF13	MR-J2-10A1	LJ1H20
		200/230	HC-PQ13	MR-C10A	
			HA-ME13	MR-J10MA	LJIS20
			HC-MF13	MR-J2-10A	
	200	100/115	HC-PQ23	MR-C20MA1	LJ1H30
			HA-ME23	MR-J20A1	
			HC-MF23	MR-J2-20A1	
		200/230	HC-PQ23	MR-C20A	LJ1S30
			HA-ME23	MR-J20MA	
			HC-MF23	MR-J2-20A	
Yaskawa Electric Corporation	50	100/115	SGME-A5BF12	SGDE-A5BP	LJ1H10 (horizontal only)
			SGM-A5B312	SGDA-A5BP	
		200/230	SGME-A5AF12	SGDE-A5AP	LJ1S10
			SGM-A5A312	SGDA-A5AP	
	100	100/115	SGME-01BF12	SGDE-01BP	LJ1H10 (vertical only)
			SGM-01B312	SGDA-01BP	LJ1H20
		200/230	SGME-01AF12	SGDE-01AP	LJ1S20
			SGM-01A312	SGDA-01AP	
	200	100/115	SGME-02BF12	SGDE-02BP	LJ1H30
			SGM-02B312	SGDA-02BP	
		200/230	SGME-02AF12	SGDE-02AP	LJ1S30
			SGM-02A312	SGDA-02AP	

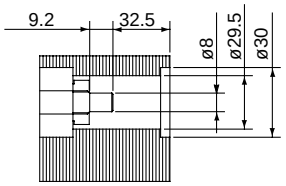
Nonstandard Motor Mounting Dimensions

Series LJ1 H/S 10

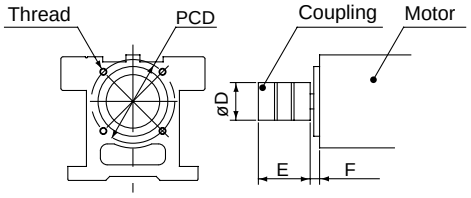




Section BB



Section AA (housing interior)



Coupling mounting dimensions Note)

Motor mounting dimensions

Manufacturer	Mitsubishi Yaskawa	Matsushita
Thread size	M4 x 0.7	M3 x 0.5
Effective thread length (mm)	8	6
Quantity	2	4
PCD	46	45

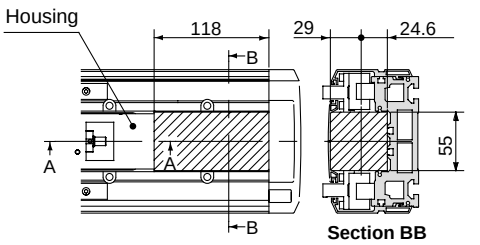
Motor mounting area

Note) When mounting the coupling to the motor, mount within the range of the dimensions shown to the left.

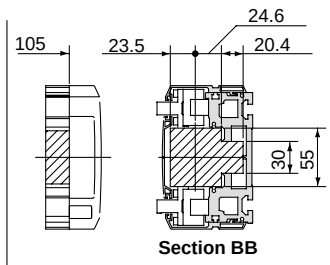
Dimensions

	C	D	E	F
With brake (mm)	101	26	32	8.5
Without brake (mm)	93	19	27.5	17

Series LJ1 H/S 20

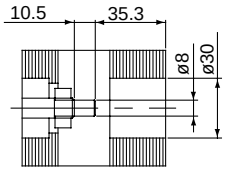


Section BB

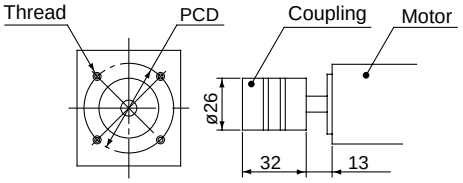


Section BB

Long stroke type Note 1)



Section AA (housing interior)



Coupling mounting dimensions Note 2)

Motor mounting dimensions

Manufacturer	Mitsubishi Yaskawa	Matsushita
Thread size	M4 x 0.7	M3 x 0.5
Effective thread length (mm)	8	6
Quantity	2	4
PCD	46	45

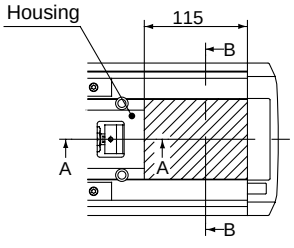
Motor mounting area

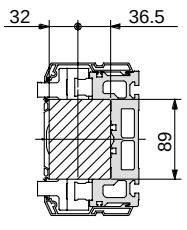
Note 1) When mounting the coupling to the motor, mount within the limits of the dimensions shown to the left.

LJ1H20□□□$^{N}_{P}$C	500 to 1000 stroke
LJ1H20□□□SC	700 to 1200 stroke
LJ1S20□□□SC	700 to 1200 stroke

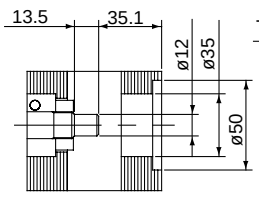
Note 2) When mounting the coupling to the motor, mount within the range of the dimensions shown to the left.

Series LJ1 H/S 30

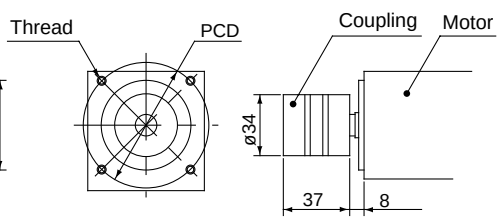




Section BB



Section AA (housing interior)



Coupling mounting dimensions Note)

Motor mounting dimensions

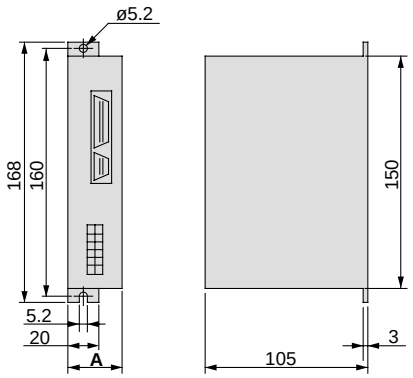
Manufacturer	Mitsubishi Yaskawa	Matsushita
Thread size	M5 x 0.8	M4 x 0.7
Effective thread length (mm)	6	6
Quantity	4	4
PCD	70	70

Motor mounting area

Note) When mounting the coupling to the motor, mount within the range of the dimensions shown to the left.

Nonstandard Motors/Matsushita Electric Industrial Co., LTD Drivers

Dimensions



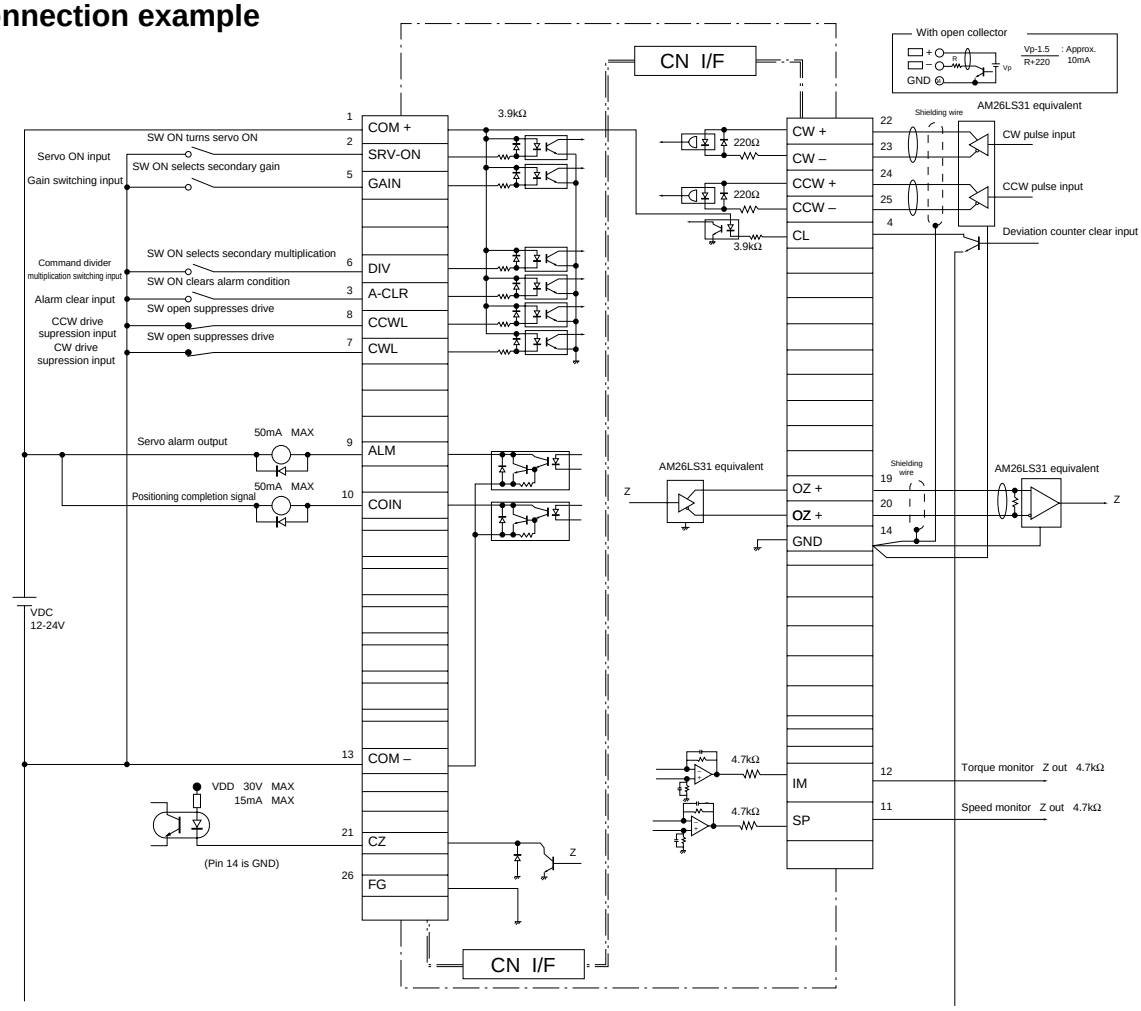
Dimension table

Driver model	A
MSD5A1P1E	35
MSD5A3P1E	
MSD013P1E	
MSD011P1E	45
MSD023P1E	
MSD021P1E	60

Summary of input/output signals (connector CN-1/F)

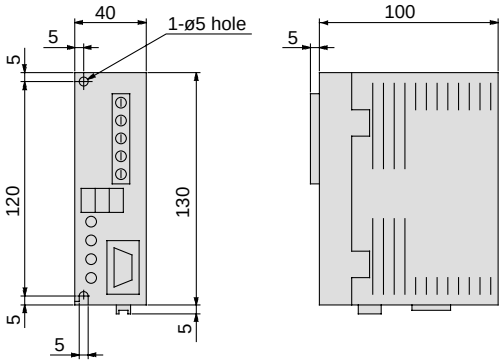
Pin No.	Symbol	Signal name	Pin No.	Symbol	Signal name
1	COM+	Control signal power supply	12	IM	Torque monitor signal
2	SRV-ON	Servo ON input	13	COM-	Control signal power supply
3	A-CLR	Alarm clear input	14	GND	
4	CL	Counter clear input	19	OZ+	Z phase output
5	GAIN	Gain switching input	20	OZ-	Z phase 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 completion signal output	25	CCW-	CCW pulse input
11	SP	Speed monitor signal	26	FG	Frame ground

Equipment connection example



Nonstandard Motors/Mitsubishi Electric Corporation Drivers

Dimensions (without RS-232C option unit)

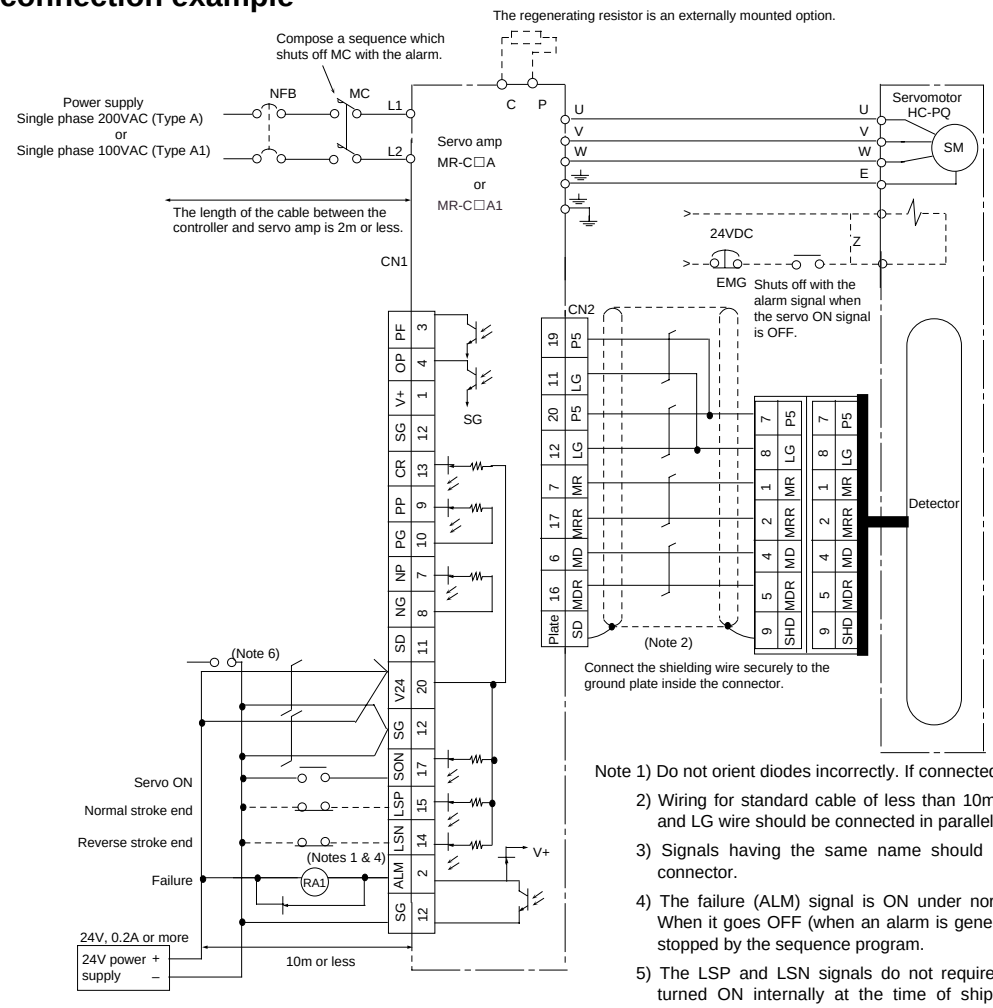


Driver model
MR-C10A
MR-C20A
MR-C10A1
MR-C20A1

Summary of input/output signals (connector CN-1/F)

Pin No.	Symbol	Signal name	Pin No.	Symbol	Signal name
1	V+	Digital output power supply	11	SD	Shield
2	ALM	Failure	12	SG	Interface power supply common
3	PF	Positioning completion	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 train	16	V5	Interface power supply
8	NG	Reverse pulse train	17	SON	Servo ON
9	PP	Normal pulse train	19	OPC	Open collector power supply
10	PG	Normal pulse train	20	V24	Interface power supply

Equipment connection example



Note 1) Do not orient diodes incorrectly. If connected backwards, the amp will fail.

2) Wiring for standard cable of less than 10m. When over 10m, four lines each of P5 and LG wire should be connected in parallel. (Maximum 50m)

3) Signals having the same name should be connected to the same pin on the connector.

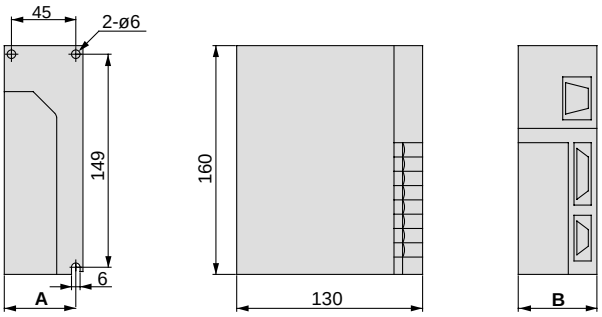
4) The failure (ALM) signal is ON under normal conditions when there is no alarm. When it goes OFF (when an alarm is generated), the controller output should be stopped by the sequence program.

5) The LSP and LSN signals do not require wiring, because they are automatically turned ON internally at the time of shipment. (They can also be validated by parameters.)

6) A sequence should be implemented to turn ON the RDY relay after confirming that there is no trouble with the servo (ALM signal is ON).

Nonstandard Motors / Yaskawa Electric Corporation Drivers

Dimensions



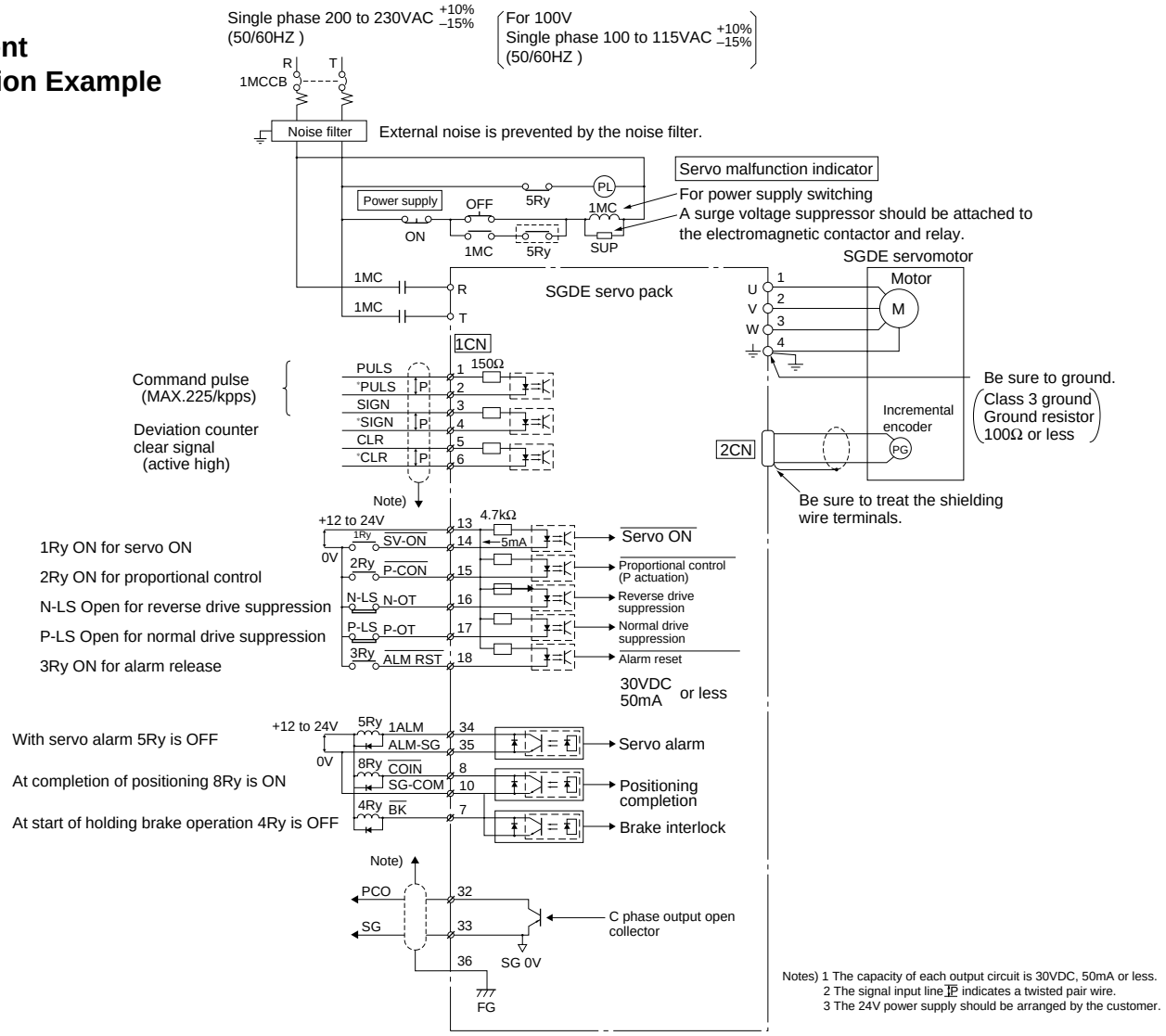
Dimensions

Driver model	A	B
SGDE-A5AP	50	55
SGDE-A5BP		
SGDE-01AP		
SGDE-01BP		
SGDE-02AP		
SGDE-02BP	65	75

Summary of input/output signals (connector CN-1/F)

Pin No.	Symbol	Signal name	Pin No.	Symbol	Signal name
1	PULS	Command pulse input	14	S-ON	Servo ON input
2	PULS	Command pulse input	15	P-CON	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 ouput C phase
7	BK	Brake interlock signal output	33	SG	0V
8	COIN	Positioning completion signal output	34	ALM	Servo alarm output
10	SGCOM	0V	35	SG	0V
13	P-IN	External power supply input	36	FG	Frame ground

Equipment Connection Example



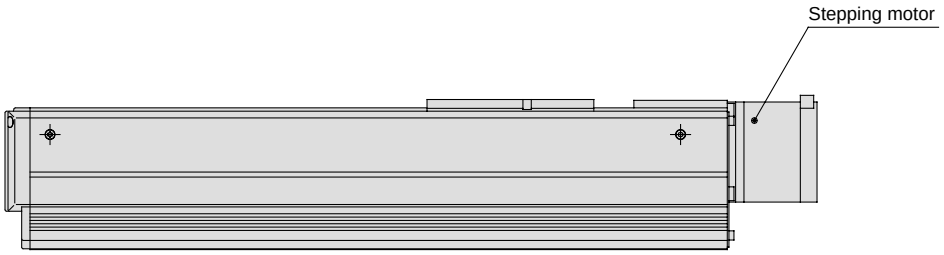
Notes) 1 The capacity of each output circuit is 30VDC, 50mA or less.
2 The signal input line ⌶ indicates a twisted pair wire.
3 The 24V power supply should be arranged by the customer.

Series LJ1
Order Made Specifications

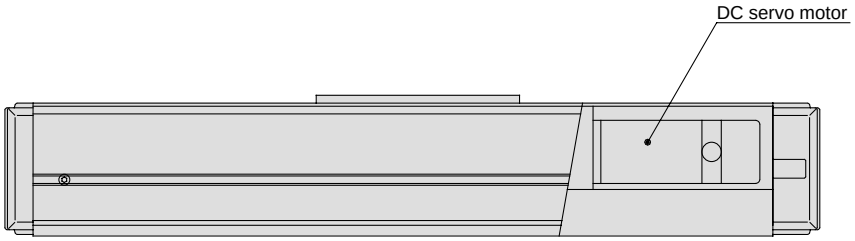
Stepping Motor/DC Servomotor Specifications

Compatibility for both stepping motor and DC servomotor.

Example) Combination of Series LJ1H10 and stepping motor



Example) Combination of Series LJ1H20 and DC servomotor



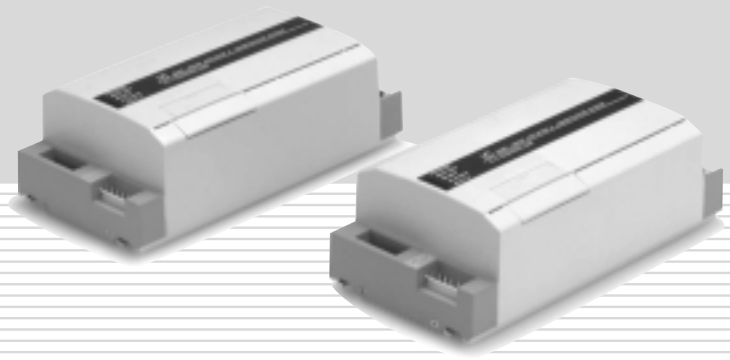
Note) When using a stepping motor or a DC servomotor, take note that there may be differences in the specifications. Please inquire regarding details.
Clean room, special thread and other order made specifications can also be arranged.

Dedicated Controller

Series LC1

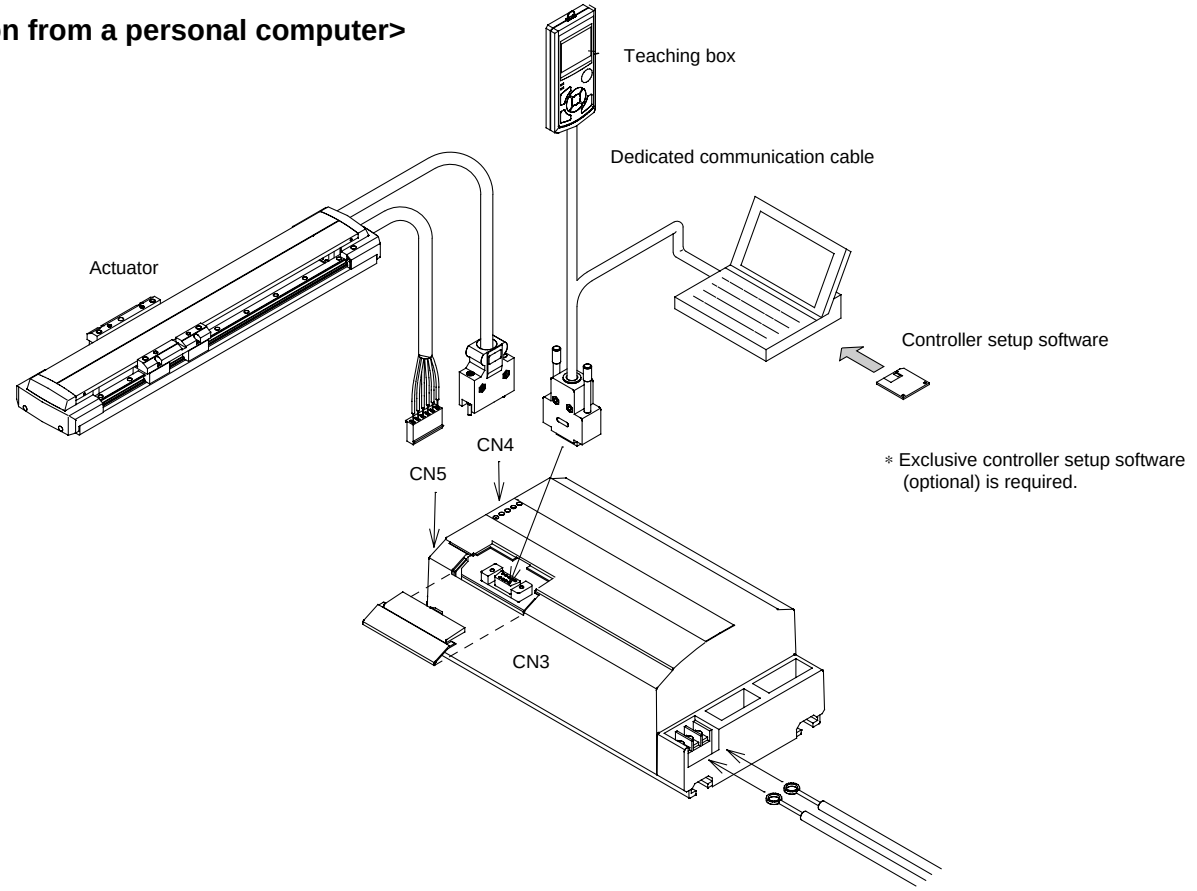
Uniaxial Type

with Built-in AC Servo-driver



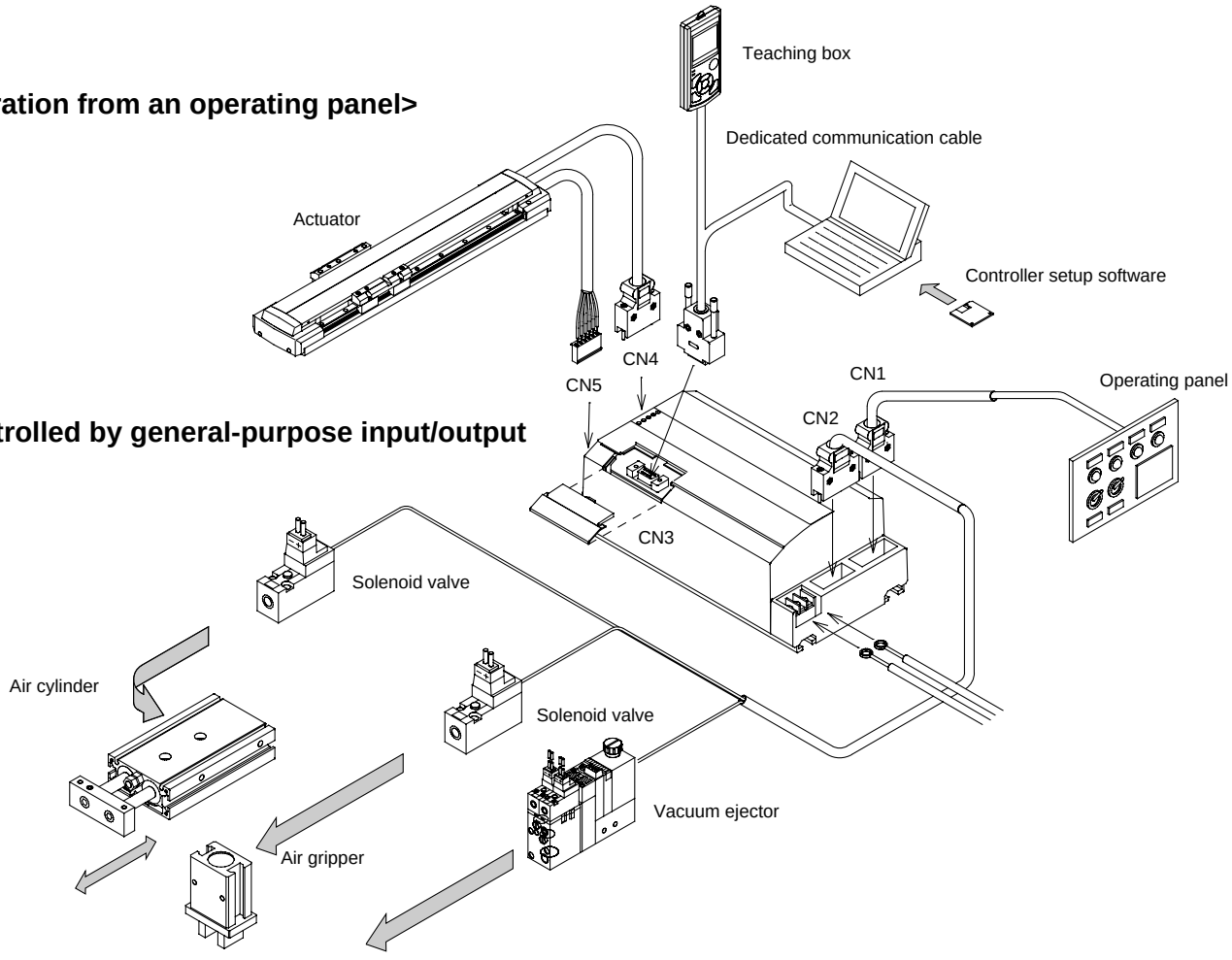
Typical Equipment Configurations

<Operation from a personal computer>



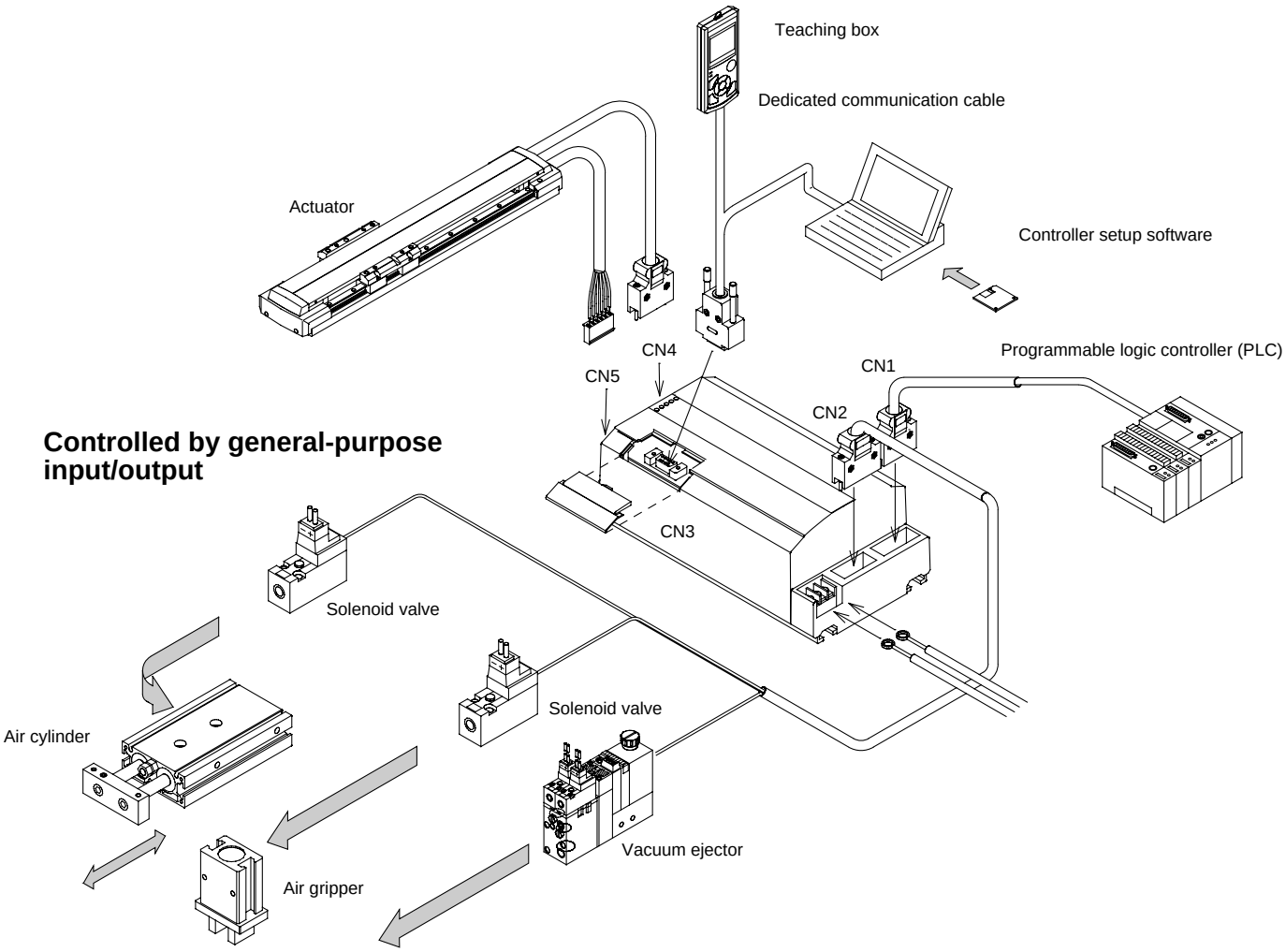
* Exclusive controller setup software (optional) is required.

<Operation from an operating panel>



Controlled by general-purpose input/output

<Operation from a programmable logic controller (PLC)>



Uniaxial Electric Actuator

Dedicated Controller

Series LC1

Uniaxial Type with Bult-in AC Servo-driver

How to Order

LC1 – 1 B 1H 1 – N 3

Number of axes

1	1 axis

Actuator Classification

B	Series LJ1 (incremental)

Adaptable 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□SE	
1M	50W	LJ1H101□SC	Slide screw High rigidity direct acting guide
2M	100W	LJ1H202□SC	
3M	200W	LJ1H303□SC	
1VH Note 1)	100W	LJ1H102□□H-□□□K	Ball screw High rigidity direct acting guide With brake
1VB Note 1)	100W	LJ1H102□□B-□□□K	
2VF Note 1)	100W	LJ1H202□□F-□□□K	
2VA Note 1)	100W	LJ1H202□□A-□□□K	
3VA Note 1)	200W	LJ1H303□□A-□□□K	

⚠Caution Note 1) LC1-1B1V□□ LC1-1B2V□□ LC1-1B3V□□ Contact SMC regarding a regenerative absorption unit which must be considered for these models depending on the operating conditions.

Power supply

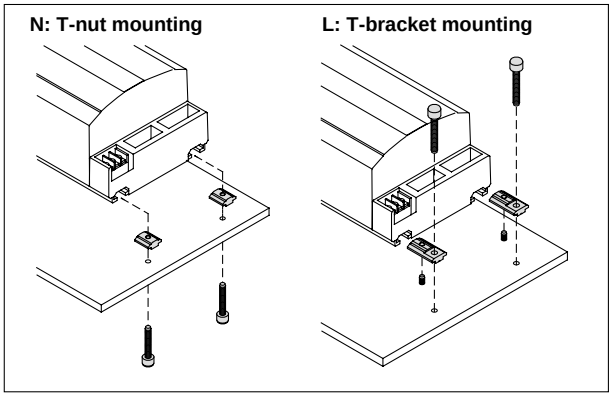
1	100/110VAC 50/60Hz
2 Note 2)	200/220VAC 50/60Hz

Note 2) The power supply for model LC1-1B3H2 is 200VAC, 50/60Hz.

Mounting bracket

3	M3
5	M5

Mounting Note 1)



Note 1) 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

Note) The following options are necessary for operating and setting this controller.

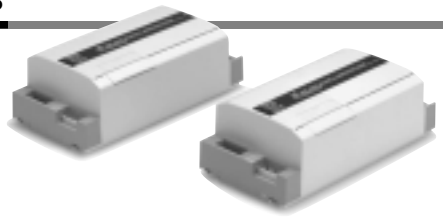
(LC1-1-S1 (PC-98 (MS-DOS) edition) / LC1-1-W1 (Windows 95 edition)) and LC1-1-R□□ (dedicated communication cable)

or

LC1-1-T1-□□ (Teaching box) are required.

For ordering information, refer to the option part numbers on page 62.

Performance/Specifications



General specifications

Item \ Model	LC1-1B□□1	LC1-1B□□2
Power supply	100V/110VAC±10% 50/60Hz	200V/220VAC±10% 50/60Hz (LC1-1B3H2 is 200VAC±10%)
Leakage current	5mA or less	
Dimensions	80 x 120 x 244mm	
Weight	2.2kg	
Housing type	Single unit installation type (resin housing)	

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□
Compatible actuator model	LJ1H101□NB LJ1H101□PB	LJ1H202□NA LJ1H202□PA	LJ1H303□ND LJ1H303□PD	LJ1H101□SC	LJ1H202□SC	LJ1H303□SE	LJ1H102□□ □-□□□K	LJ1H202□□ □-□□□K	LJ1H303□□ □-□□□K	LJ1S101□SC	LJ1S202□SC	LJ1H303□SC
Compatible guide	High rigidity direct acting guide						High rigidity direct acting guide with brake			Slider guide		
Motor capacity	50W	100W	200W	50W	100W	200W	100W	100W	200W	50W	100W	200W
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		5 to 40°C
Electric energy	180VA	300VA	640VA	180VA	300VA	640VA	300VA	300VA	640VA	100VA	300VA	640VA
Control system	AC software servo/PTP control											
Position detection system	Incremental encoder											
Home position return function	With magnet switch as adjacent switch, and encoder Z phase signal as home position signal. Home position return direction is selectable.											
Maximum positioning point setting	1008 points (when step designation is actuated)											
Addressing	Absolute and incremental used in combination											
Position designation range	0.00mm to 4000.00mm											
Speed designation range	1mm/s to 2500mm/s											
Acceleration/deceleration designation range	Trapezoidal acceleration/deceleration 1mm/s^2 to 9800mm/s^2											

Note) There are cases in which the position, speed and acceleration designations are not realized, depending upon the actuator that is connected and the operating conditions.

Programming

Item	Performance/Specifications
Means of programming	Exclusive controller setup software (LC1-1-S1/LC1-1-W1) and exclusive teaching box (LC1-1-T1-□□)
Communication method	Dedicated communication cable
Functions	Programming, Operation, Monitor, Test, Alarm reset
Number of programs	8 programs
Number of steps	1016 steps (127 steps x 8 programs)

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 point, photo-coupler insulation, 24VDC, 5mA
General-purpose output	6 point, open collector output, 35VDC, 80mA/1 point
Control commands	Ouput 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, Drive power supply cut-off, Communication error, Battery error, Abnormal parameter, Limit out

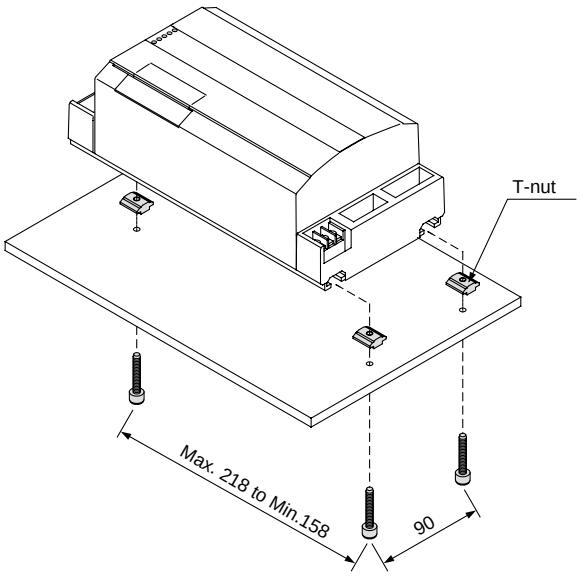
Mounting of Controller

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 63 for further details.

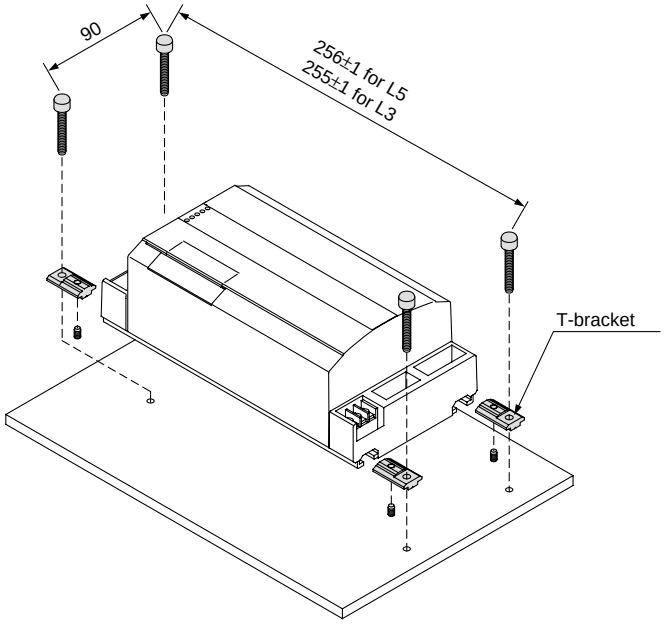
Note) This controller comes with either the T-nuts or T-brackets as accessories.

Controller model	Mounting screws	Mounting bracket Ass'y
LC1-1B□□-N3	M3 x 0.5	LC1-1-N3
LC1-1B□□-N5	M5 x 0.8	LC1-1-N5
LC1-1B□□-L3	M3	LC1-1-L3
LC1-1B□□-L5	M5	LC1-1-L5

Mounting with T-nuts

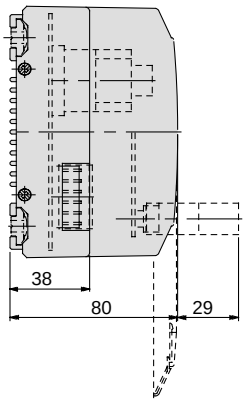


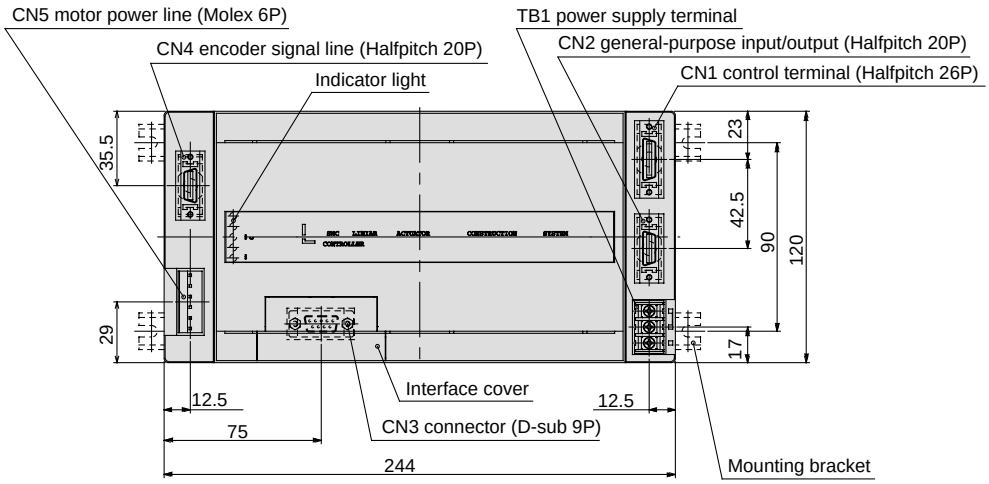
Mounting with T-bracket

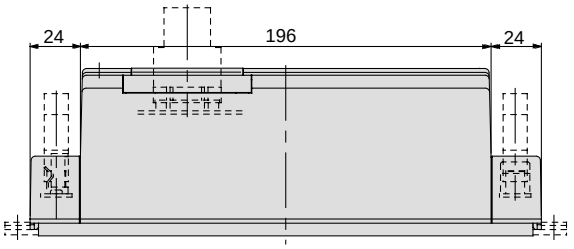


Dimensions

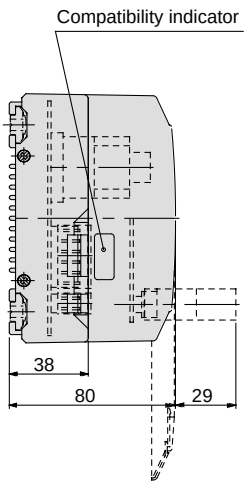
LC1-1B□H□
LC1-1B□S□
LC1-1B□M□

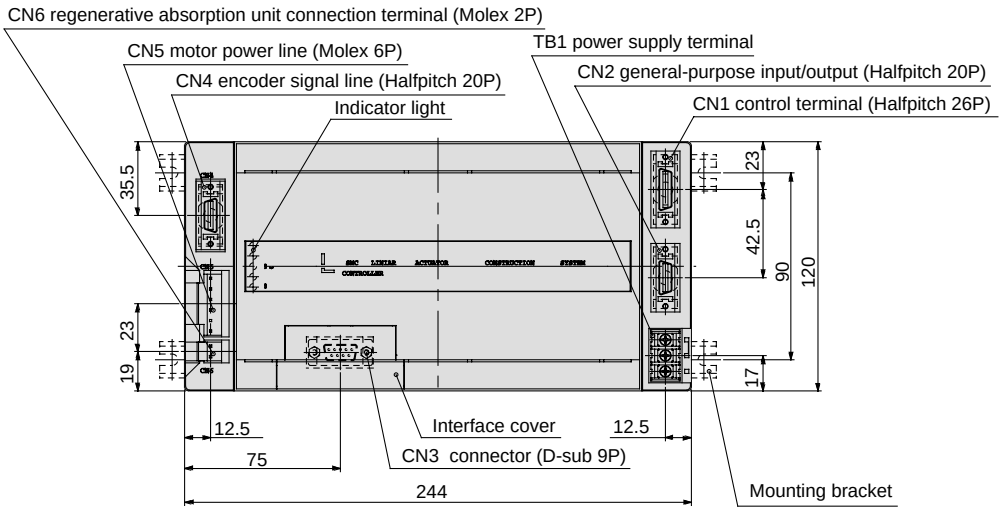


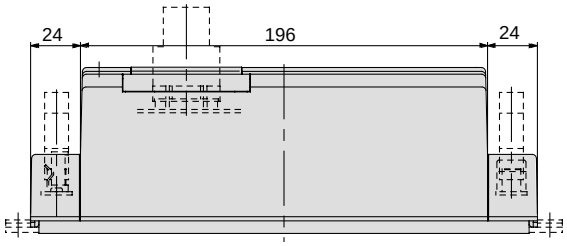




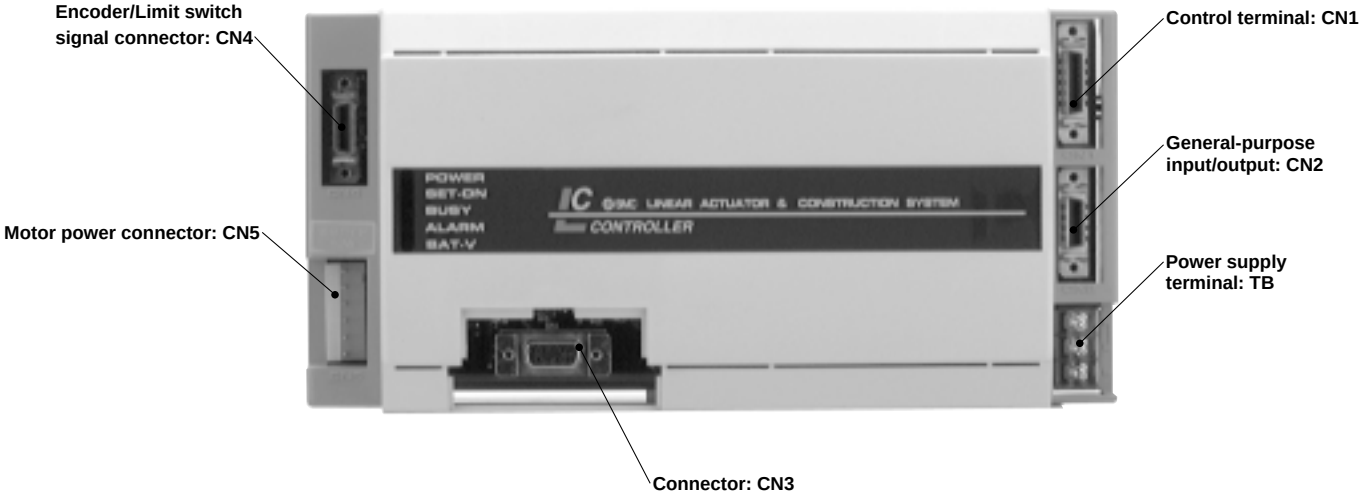
LC1-1B□V□□







Series LC1/Operating Part Names



Controller Command Setting List

Actuator Control Commands

Classification	Function	Mnemonic	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	Mnemonic	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 output 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	Mnemonic	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

Series LC1

Control Terminal: CN1

Terminal to perform actuator operation (connects PLC and operating panel)

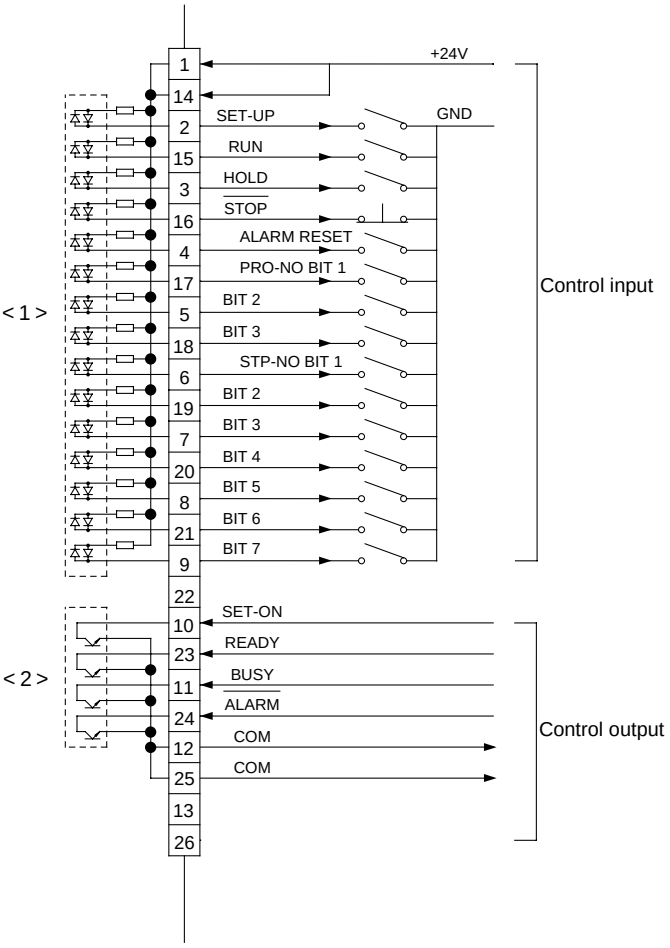
CN1. Control terminal list

Terminal	Pin No.	Description	Content
+24V	(1,14)	Common	The positive common of the input terminal.
SET-UP	(2)	Starting preparation	The terminal which performs setup operations (actuator starting preparation).
RUN	(15)	Starting	The terminal which performs program start.
Pro-No.bit1	(17)	Program designation	The terminal which designates the program to be executed. Can designate 8 types of programs with a total of 3 bits. (a combination of 1.2.4)
Pro-No.bit2	(5)		
Pro-No.bit3	(18)		
Stp-No.bit1	(6)	Step designation	The terminal which designates the step to be executed. Used when executing steps (position movement). (a combination of 1. 2. 4. 8. 16. 32. 64.)
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.
$\overline{\text{STOP}}$	(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.

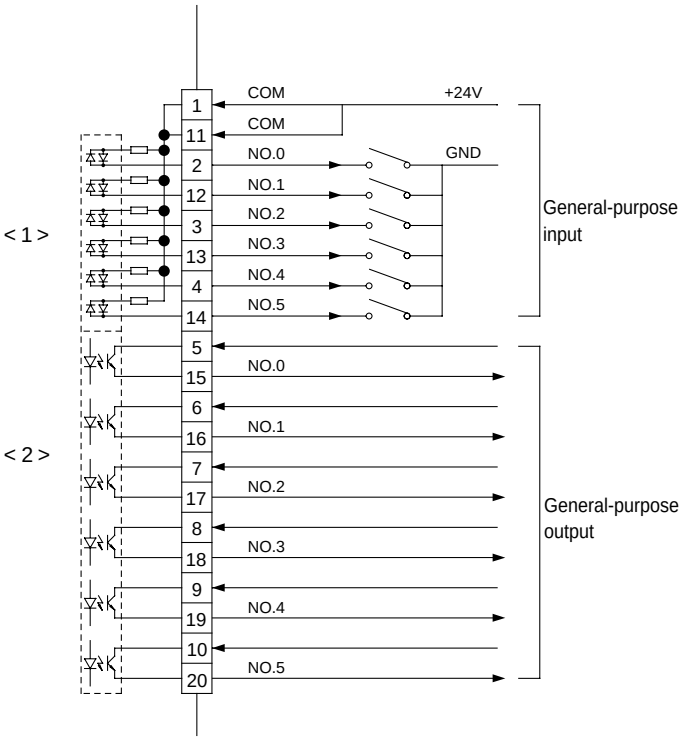
Output terminals

Terminal	Pin No.	Description	Content
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.
$\overline{\text{ALARM}}$	(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 Terminal: CN1

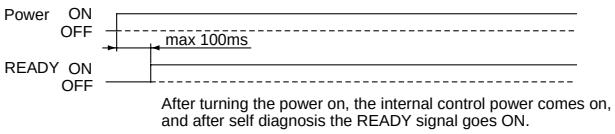


Control Terminal: CN2



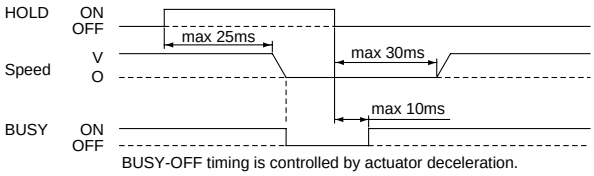
Series LC1

Timing for READY signal generation immediately after turning on power



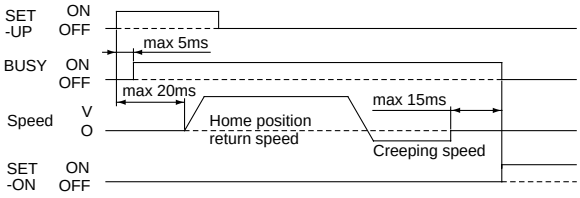
After turning the power on, the internal control power comes on, and after self diagnosis the READY signal goes ON.

Timing for temporary stop during operation

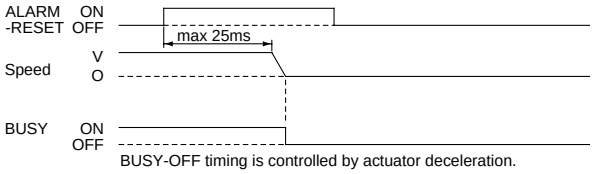


BUSY-OFF timing is controlled by actuator deceleration.

Timing for home position return

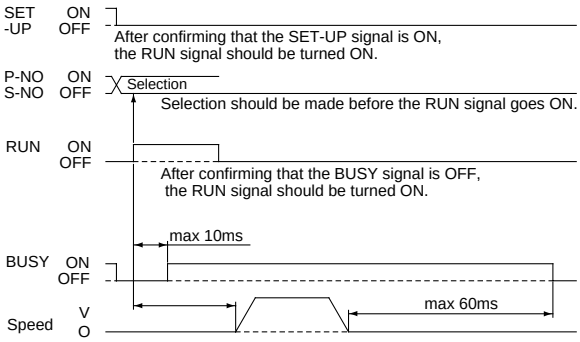


Timing for stop by ALARM-RESET during operation

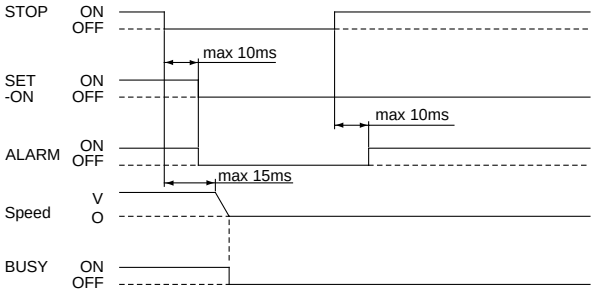


BUSY-OFF timing is controlled by actuator deceleration.

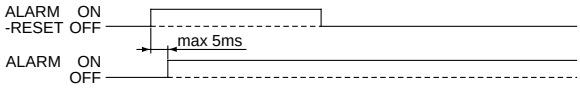
Timing for program/step execution



Timing for emergency stop during operation



Timing for alarm reset



Response time with respect to controller input signals

The following requisites 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.

Points (1) and (2) above apply to delay with respect to the SET-ON, ALARM-RESET and STOP signals.

Points (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.

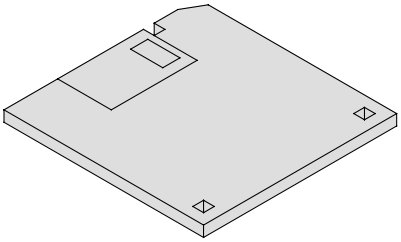
Controller Setup Software (1)

Software for operating the LC1 series controller is provided in the PC-98 (MS-DOS) edition.
Features:

- Reading and saving of parameters and programs.
- JOG teaching when creating programs.
- Easy confirmation of program operation with test mode.
- Diagnosis of I/O and observation of operating conditions with task monitor.
- Support of all controller functions.

PC-98 (MS-DOS) Edition

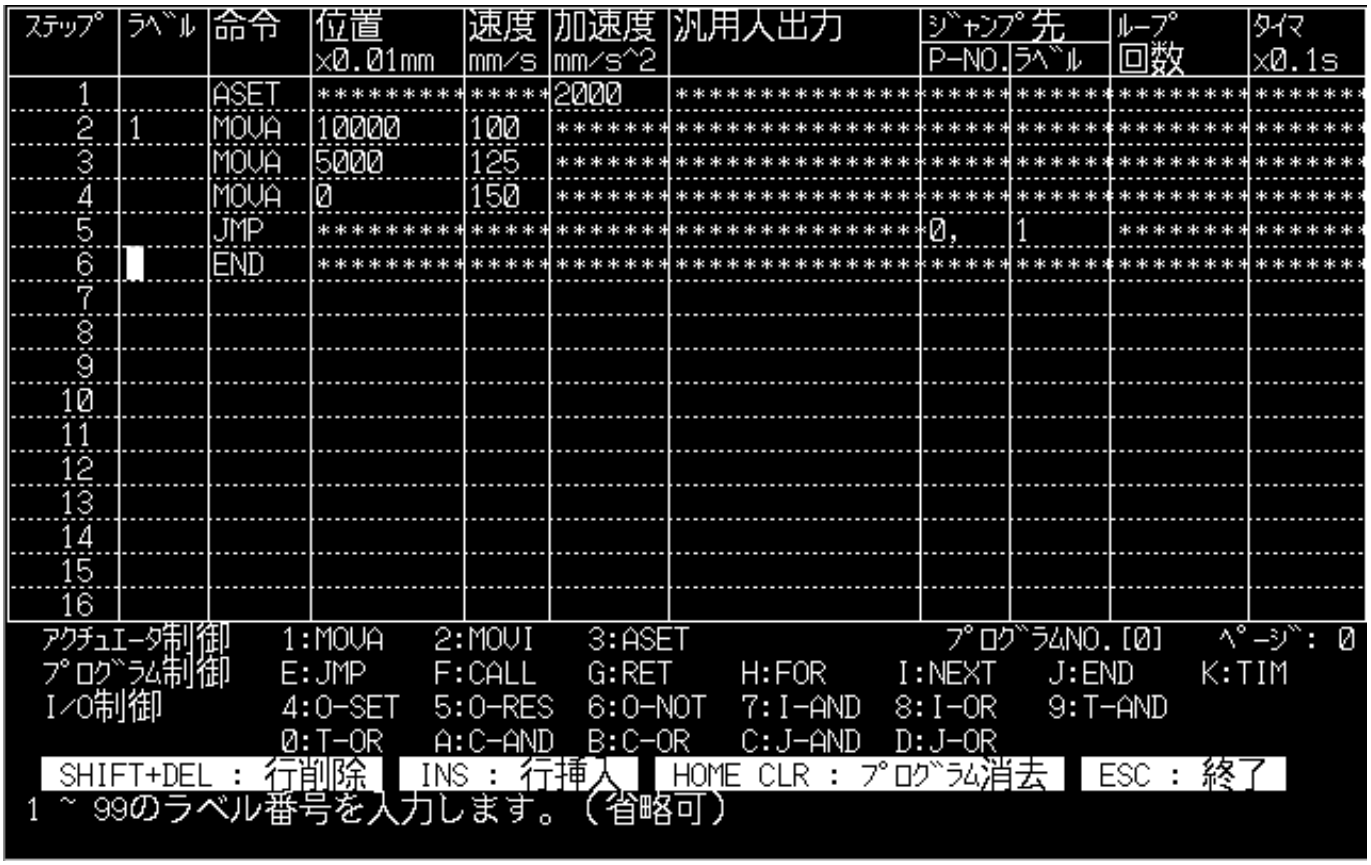
Model: LC1-1-S1



Operating environment

Computer	PC-9821, PC-98, PC-9801 with 80286 or higher CPU. PC-H98 series and compatible machines (except for high resolution mode)
OS	MS-DOS Ver 3.3 or higher
Memory	640KB or more
Disk drive	1MB capacity 3.5 inch floppy disk drive

∗ MS-DOS is a registered trade mark of the Microsoft Corporation.
∗ PC-98 Series is a registered trade mark of NEC Corporation.
∗ The dedicated communications cable (LC1-1-R□□) is required when using this software.
∗ Available only in Japanese edition.



Screen example

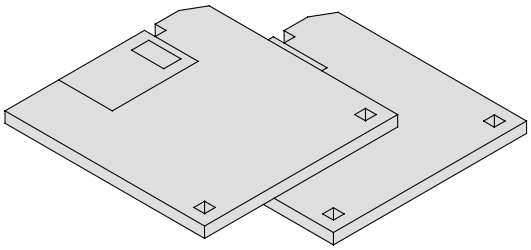
Controller Setup Software (2)

Windows edition controller setup software includes all of the functions of PC98 (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.

Windows Edition

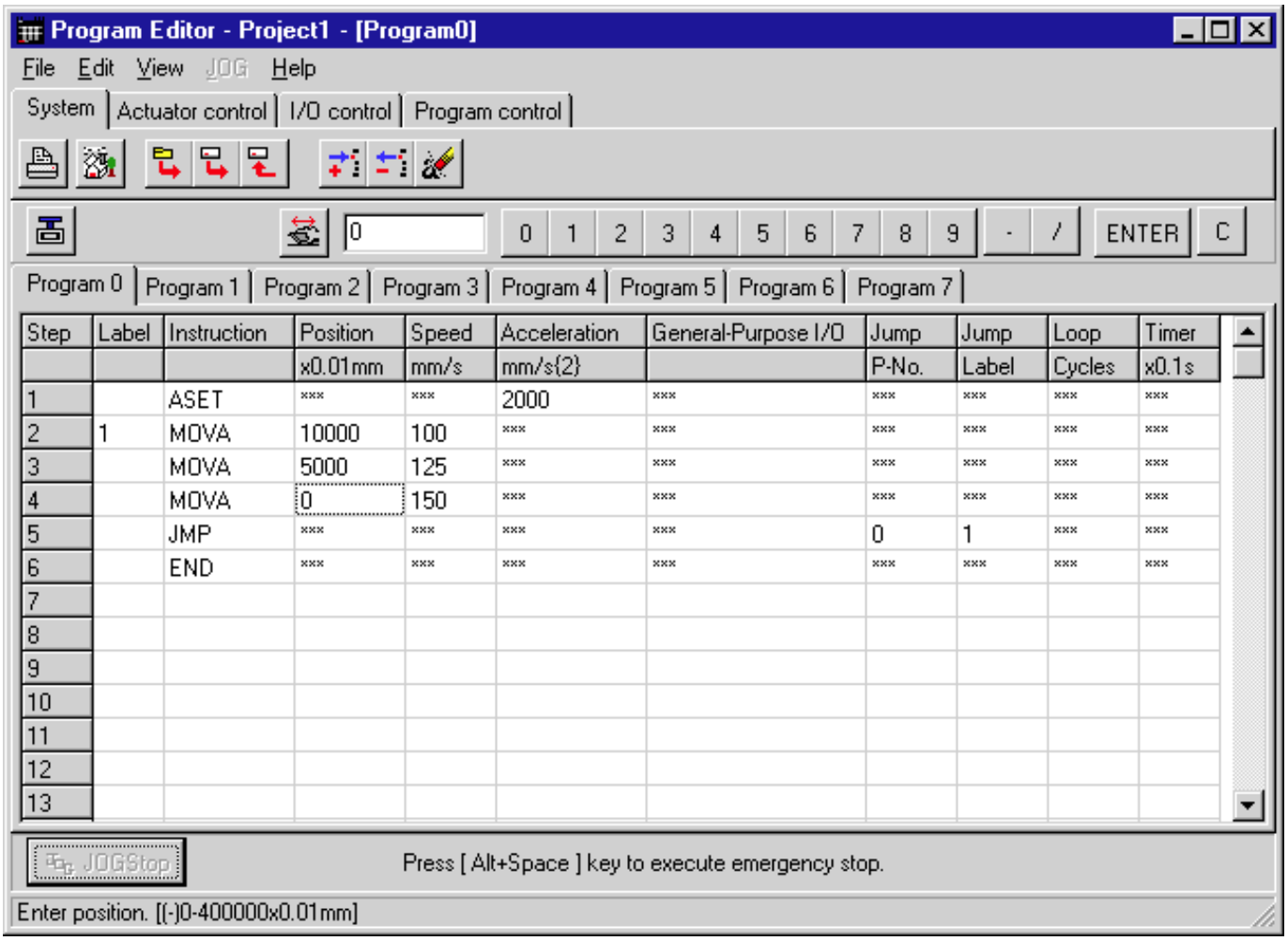
Model: LC1-1-W1



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
Disk drive	5MB of disk space required

∗ Windows is a registered trade mark of the Microsoft Corporation.
∗ Pentium is a domestic trade mark of the Intel Corporation.
∗ PC-98 Series is a registered trade mark of NEC Corporation.
- The dedicated communications cable (LC1-1-R∗∗∗) is required when using this software.
- This software cannot be used with Windows 3.1.



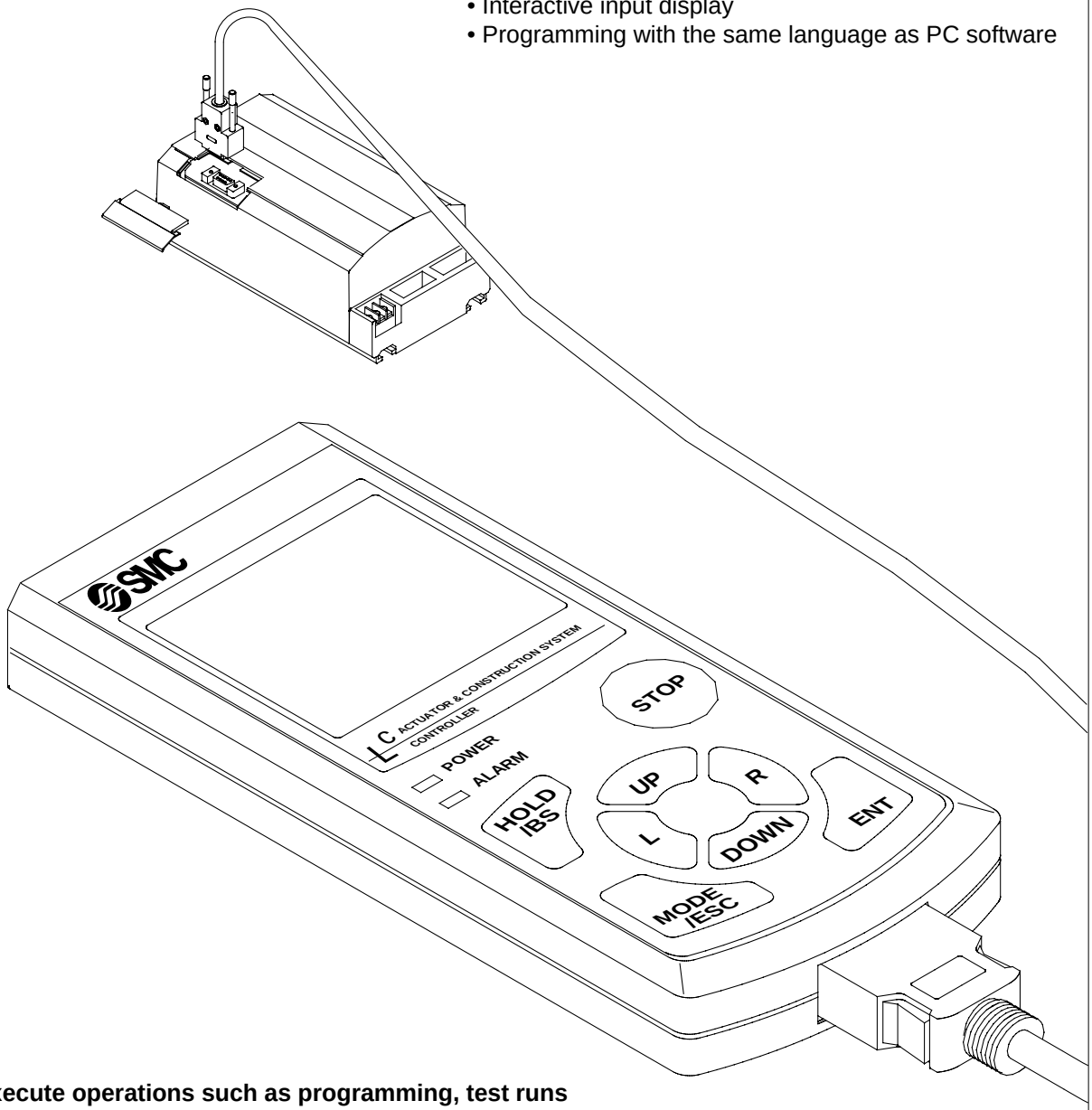
Screen example

Contact SMC for further details related to the controller setup software.

Series LC1
Dedicated Teaching Box
Series LC1-1-T1

The new teaching box makes the electric actuator and controller even easier to use.

- Interactive input display
- Programming with the same language as PC software



Able to execute operations such as programming, test runs 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)

Series LC1

How to Order

LC1 - 1 - T1 - 0 □

Cable length

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

Performance/Specifications

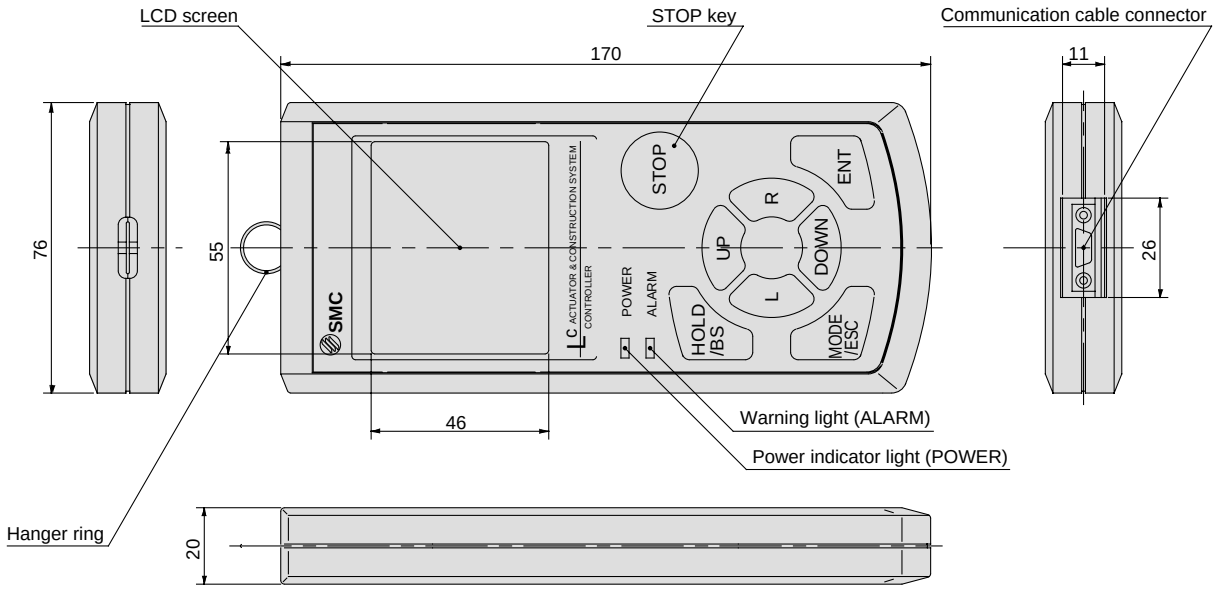
General Specifications

	LC1-1-T1-0□
Power supply	Supplied from **LC1**
Dimensions (mm)	169 x 76 x 20
Weight (g)	158
Case type	Resin case
Display unit	46 x 55 liquid crystal screen
Operating unit	Keyswitches, LED indicators
Cable length	2m, 3m, 4m, 5m

Basic Performance

	Performance
Compatible controller	**LC1** (all models)
Operating temperature range	5 to 50°C
Communication method	RS232C
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, Communication error, Battery error, Limit out, Abnormal driver parameter, RAM malfunction
Protection function indicator	Alarm code

Dimensions



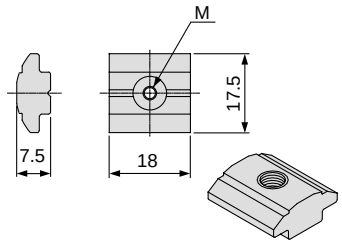
Series LC1/Options

T-nuts & T-brackets for mounting

Be certain to use when mounting the controller.

Note) The controller unit includes either T-nuts or T-brackets.

T-nuts (weight 10.0g)

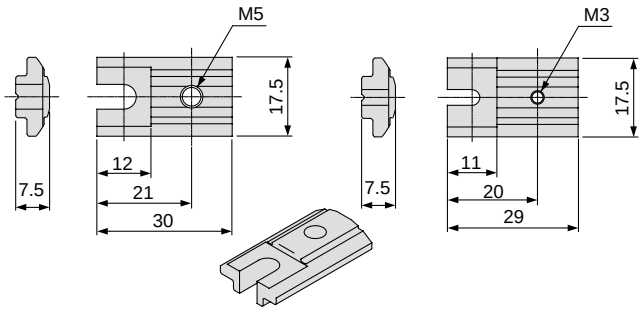


Model	M
LC1-1-N3	M3 x 0.5
LC1-1-N5	M5 x 0.8

T-brackets

Model **LC1-1-L5** (weight 16.0g)

Model **LC1-1-L3** (weight 15.5g)



Controller connector

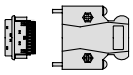
The connector used for CN1 (control terminal) and CN2 (general-purpose input/output).

These are each Halpitch types.

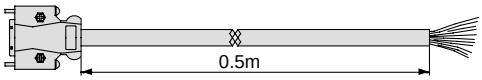
Note) The controller unit includes a controller connector for use with CN1 and CN2.

CN1: Control terminal

Model **LC1-1-1000**



User connector (CN1: Control terminal)
Model **LC1-1-1050**



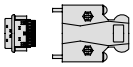
Cable is connected to LC1-1-1000.

10326-52A0-008
Halfpitch hood (26P)
Made by 3M

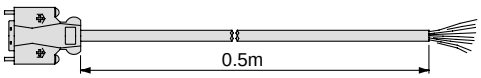
10126-3000VE
Halfpitch plug (26P)
Made by 3M

CN2: General-purpose input/output terminal

Model **LC1-1-2000**



User connector (CN2: General-purpose input/output terminal)
Model **LC1-1-2050**



Cable is connected to LC1-1-2000.

10320-52A0-008
Halfpitch hood (20P)
Made by 3M

10120-3000VE
Halfpitch plug (20P)
Made by 3M

Dedicated communication cable

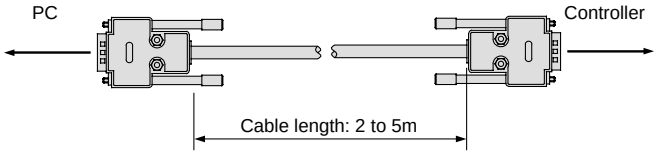
The connector which connects the controller and PC.

Note) Pay attention to the shape of the connector on the PC.

Dedicated communication cable (IBM PC/AT compatible computer)

Model **LC1-1-R□C**

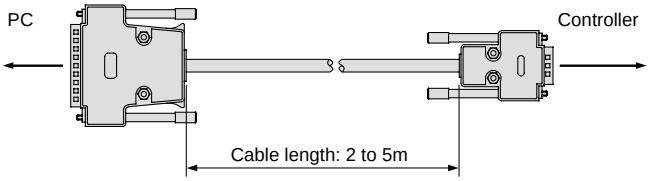
● **Cable length**
02 - 2m **04 -** 4m
03 - 3m **05 -** 5m



Dedicated communication cable (D-Sub) (for NEC PC-98 Series)

Model **LC1-1-R□D**

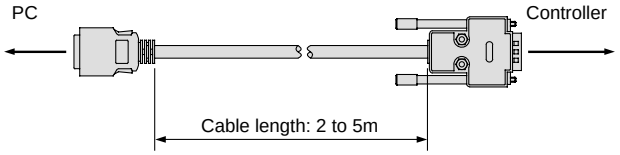
● **Cable length**
02 - 2m **04 -** 4m
03 - 3m **05 -** 5m



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.

Electric Actuator
Catalog Terminology

Description	Content
Address	The absolute location assigned by the absolute coordinate system
Addressing	The indication system for assigning the amount of movement to the actuator movement command Absolute (absolute coordinate system) or incremental (relative coordinate system/movement amount indication)
Absolute	The absolute coordinate system comprises coordinates which indicate absolute location based on the actuator's home position
Incremental	The incremental (relative) coordinate system comprises coordinates which indicate the amount of actuator table movement
AC servomotor	A servomotor which is turned by applying alternating current to a stationary coil Its special feature is the absence of brushes and commutators which were a disadvantage in DC servomotors
Encoder	The device which detects the rotation position of the motor Broadly divided into absolute and incremental, and classified as optical or magnetic
Slider guide	A simple guide attached to a surface using a special resin
Trapezoidal acceleration/deceleration	The acceleration/deceleration applied during a specific movement is constant, with a geometrical locus whereby the relationship of time and speed is expressed as a trapezoidal shape
Driver	A circuit arrangement for turning the motor A separate controller is required for operation
Mnemonic	Commands used to describe the controller program
Parameter	An established value which regulates the operating format stored in the controller, the specifications of the connected actuator, etc.
General-purpose input/output	The terminal which is controlled by the program
PTP control	Movement control from point to point
Pitching (moment)	The moment which acts longitudinally when an object is moving linearly
Ball screw	Changes rotating movement to linear movement when its screw axis and nut make rolling contact through balls Ground ball screw, rolled ball screw
Matrix editor	The function (editor) which creates the controller program by means of the controller setup software, tabular format (matrix)
Monitor function	The function within the controller setup software which can observe the state of the controller
Yawing (moment)	The moment which acts laterally when an object is moving linearly
Limit switch	The switch which senses movement beyond the normal stroke of the actuator
Rolling (moment)	The moment which acts in the direction of rotation when an object is moving linearly
Deenergized operation type electromagnetic brake	An electromagnetic brake which operates when current is not applied.

Series LJ1
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: Robot safety axiom

⚠ 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.

Series LJ1
Actuator Precautions 1

Be sure to read before handling.

Precautions on 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 designed to avoid such dangers.

2. A protective cover is recommended to minimize the risk of human injury.

If a stationary object and moving parts of a cylinder are in close proximity, human injury may occur. 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, safety equipment should be installed 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.

Measures should be taken to protect against human injury and machinery 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, 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.

Precautions on 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. 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 shaft center, and therefore, a method of connection which can absorb the displacement should be considered.

3. Since the bearing parts and parts surrounding the feed screw are adjusted at the time of shipment, unnecessary movement of the adjusted parts should be avoided.

4. This actuator can be used without lubrication. In the event that lubrication is applied, a lithium family grease (JIS No. 2) should be used.

5. If the actuator will be used in an atmosphere where it will be exposed to cutting chips, dust, cutting oil (water, liquids), etc., a cover or other protection should be provided.

6. Operate with cables secured.

Avoid bending cables at sharp angles where they enter the actuator, and also be sure that cables do not move easily.

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. Confirmation of actuator operation should first be performed at low speed. Operation at normal speeds should be performed only after confirming that no problems exist.

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, rattling in the guide unit, an increase in sliding resistance or other problems.

4. When attaching a work load, do not apply strong impact shock or a large moment, etc.

If an outside force exceeding the allowable moment is applied, this may cause rattling 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 do not get caught by actuator movement.

Series LJ1
Actuator Precautions 2

Be sure to read before handling.

Mounting

⚠ Caution

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 disposition of wiring, etc. at the time of mounting. If wiring is forced into unreasonable positions, 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 cutting chips may enter.
2. Locations where the ambient temperature is outside the range of 5 to 40°C.
3. Locations where ambient humidity is outside 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 actuator.

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. Ground wires should have a cross sectional area of 2mm² or more. Grounding should be as close as possible to the actuator, 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 variations greatly exceed the prescribed voltage, a constant voltage transformer should be used.

2. A power supply should be used that has low noise between lines and between power and ground. In cases where noise is high, an isolation transformer should be used.

3. Wiring should be performed by separating the controller power supply from the general-purpose input/output and control terminal interface power supply (24VDC).

4. In order to minimize voltage drop in the 100V/200VAC wiring and the 24VDC wiring, use large diameter wire of ø1.0 or greater, and connect at the minimum possible distance.

5. Avoid bundling the 100V/200VAC lines together with, or routing them near, the general-purpose input/output lines, control terminal output lines and encoder signal lines. They should be separated by at least 100mm if possible.

6. Connect lightning protection varistors (surge absorbers) in order to protect against surge from lightning. When doing this, separate the lightning surge absorber ground from the controller ground.

Operating Environment

⚠ Caution

1. Do not use in environments where there is a danger of corrosion.

2. In dirty areas, such as dusty locations or where water, oil, etc. splash on the equipment, take suitable measures to protect the rod.

3. Do not use in an environment where there is a strong magnetic field.

Maintenance

⚠ Warning

1. Maintenance should be done according to the procedures indicated in the instruction manual.

If handled improperly, malfunction and damage of machinery or equipment may occur.

2. Demounting of equipment.

When equipment is to be demounted, 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.

Series LJ1
Auto Switch Common Precautions 1

Be sure to read before handling.
Refer to the main catalog sections for detailed precautions on each series.

Design & 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. Wiring should be kept 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 & Adjustment

⚠ Warning

1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (1000m/s² or more) 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 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 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 will be unstable.

Series LJ1
Auto Switch Common Precautions 2

Be sure to read before handling.
Refer to the main catalog sections for detailed precautions on each series.

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, including 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 prevention 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.

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.

Maintenance

⚠ Warning

1. Perform the following maintenance periodically in order to prevent possible danger due to unexpected auto switch malfunction.

1) Secure and 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 lead wires.

To prevent faulty insulation, replace switches or repair lead wires, etc., if damage is discovered.

Operating Environment

⚠ Warning

1. Never use in an atmosphere of explosive gases.

The structure 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 cylinders 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 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 temperature changes, as they may be adversely affected.

6. 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 cylinders with solid state auto switches, this may cause deterioration or damage to the switch. Avoid sources of surge generation and disorganized lines.

Operating Environment

⚠ Warning

7. Avoid accumulation of iron powder or close contact with magnetic substances.

When a large amount of ferrous powder 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 cylinder, it may cause the auto switch to malfunction due to a loss of the magnetic force inside the cylinder.

Other

⚠ Warning

1. Consult SMC concerning water resistance, elasticity of lead wires, and usage at welding sites, etc.

Series LJ1
Specific Product Precautions

Be sure to read before handling.

Mounting

⚠ Caution

1. **Since the slide bearing type is supported by a resin slide bearing, take particular care to avoid subjecting it to strong impacts or large moment, etc. when mounting the unit.**
2. **Mount the slide screw type in a horizontal position.**

Brakes

⚠ Caution

1. **Since sparks may be generated due to slippage when starting and braking, do not operate this product in environments with oils or combustible gases, etc. where there is a danger of ignition or explosion.**
2. **This product cannot be used for ordinary braking.**
3. **This brake is a deenergized operation type designed exclusively for holding and emergency stopping. If used repeatedly for braking under ordinary circumstances, its original function will be degraded within a short time and eventually the brake will no longer disengage. Continued use under these conditions will cause failure such as burning of the brake, loss of braking force or runaway of the electric actuator.**
4. **Do not allow hands or fingers, etc. to be caught in the mechanism.**

   Even when the actuator is stopped, the armature moves in an axial direction when the power is turned ON and OFF. If this sliding part is touched with the fingers, they may be caught and injured. Be sure the cover is in place before turing the power ON or OFF.

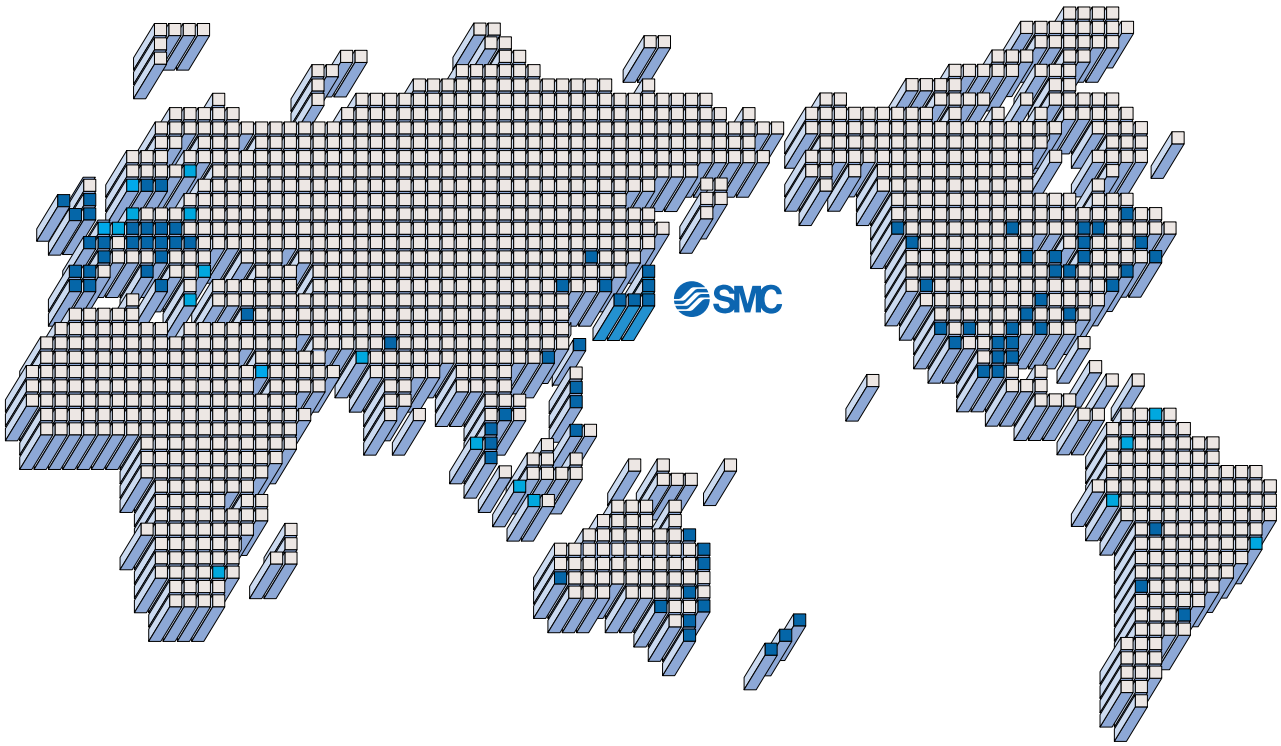
Brakes

⚠ Caution

5. **Do not touch the brake with bare hands during operation.**

   The surface temperature of the brake unit may rise as high as 90°C to 100°C, due to heat from friction and heat generated by the internal coil. Since burns will result if touched, never allow hands or fingers, etc. to touch the brake unit during operation. The surface may even become hot due to the flow of electric current alone, and therefore, the brake unit should not be touched at any time.

SMC'S GLOBAL MANUFACTURING, DISTRIBUTION AND SERVICE NETWORK



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1st printing March, 1998 D-SMC.L.A. P-72 (M)

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

Printed in Japan.

Низкопрофильный линейный электрический привод с направляющими повышенной жесткости

LG1

- Низкий профиль
- Высокая точность перемещения присоединительной площадки
- Три типа ходовых винтов
- Исполнения без соединительной муфты между валом двигателя и ходовым винтом (только со стандартным двигателем) и с соединительной муфтой, допускающей установку нестандартных двигателей (по согласованию с SMC)
- Два способа крепления корпуса - снизу и сверху (сквозь корпус)

Технические характеристики

Длина хода (мм)			100	200	300	400	500	600	700	800	900	1000	1200
Диапазон рабочих температур (°C)			5~60										
Максимальная сила нагружения (Н)	Шариковый винт	10 мм	300				-						
		20 мм	-				300						-
	Винт скольжения	20 мм	150										
Максимальная скорость (мм/с)	Шариковый винт	10 мм	500				-						
		20 мм	-				1000		930	740	600	500	-
	Винт скольжения	20 мм	500										
Точность позиционирования (мм)	Шариковый винт		±0.02~ 0.05										
	Винт скольжения		±0.1										
Вес (кг)	Шариковый винт	Алюм. корпус	5.3	6.1	6.9	7.7	8.5	9.3	10.1	10.9	11.7	12.5	-
		Стальной корпус	8.3	9.6	10.8	12	13.3	14.5	15.8	17.1	18.3	19.6	-
	Винт скольжения	Алюм. корпус	5.8	6.7	7.6	8.5	9.4	10.2	11.1	12.0	12.9	13.8	15.9
		Стальной корпус	9.1	10.5	11.9	13.2	14.6	16.0	17.4	18.8	20.1	21.6	24.9
Мощность (Вт)			100										

Номер для заказа

Материал корпуса

	Алюминиевый сплав
T	Нерж. сталь

Исполнение

20	Без муфты
21	С муфтой

Длина хода, мм

100	100	700	700
200	200	800	800
300	300	900	900
400	400	1000	1000
500	500	1200	1200
600	600		

LG1 [ ] H [20] [2] [1] [P] [A] - [100] - F [2]

Напряжение питания, В АС

1	110
2	220

Шаг винта подачи

A	10
C	20

Тип винта подачи

P	Основной шариковый
N	Шариковый, повышенной точности
S	Скольжения

Длина кабеля, мм

2	200
3	300
4	400
5	500

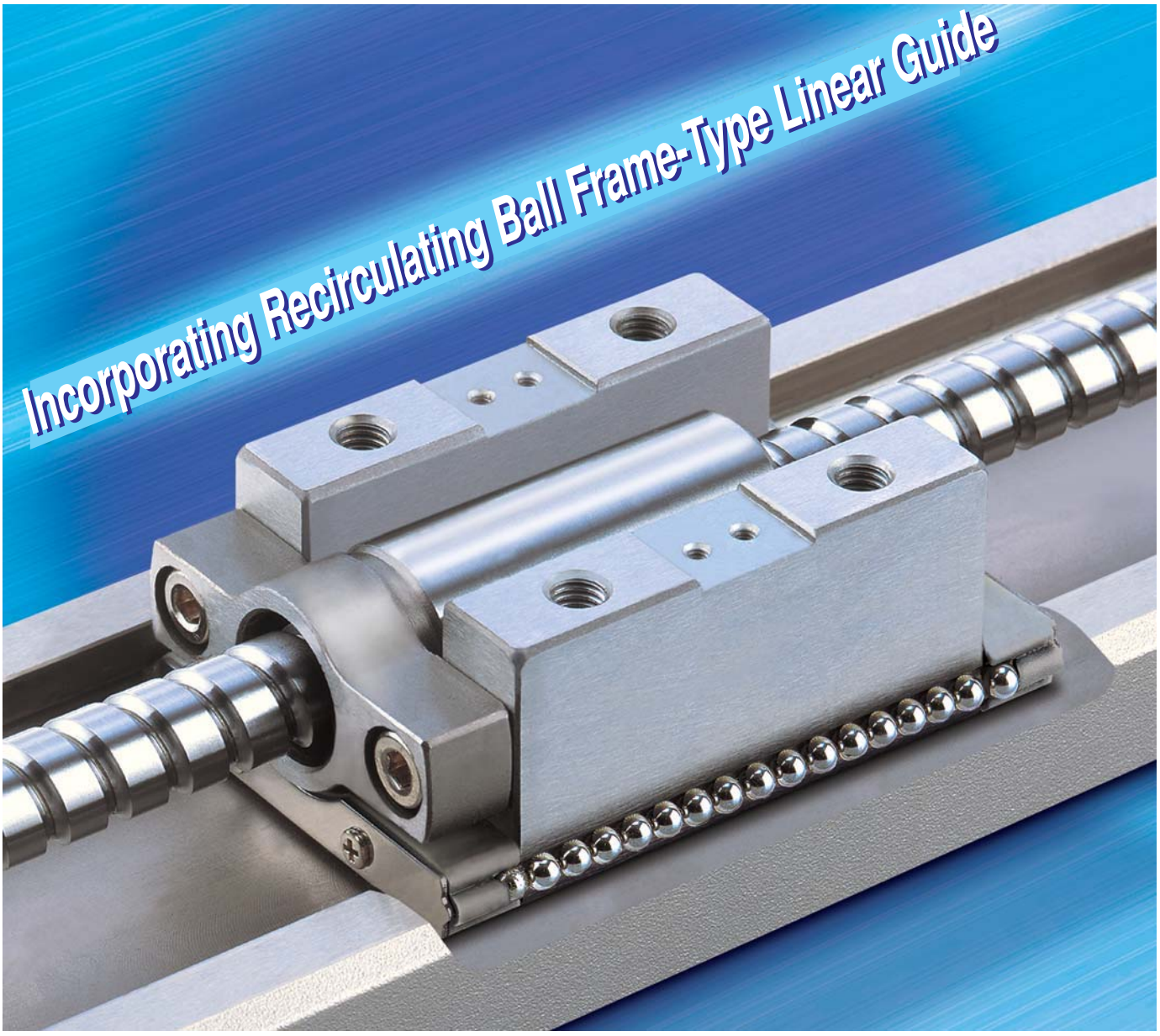
Комбинации длины хода и шага винта подачи

Модель	Длина хода										
	100	200	300	400	500	600	700	800	900	1000	1200
LG1H□□□□PA	+	+	+	+	-	-	-	-	-	-	-
LG1H□□□□NA	+	+	+	+	-	-	-	-	-	-	-
LG1H□□□□PC	-	-	-	-	+	+	+	+	+	+	-
LG1H□□□□NC	-	-	-	-	+	+	+	+	+	+	-
LG1H□□□□SC	+	+	+	+	+	+	+	+	+	+	+

CAT.ES100-44 A

SMC

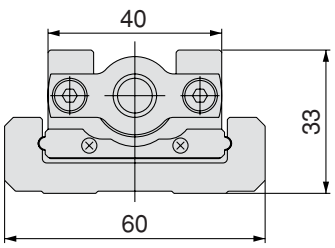
Electric Actuator with Integrated Guide

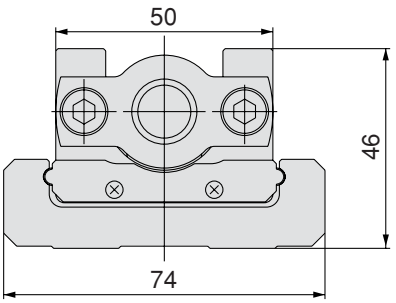


Series LTF

Light-weight, compact electric Frame-type linear guide has one-piece

Space saving, light weight

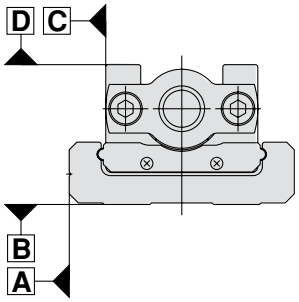




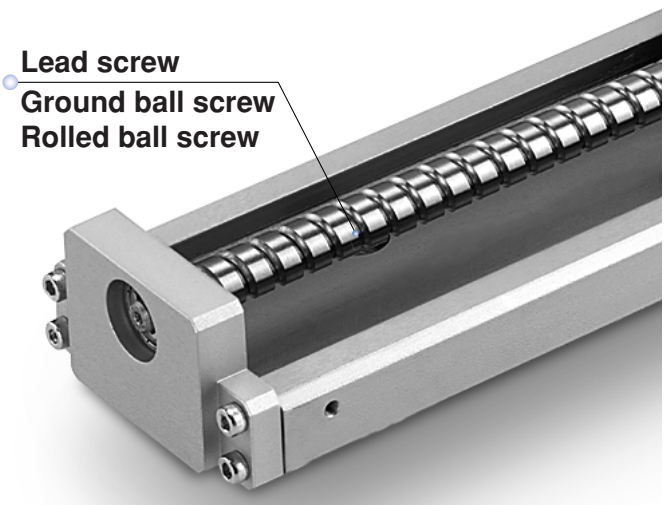
	LTF6 work piece mounting section dimensions	LTF8 work piece mounting section dimensions
Overall length*	357.5mm	412mm
Weight*	2.2kg	4.6kg
Maximum stroke	600mm	1000mm

* 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

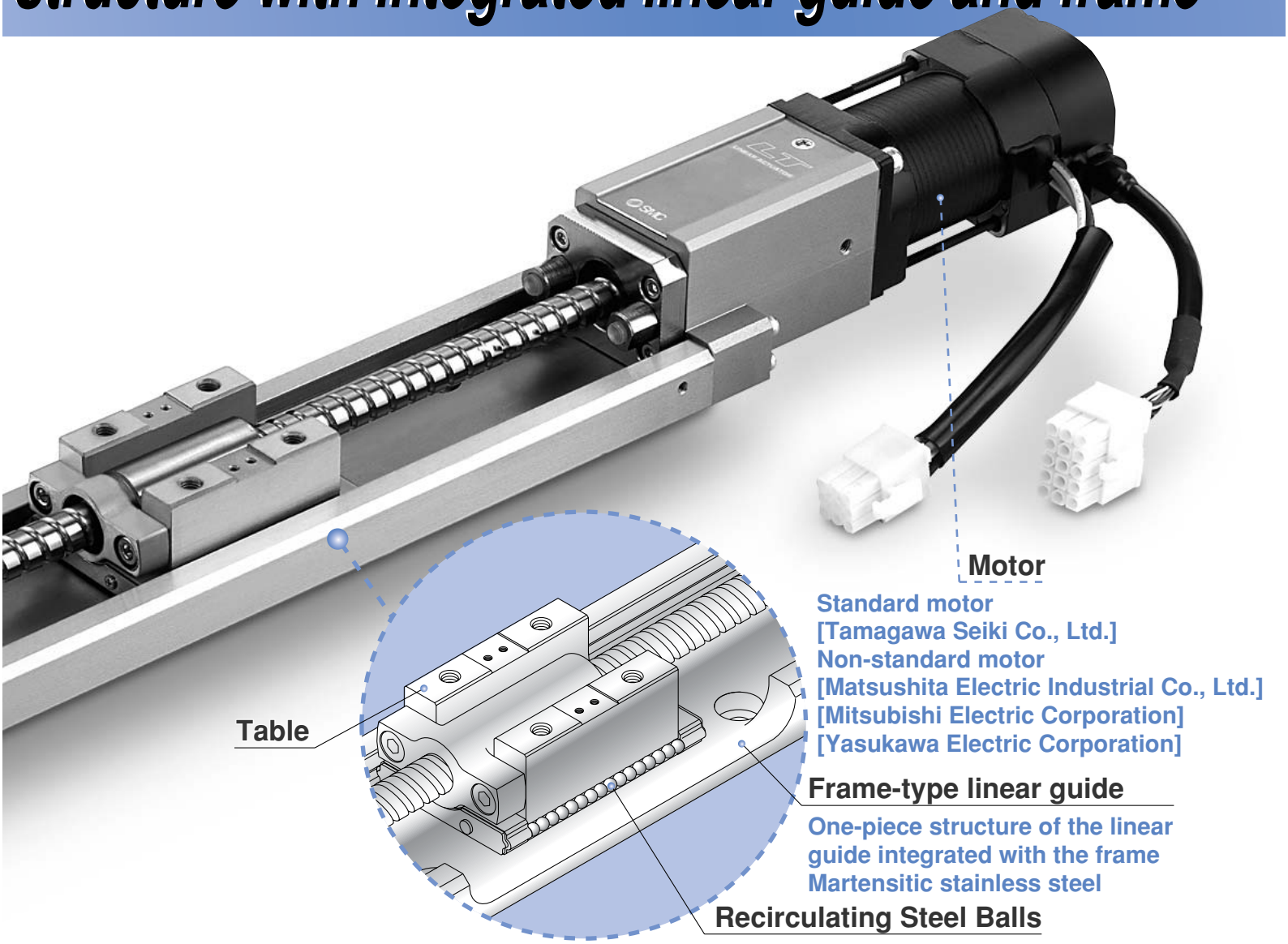


Simplified Selection Flow Chart

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 lead 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

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

Lead screw type

P	Ground ball screw
N	Rolled ball screw

Brake

Nil	None
K	With brake

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

Cable length

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

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 specification

Nil	Standard motor
X10	Non-standard motor

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

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/6mm lead

How to Order

LTF6E 1 PF — Stroke — R 2

Power supply voltage

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

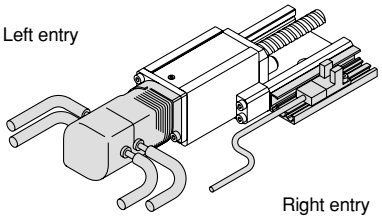
Motor/switch entry direction

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

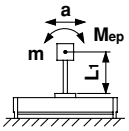
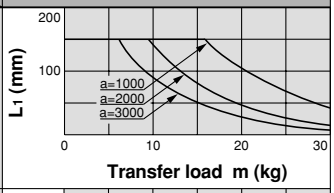
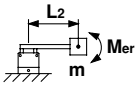
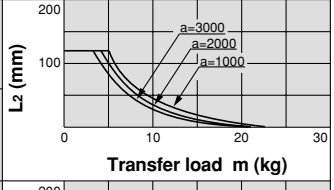
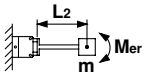
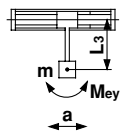
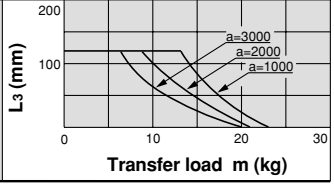


Specifications

	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 ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

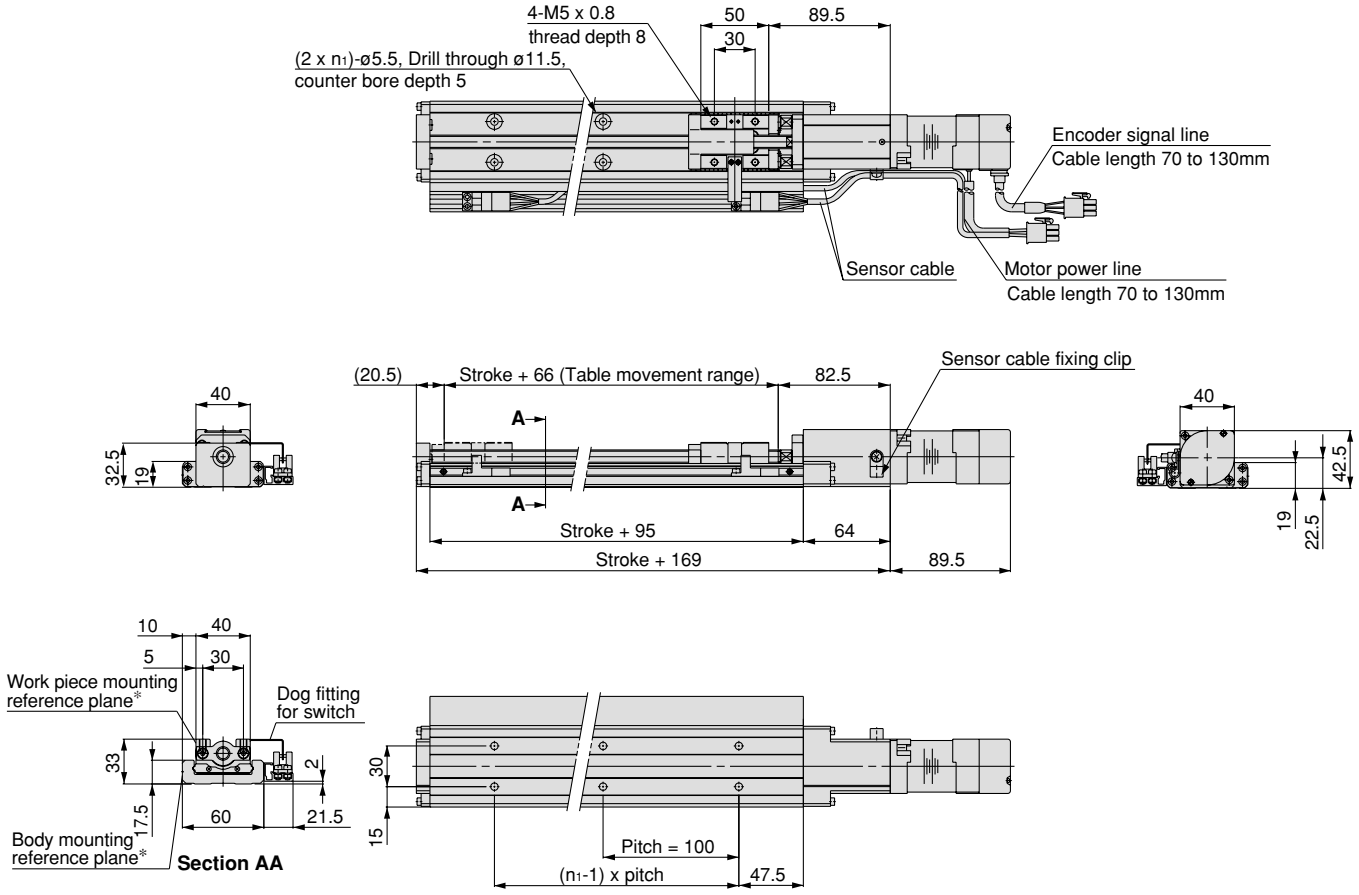
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6E□PF

Scale: 18%



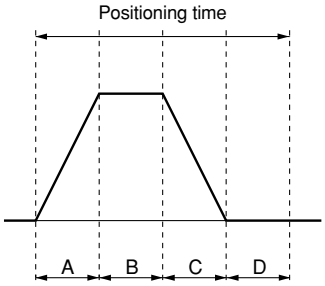
Model	Stroke	n_1
LTF6E□PF- 100-□□	100	2
LTF6E□PF- 200-□□	200	3
LTF6E□PF- 300-□□	300	4
LTF6E□PF- 400-□□	400	5
LTF6E□PF- 500-□□	500	6
LTF6E□PF- 600-□□	600	7

* 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.)				
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/s^2

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/10mm lead

How to Order

LTF6E 1 PH — Stroke — R 2

Power supply voltage

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

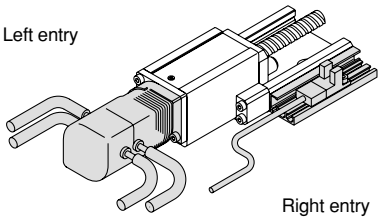
Motor/switch entry direction

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

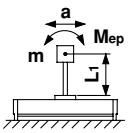
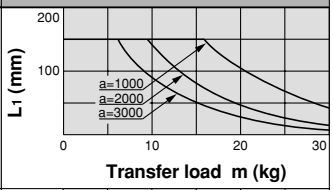
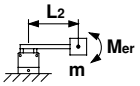
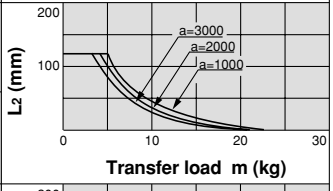
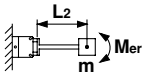
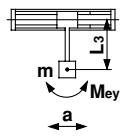
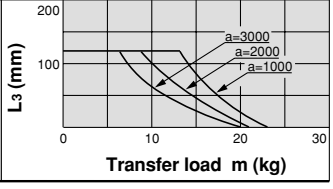


Specifications

	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 ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

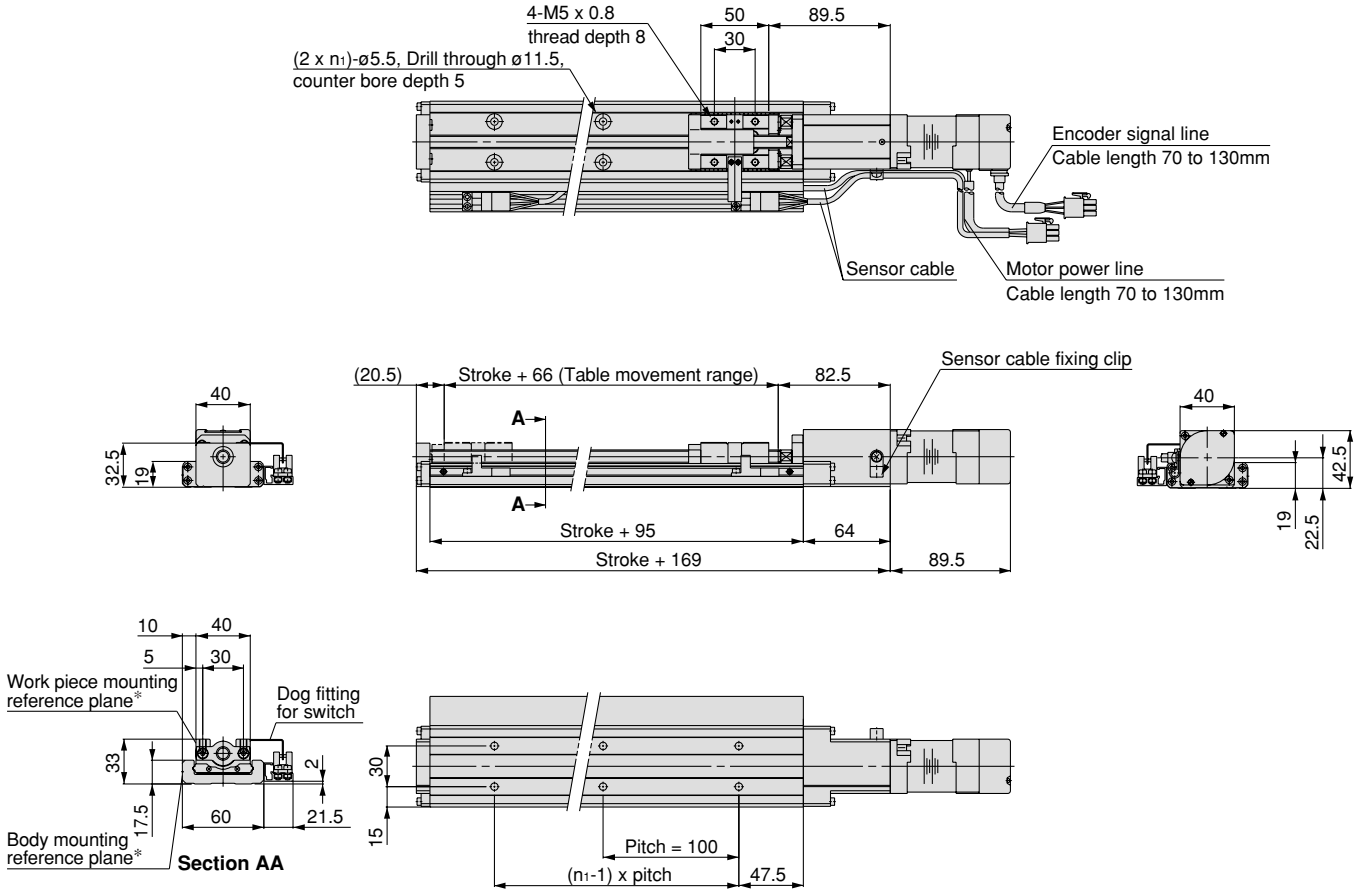
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6E□PH

Scale: 18%



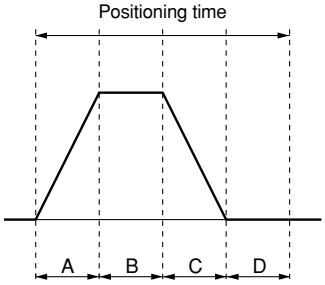
Model	Stroke	n_1
LTF6E□PH- 100-□□	100	2
LTF6E□PH- 200-□□	200	3
LTF6E□PH- 300-□□	300	4
LTF6E□PH- 400-□□	400	5
LTF6E□PH- 500-□□	500	6
LTF6E□PH- 600-□□	600	7

∗ 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.)				
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

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/6mm lead

How to Order

LTF6E 1 NF — Stroke — R 2

Power supply voltage

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

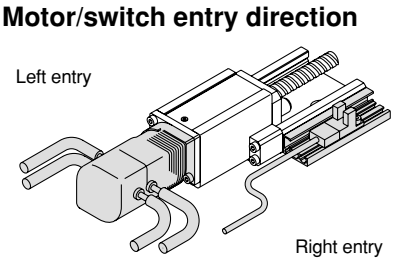
Motor/switch entry direction

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

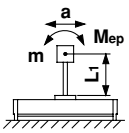
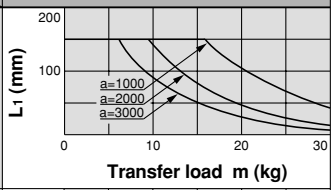
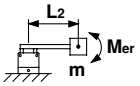
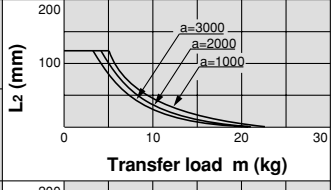
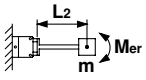
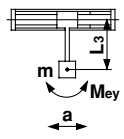
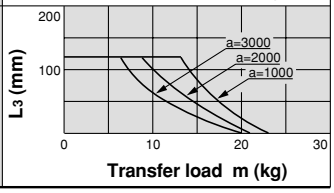


Specifications

	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					230
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W)					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

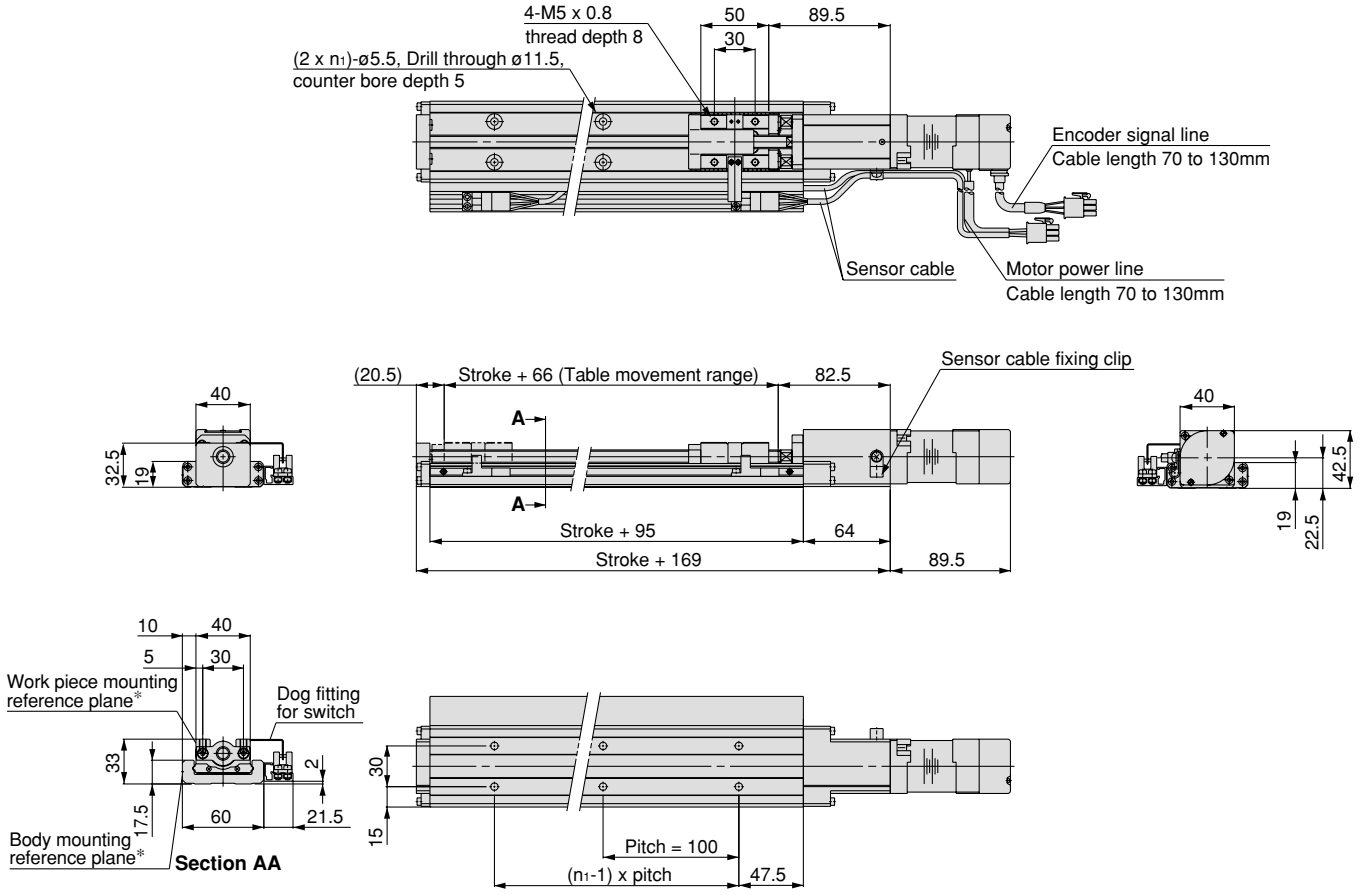
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6E□NF

Scale: 18%



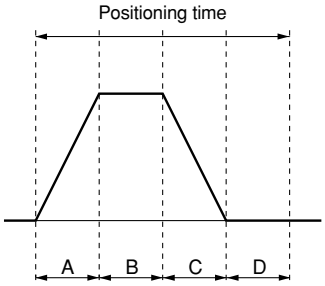
Model	Stroke	n_1
LTF6E□NF- 100-□□	100	2
LTF6E□NF- 200-□□	200	3
LTF6E□NF- 300-□□	300	4
LTF6E□NF- 400-□□	400	5
LTF6E□NF- 500-□□	500	6
LTF6E□NF- 600-□□	600	7

∗ 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.)				
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

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/10mm lead

How to Order

LTF6E 1 NH — Stroke — R 2

Power supply voltage

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

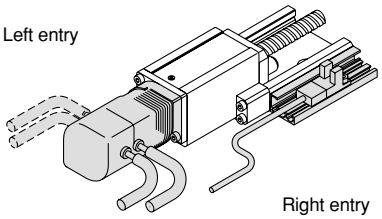
Motor/switch entry direction

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

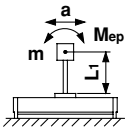
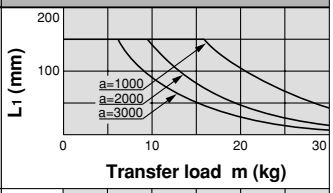
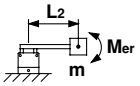
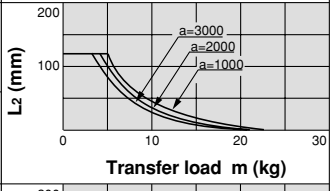
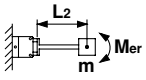
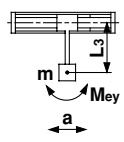
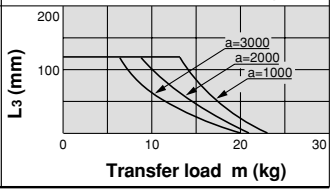


Specifications

	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					390
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W)					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

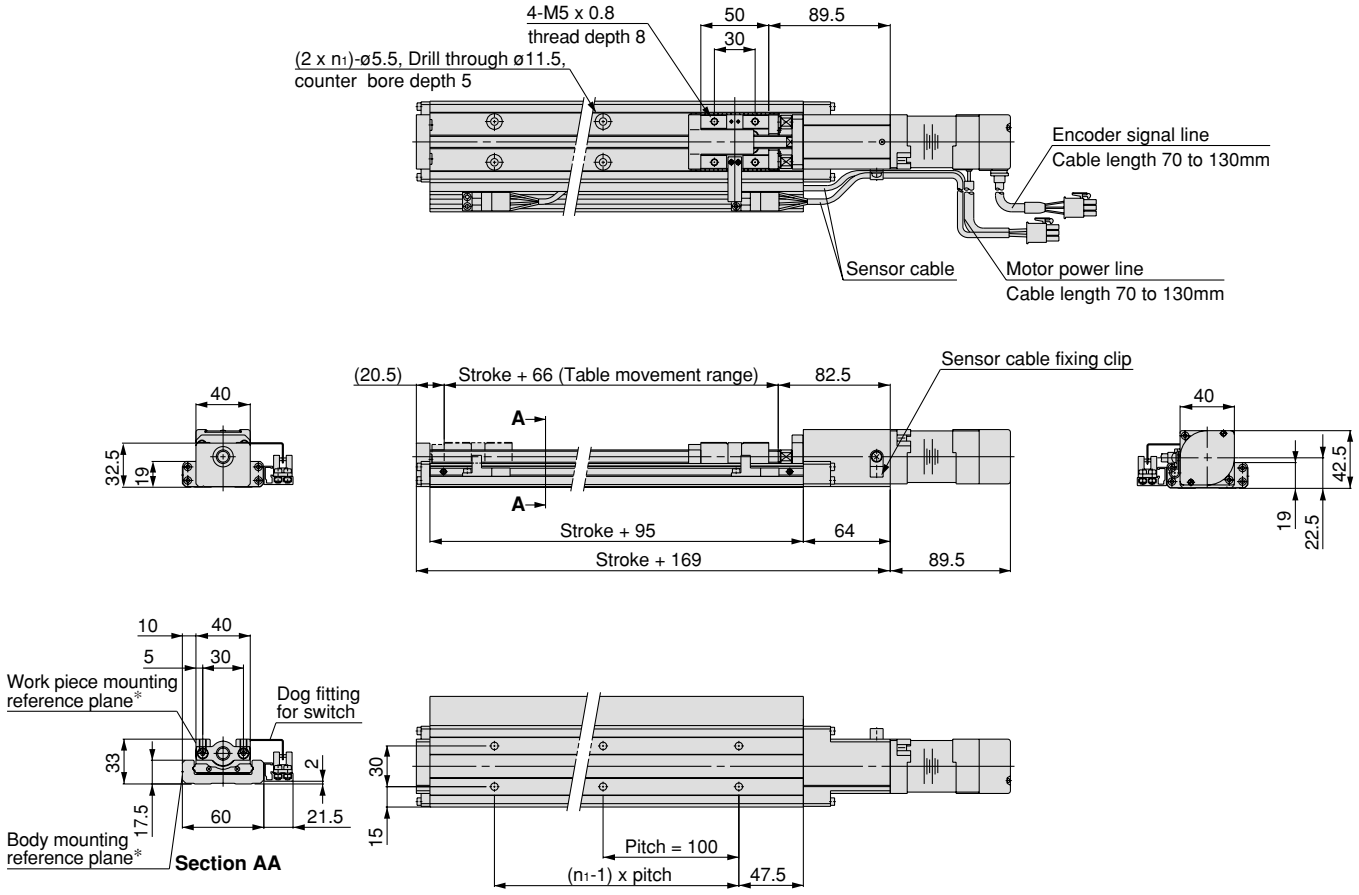
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6E□NH

Scale: 18%



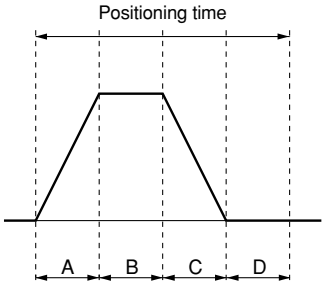
Model	Stroke	n_1
LTF6E□NH- 100-□□	100	2
LTF6E□NH- 200-□□	200	3
LTF6E□NH- 300-□□	300	4
LTF6E□NH- 400-□□	400	5
LTF6E□NH- 500-□□	500	6
LTF6E□NH- 600-□□	600	7

* 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4 sec.)
Maximum acceleration: 3000mm/s^2

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/10mm lead

How to Order

LTF8F 1 PH — Stroke — R 2

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

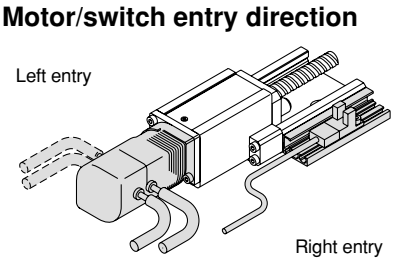
Motor/switch entry direction

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

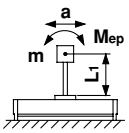
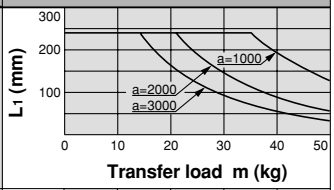
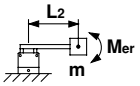
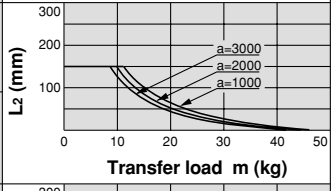
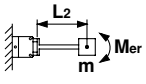
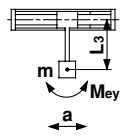
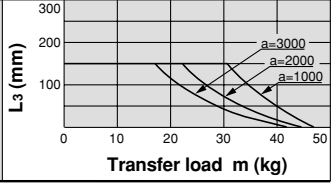


Specifications

	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	±0.02									
Main parts	Motor		AC servomotor (200W)									
	Encoder		Incremental system									
	Lead screw		Ground ball screw ø15mm, 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

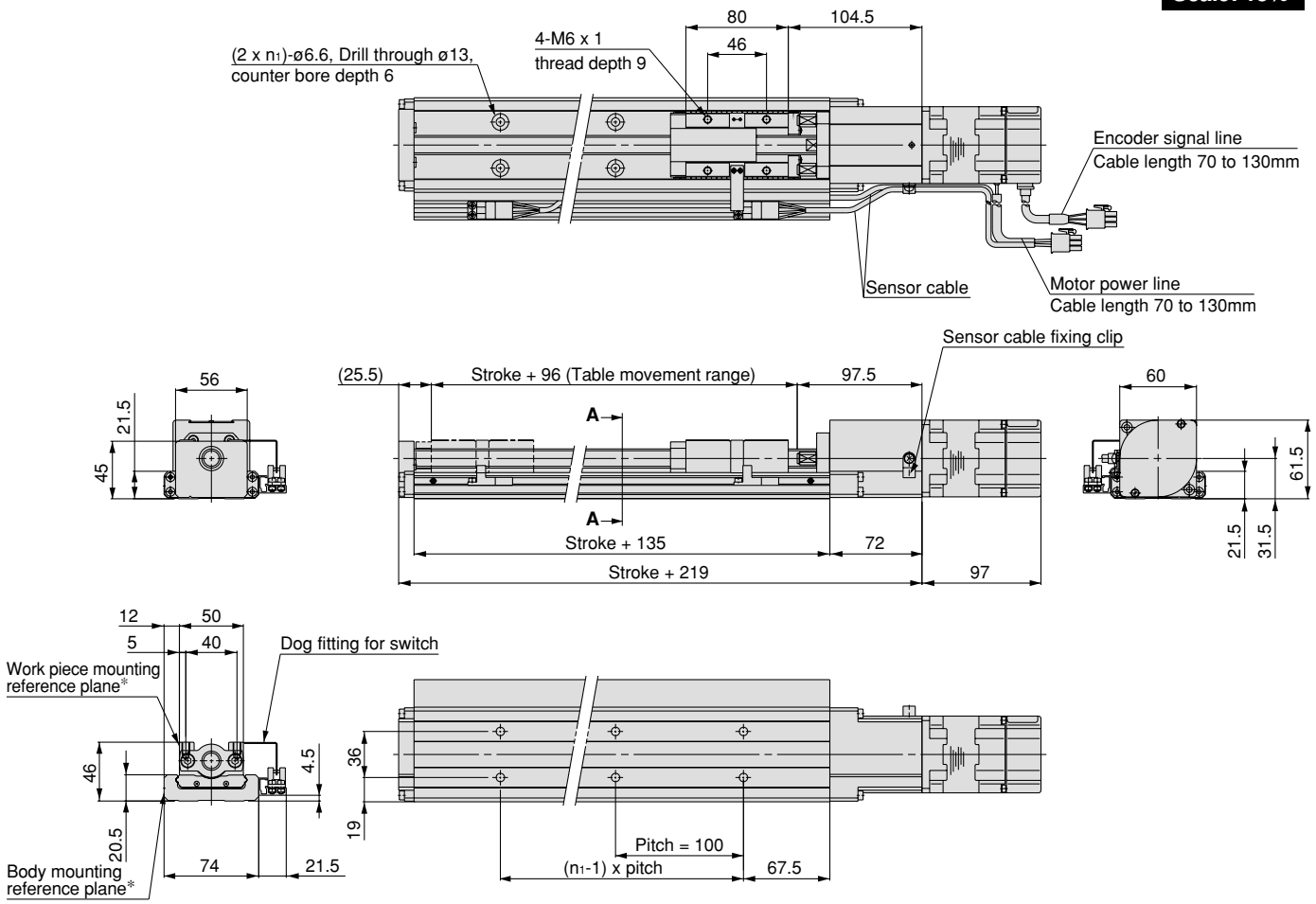
Mounting orientation / Load movement direction		Model	LTF8
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

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/LTF8F□PH

Scale: 18%



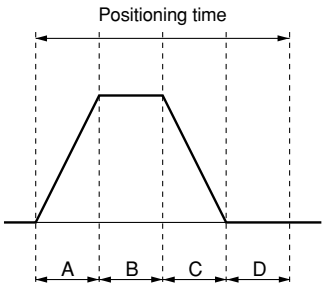
Model	Stroke	n_1
LTF8F□PH- 100-□□	100	2
LTF8F□PH- 200-□□	200	3
LTF8F□PH- 300-□□	300	4
LTF8F□PH- 400-□□	400	5
LTF8F□PH- 500-□□	500	6
LTF8F□PH- 600-□□	600	7
LTF8F□PH- 700-□□	700	8
LTF8F□PH- 800-□□	800	9
LTF8F□PH- 900-□□	900	10
LTF8F□PH-1000-□□	1000	11

∗ 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.5 sec.)
Maximum acceleration: 3000mm/s²

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/20mm lead

How to Order

LTF8F 1 PL — Stroke — R 2

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

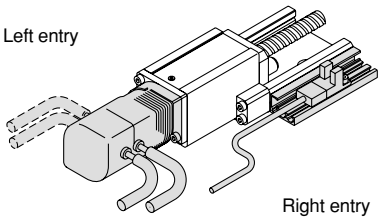
Motor/switch entry direction

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

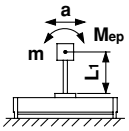
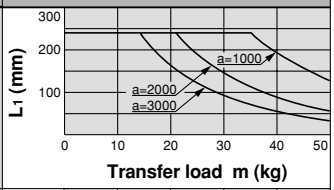
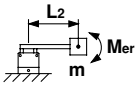
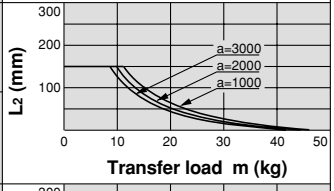
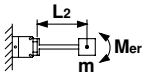
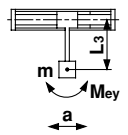
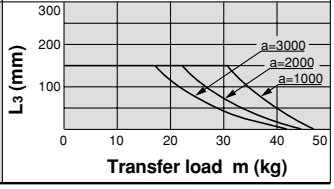


Specifications

	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 ø15mm, 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

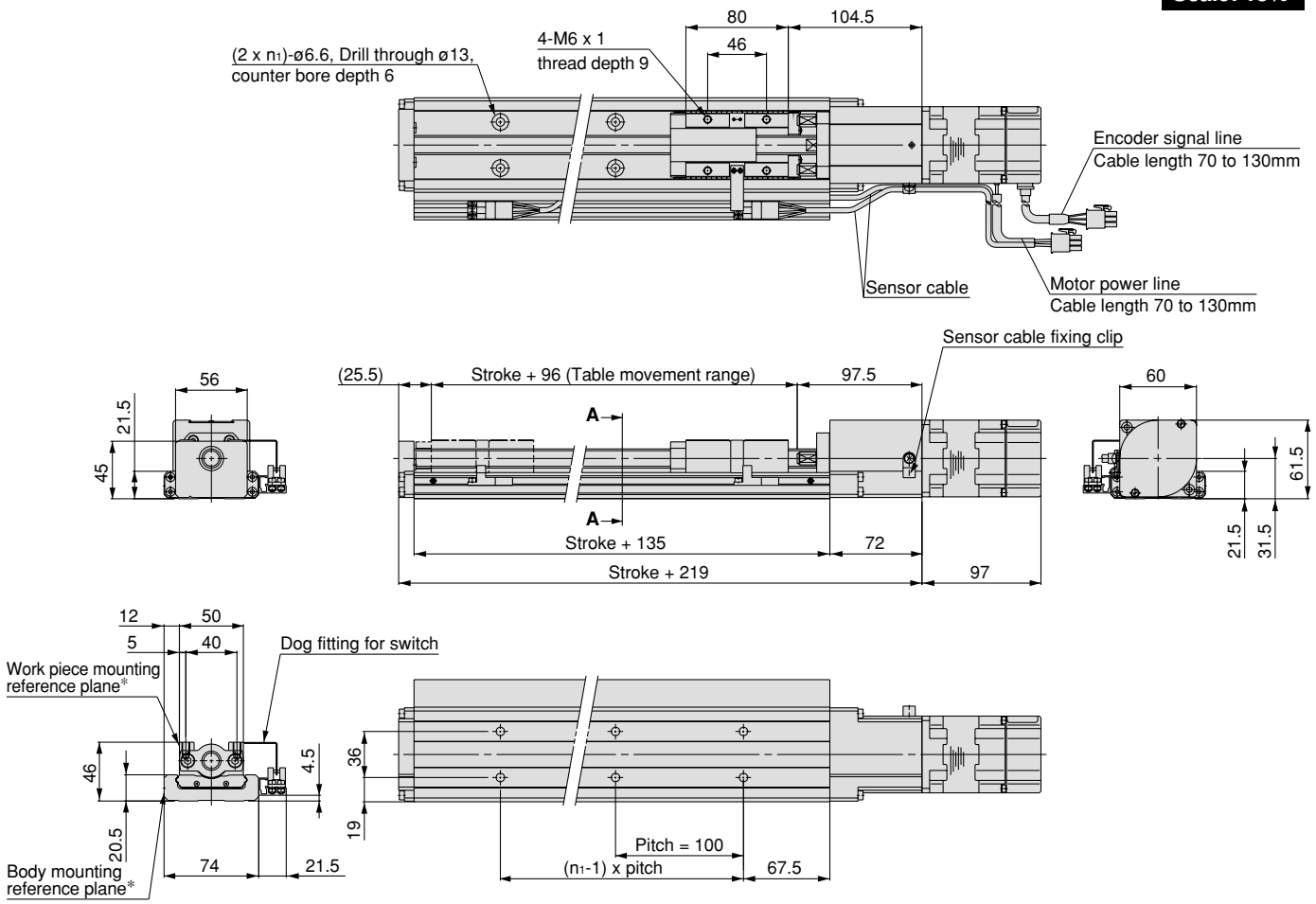
Mounting orientation / Load movement direction		Model	LTF8
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

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/LTF8F□PL

Scale: 18%



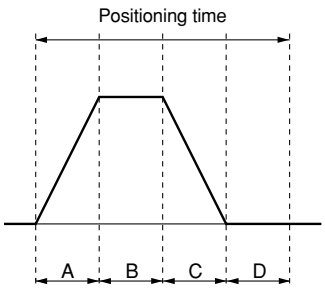
Model	Stroke	n_1
LTF8F□PL- 100-□□	100	2
LTF8F□PL- 200-□□	200	3
LTF8F□PL- 300-□□	300	4
LTF8F□PL- 400-□□	400	5
LTF8F□PL- 500-□□	500	6
LTF8F□PL- 600-□□	600	7
LTF8F□PL- 700-□□	700	8
LTF8F□PL- 800-□□	800	9
LTF8F□PL- 900-□□	900	10
LTF8F□PL-1000-□□	1000	11

∗ 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.5 sec.)
Maximum acceleration: 3000mm/s²

Series LTF8

Motor Output **200**W

Rolled Ball Screw ø**15**mm/**10**mm lead

How to Order

LTF8F [1] [NH] — [Stroke] — [R] [2]

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

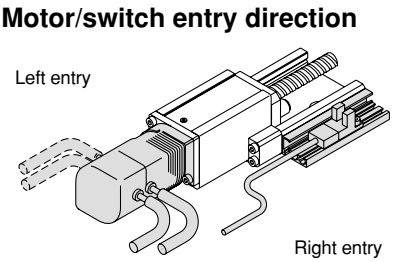
Motor/switch entry direction

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

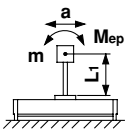
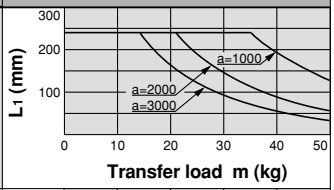
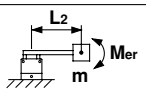
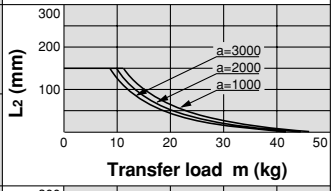
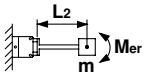
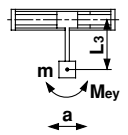
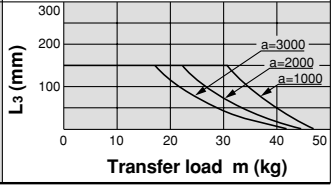


Specifications

	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 ø15mm, 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

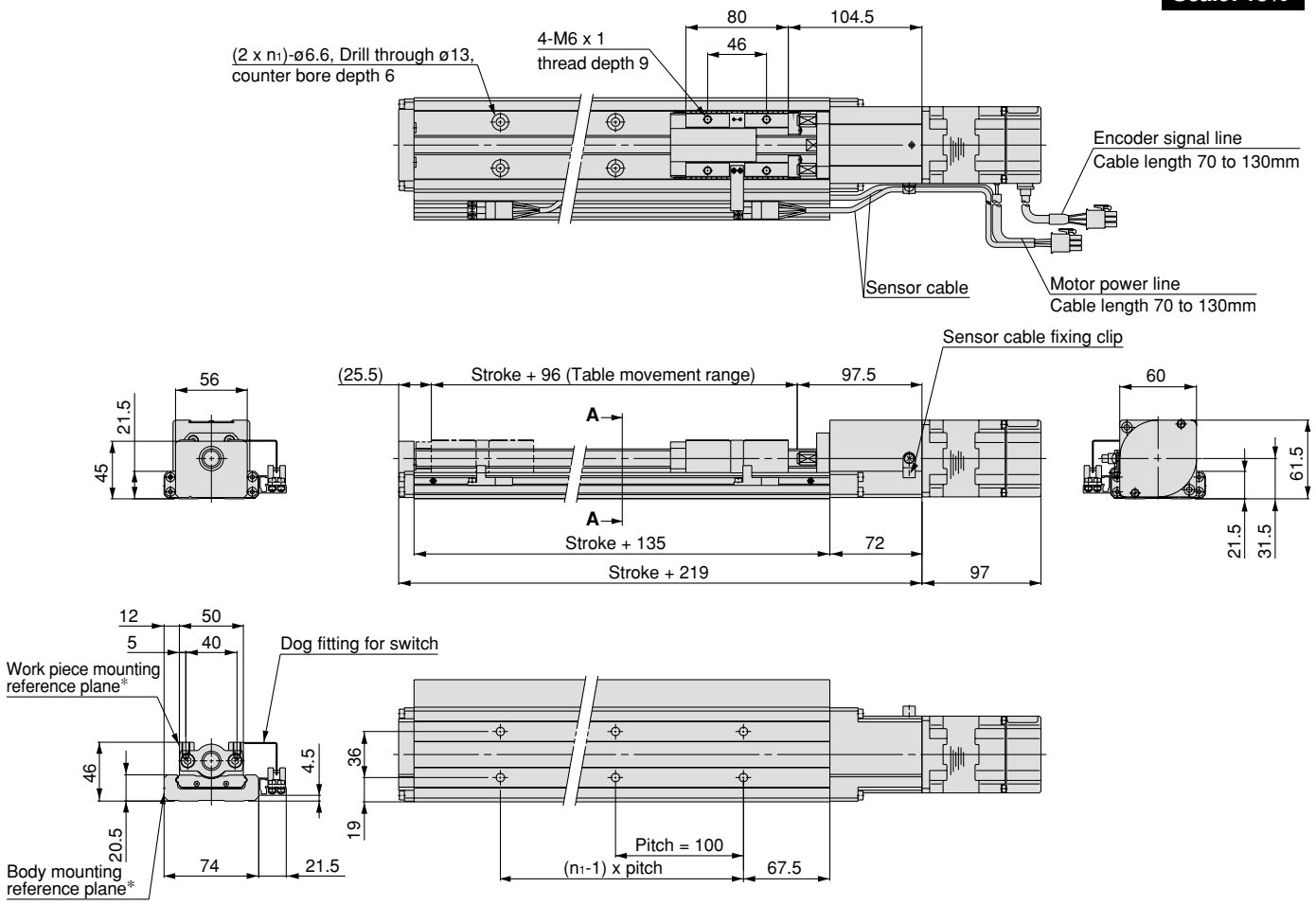
Mounting orientation / Load movement direction		Model	LTF8
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

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/LTF8F□NH

Scale: 18%



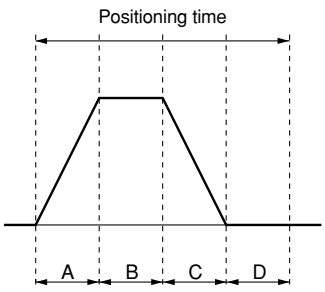
Model	Stroke	n_1
LTF8F□NH- 100-□□	100	2
LTF8F□NH- 200-□□	200	3
LTF8F□NH- 300-□□	300	4
LTF8F□NH- 400-□□	400	5
LTF8F□NH- 500-□□	500	6
LTF8F□NH- 600-□□	600	7
LTF8F□NH- 700-□□	700	8
LTF8F□NH- 800-□□	800	9
LTF8F□NH- 900-□□	900	10
LTF8F□NH-1000-□□	1000	11

∗ 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.)				
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

Series LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/20mm lead

How to Order

LTF8F 1 NL — Stroke — R 2

Power supply voltage

1	100V/110V AC(50/60Hz)
2	200V AC(50/60Hz)

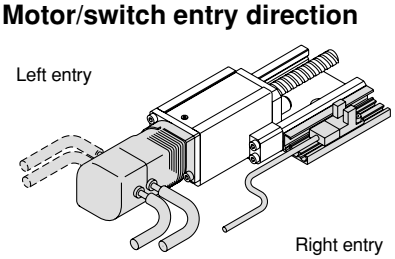
Motor/switch entry direction

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

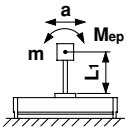
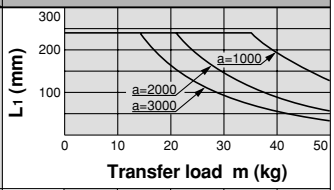
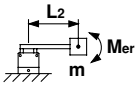
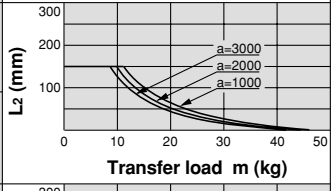
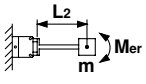
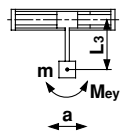
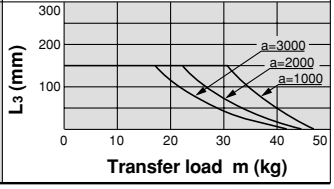


Specifications

	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 ø15mm, 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

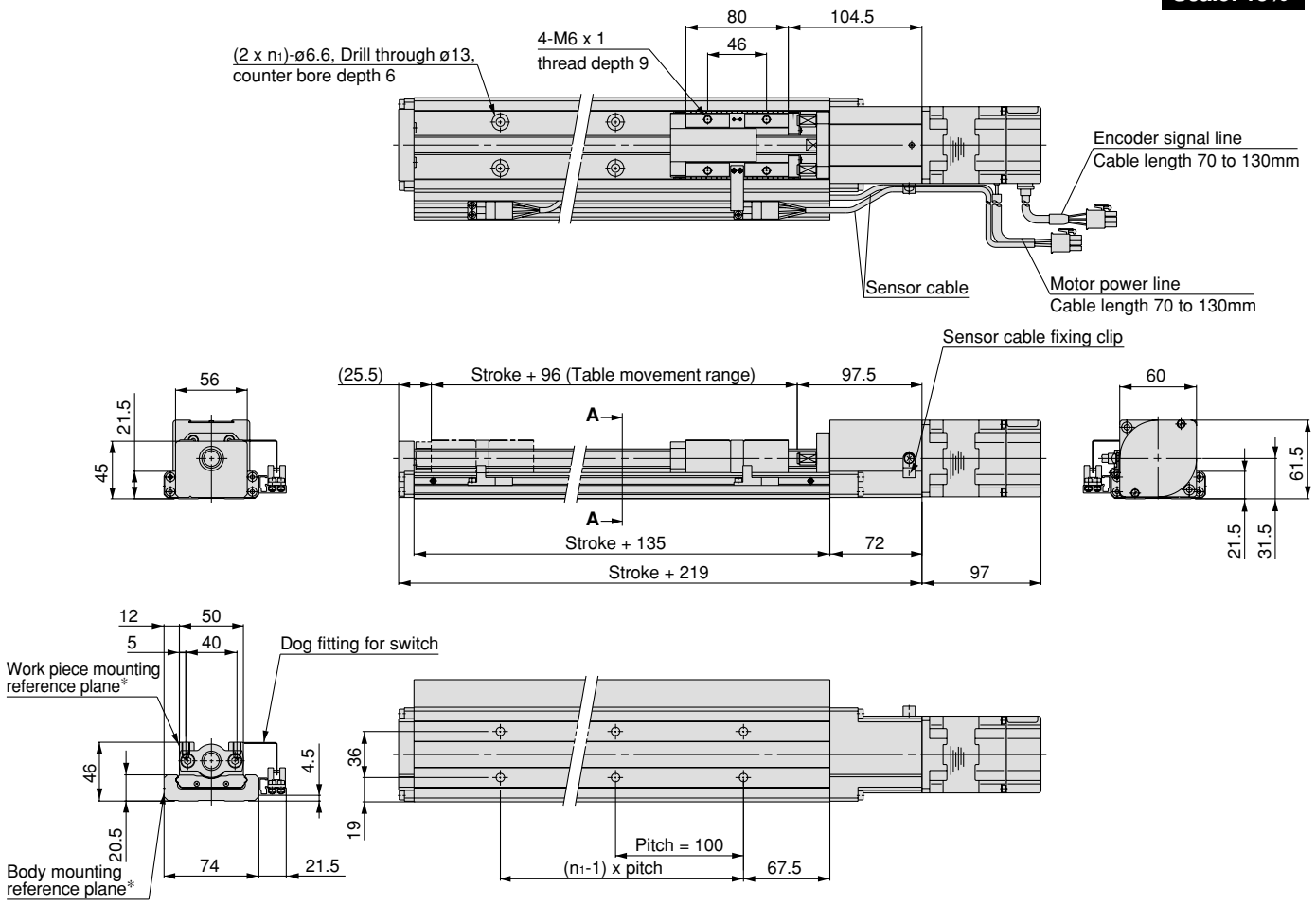
Mounting orientation / Load movement direction		Model	LTF8
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

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/LTF8F□NL

Scale: 18%



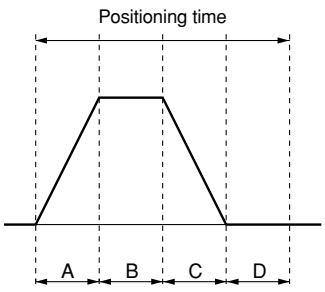
Model	Stroke	n_1
LTF8F□NL- 100-□□	100	2
LTF8F□NL- 200-□□	200	3
LTF8F□NL- 300-□□	300	4
LTF8F□NL- 400-□□	400	5
LTF8F□NL- 500-□□	500	6
LTF8F□NL- 600-□□	600	7
LTF8F□NL- 700-□□	700	8
LTF8F□NL- 800-□□	800	9
LTF8F□NL- 900-□□	900	10
LTF8F□NL-1000-□□	1000	11

* 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.)				
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

Series LTF6

Motor Output **100**W

Ground Ball Screw ø**10**mm/**6**mm lead

How to Order

LTF6E 1 PF — Stroke K — R 2

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

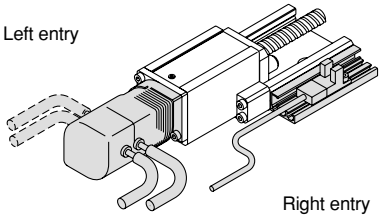
Motor/switch entry direction

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



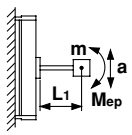
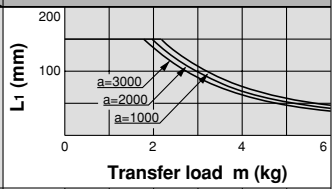
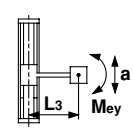
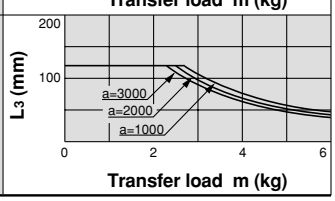
Specifications

	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					230
	Positioning repeatability	mm	±0.02					
Main parts	Motor		AC servomotor (100W) with brake					
	Encoder		Incremental system					
	Lead screw		Ground ball screw ø10mm, 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

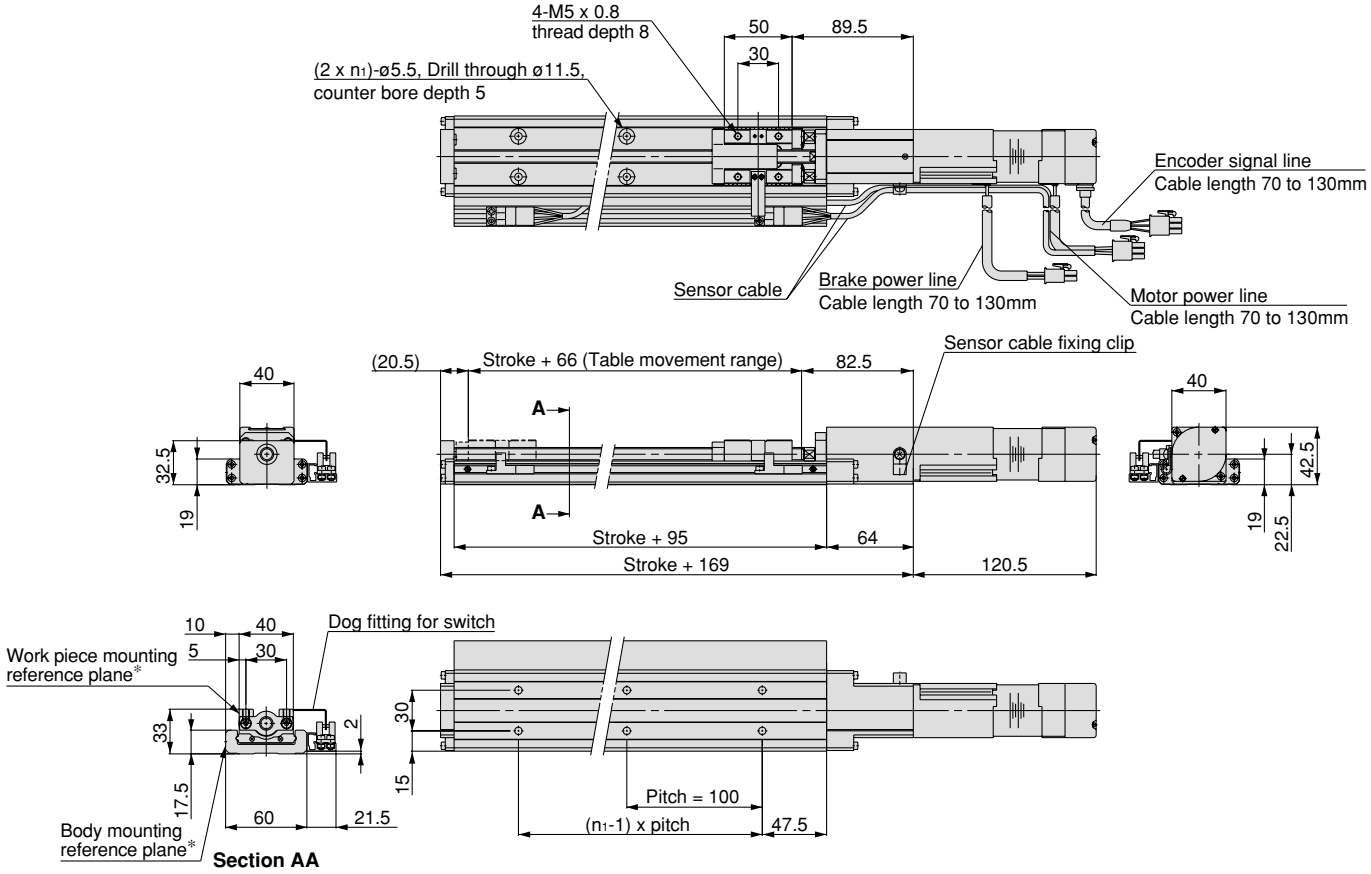
Mounting orientation / Load movement direction		Model	LTF6
Pitching		Vertical	
Rolling		Vertical	

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%



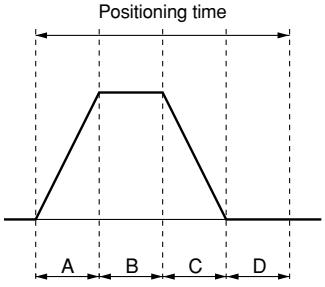
Model	Stroke	n_1
LTF6E□PF- 100K-□□	100	2
LTF6E□PF- 200K-□□	200	3
LTF6E□PF- 300K-□□	300	4
LTF6E□PF- 400K-□□	400	5
LTF6E□PF- 500K-□□	500	6
LTF6E□PF- 600K-□□	600	7

* 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4 sec.)
Maximum acceleration: 3000mm/s^2

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/10mm lead

How to Order

LTF6E [1] [PH] — [Stroke] K — [R] [2]

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

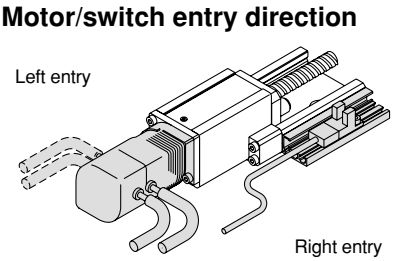
Motor/switch entry direction

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



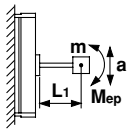
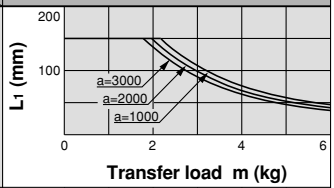
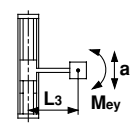
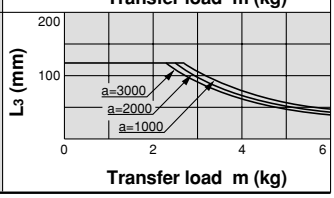
Specifications

	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 ø10mm, 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

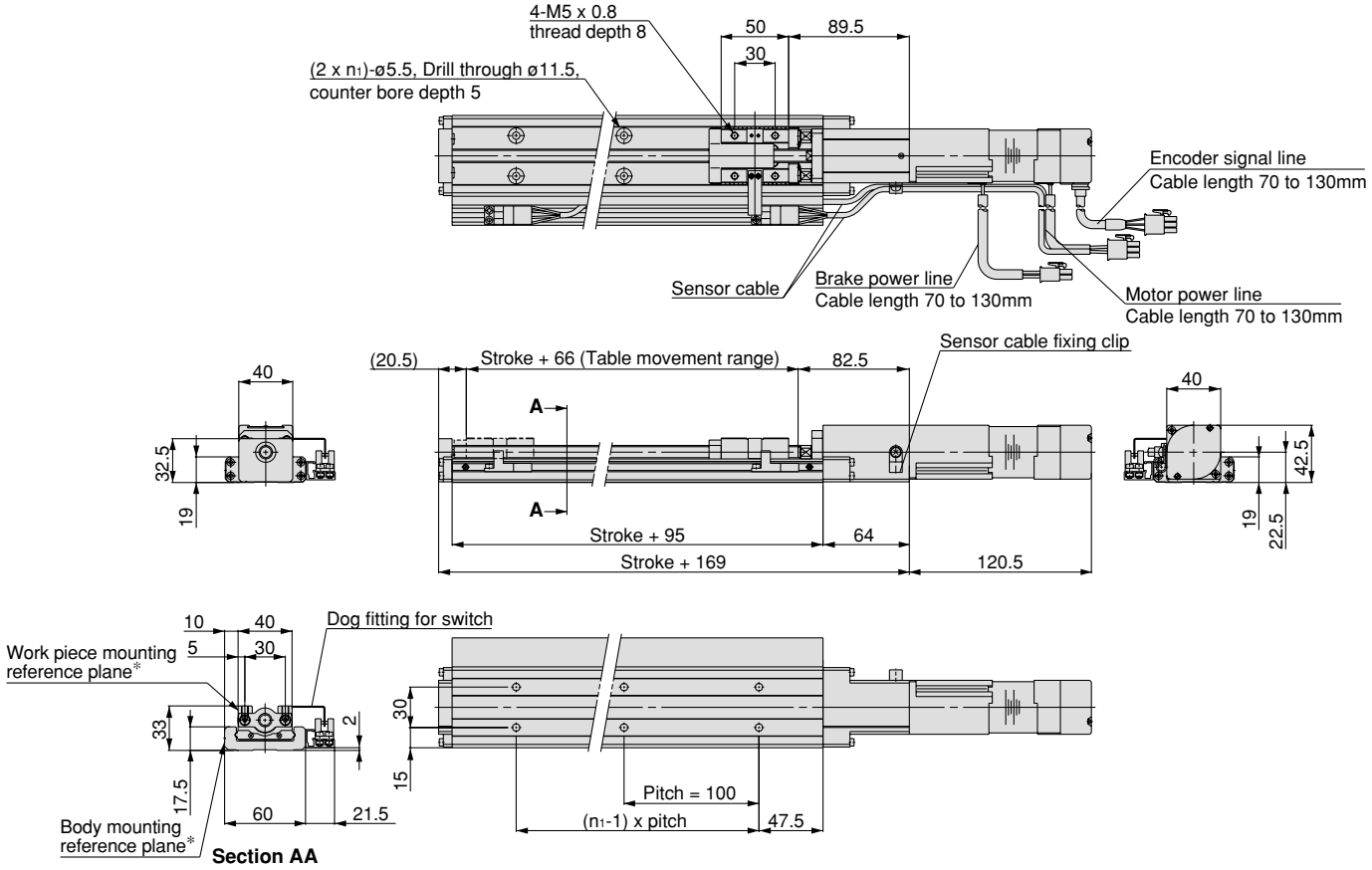
Mounting orientation / Load movement direction			LTF6
Pitching		Vertical	
Rolling		Vertical	

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/LTF6E□PH

Scale: 18%



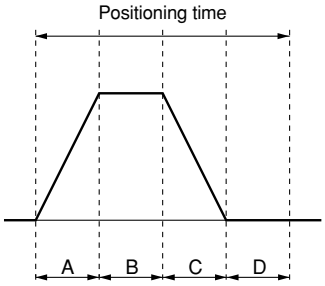
Model	Stroke	n_1
LTF6E□PH- 100K-□□	100	2
LTF6E□PH- 200K-□□	200	3
LTF6E□PH- 300K-□□	300	4
LTF6E□PH- 400K-□□	400	5
LTF6E□PH- 500K-□□	500	6
LTF6E□PH- 600K-□□	600	7

∗ 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.)				
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/s^2

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/6mm lead

How to Order

LTF6E 1 NF — Stroke K — R 2

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

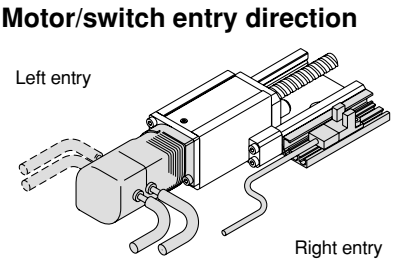
Motor/switch entry direction

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



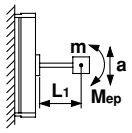
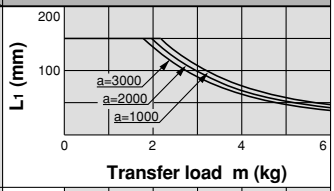
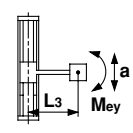
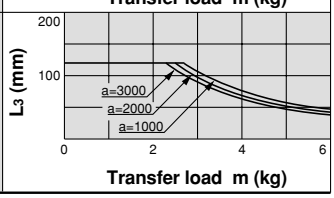
Specifications

	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					230
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W) with brake					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

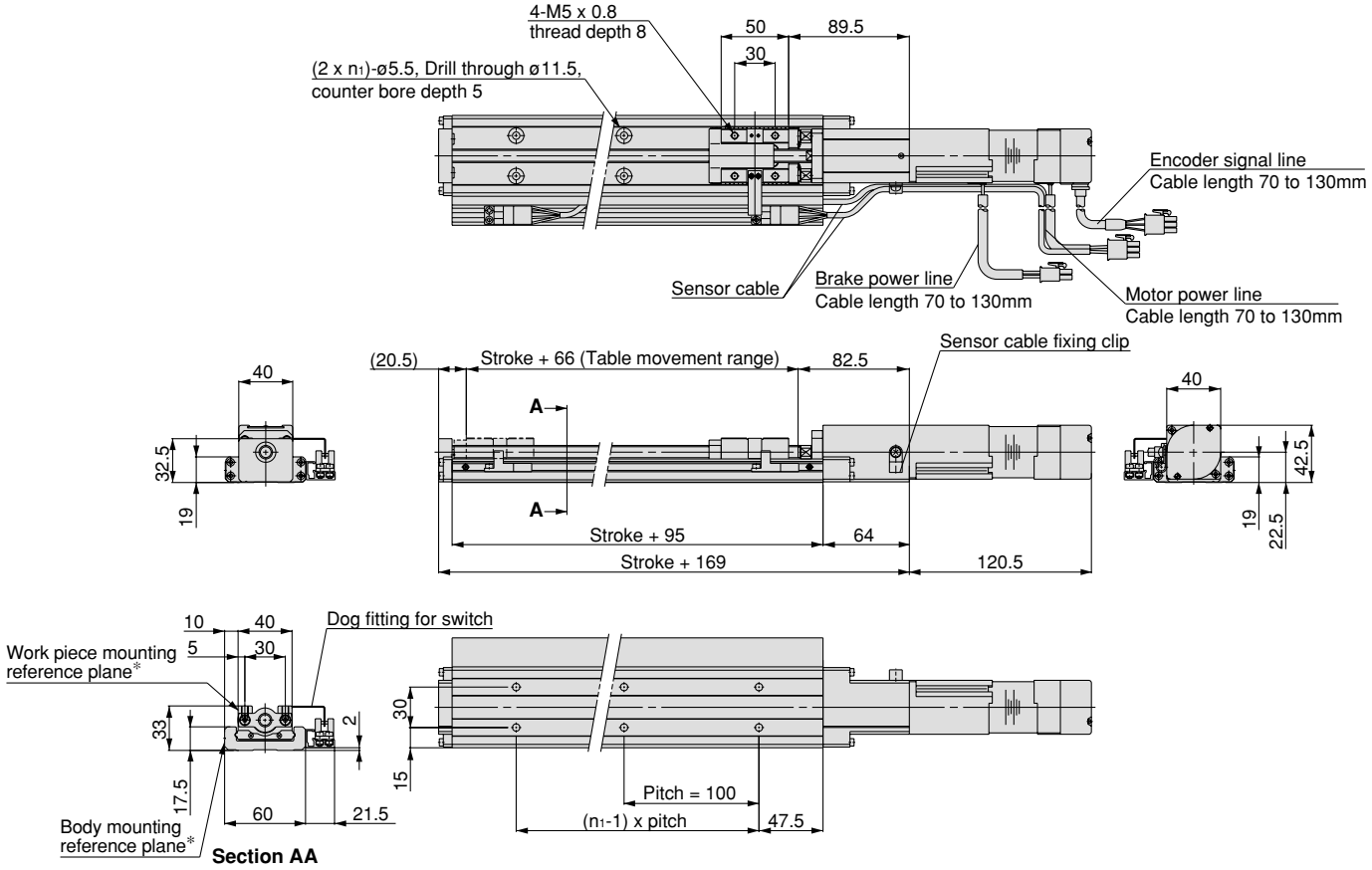
Mounting orientation / Load movement direction			LTF6
Pitching		Vertical	
Rolling		Vertical	

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/LTF6E□NF

Scale: 18%



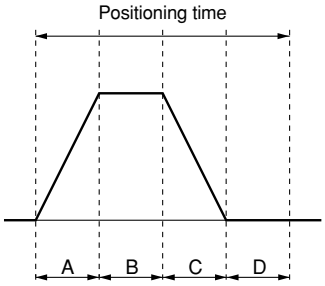
Model	Stroke	n_1
LTF6E□NF- 100K-□□	100	2
LTF6E□NF- 200K-□□	200	3
LTF6E□NF- 300K-□□	300	4
LTF6E□NF- 400K-□□	400	5
LTF6E□NF- 500K-□□	500	6
LTF6E□NF- 600K-□□	600	7

∗ 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4 sec.)
Maximum acceleration: 3000mm/s^2

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/10mm lead

How to Order

LTF6E [1] [NH] — [Stroke] [K] — [R] [2]

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

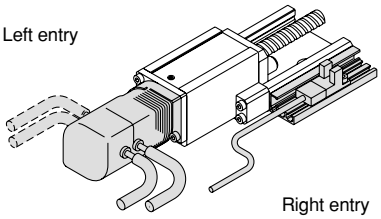
Motor/switch entry direction

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



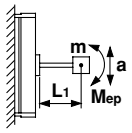
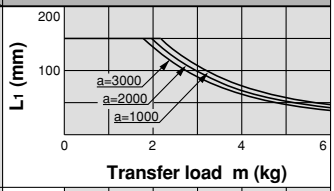
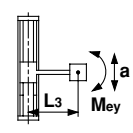
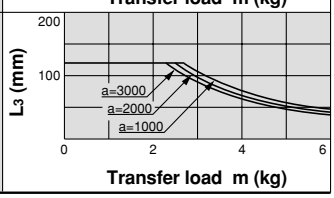
Specifications

	Standard stroke	mm	100	200	300	400	500	600
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 ø10mm, 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

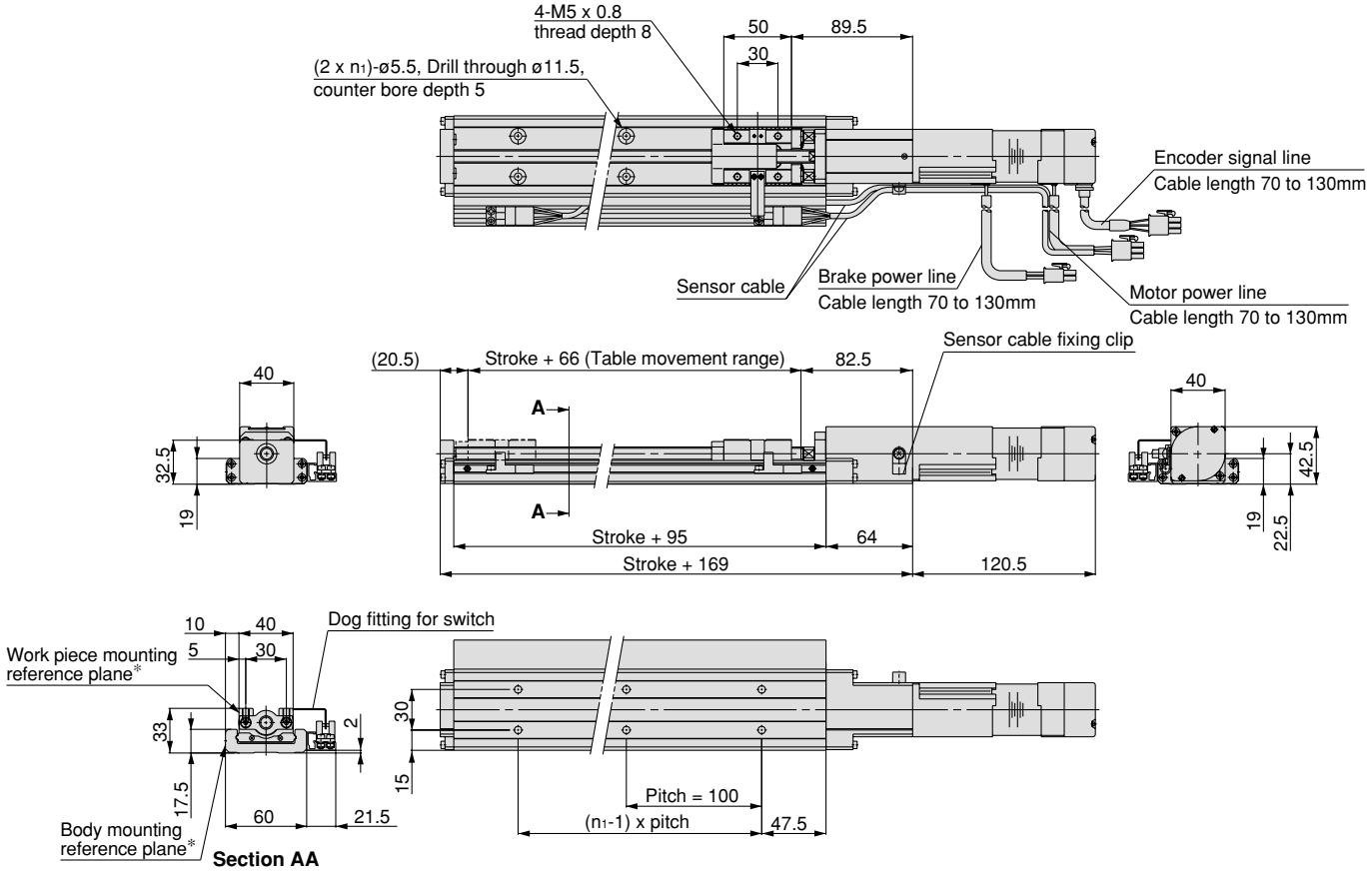
Mounting orientation / Load movement direction			LTF6
Pitching		Vertical	
Rolling		Vertical	

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/LTF6E□NH

Scale: 18%



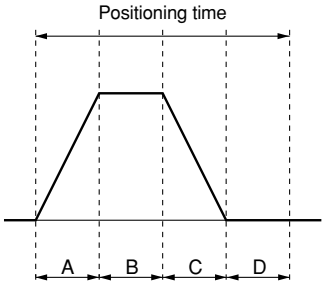
Model	Stroke	n_1
LTF6E□NH- 100K-□□	100	2
LTF6E□NH- 200K-□□	200	3
LTF6E□NH- 300K-□□	300	4
LTF6E□NH- 400K-□□	400	5
LTF6E□NH- 500K-□□	500	6
LTF6E□NH- 600K-□□	600	7

∗ 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.)				
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/s^2

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/10mm lead

How to Order

LTF8F [1] [PH] — [Stroke] [K] — [R] [2]

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

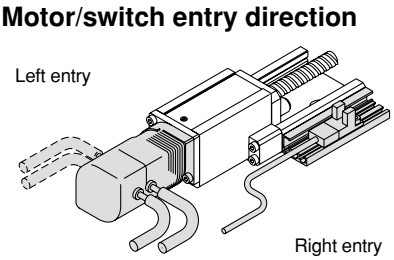
Motor/switch entry direction

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



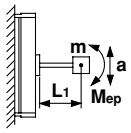
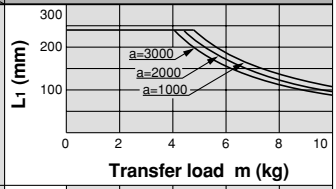
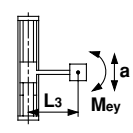
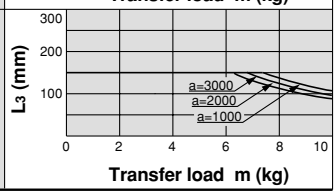
Specifications

	Standard stroke	mm	100	200	300	400	500	600	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	240
	Positioning repeatability	mm	±0.02									
Main parts	Motor		AC servomotor (200W) with brake									
	Encoder		Incremental system									
	Lead screw		Ground ball screw ø15mm, 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

Mounting orientation / Load movement direction			LTF8
Pitching		Vertical	
Rolling		Vertical	

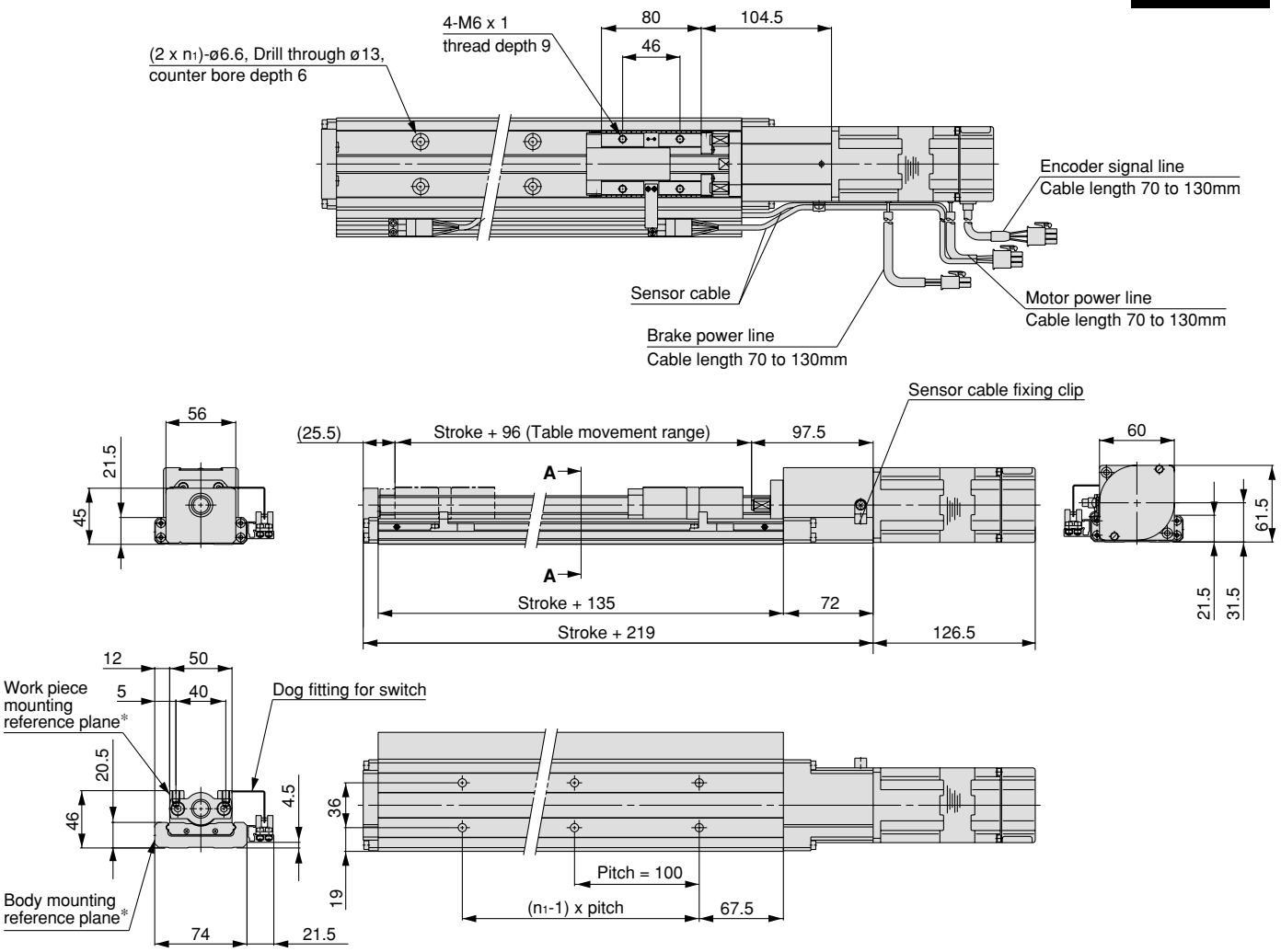
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF8F□PH

Scale: 18%



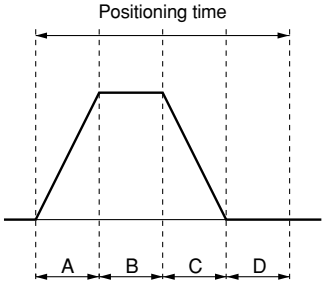
Model	Stroke	n_1
LTF8F□PH- 100K-□□	100	2
LTF8F□PH- 200K-□□	200	3
LTF8F□PH- 300K-□□	300	4
LTF8F□PH- 400K-□□	400	5
LTF8F□PH- 500K-□□	500	6
LTF8F□PH- 600K-□□	600	7
LTF8F□PH- 700K-□□	700	8
LTF8F□PH- 800K-□□	800	9
LTF8F□PH- 900K-□□	900	10
LTF8F□PH-1000K-□□	1000	11

∗ 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.)				
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

Series LTF8

Motor Output **200**W

Ground Ball Screw ø**15**mm/**20**mm lead

How to Order

LTF8F **1** **PL** — **Stroke** **K** — **R** **2**

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

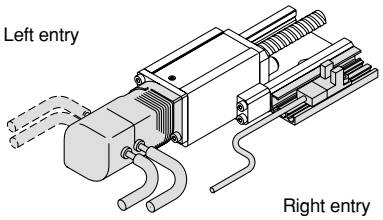
Motor/switch entry direction

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



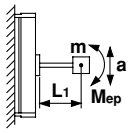
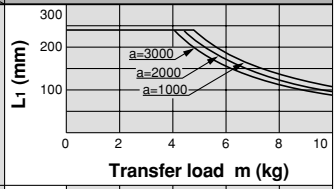
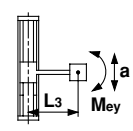
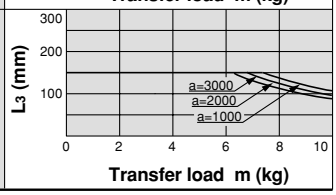
Specifications

	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	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 ø15mm, 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

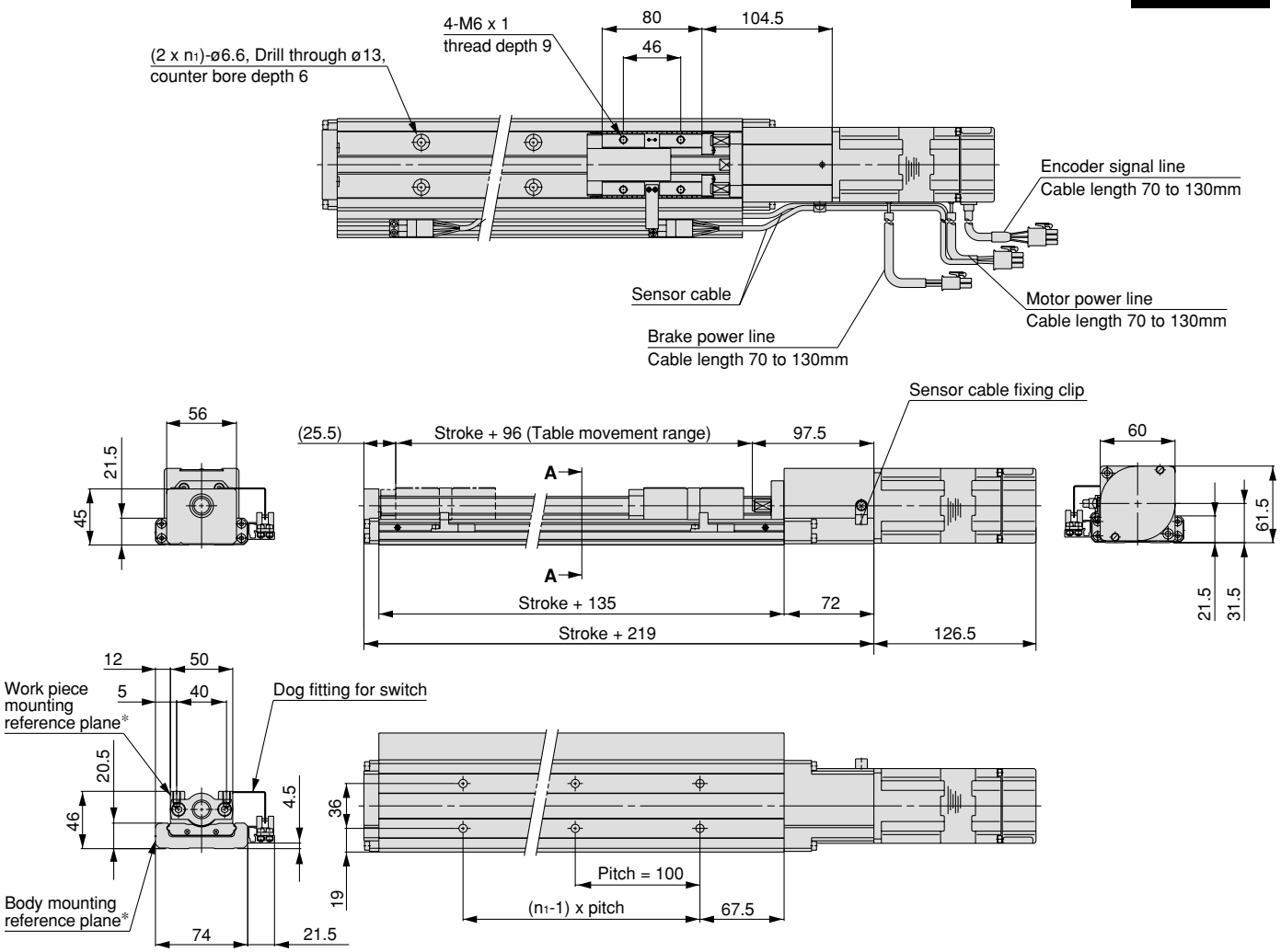
Mounting orientation / Load movement direction			LTF8
Pitching		Vertical	
Rolling		Vertical	

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%



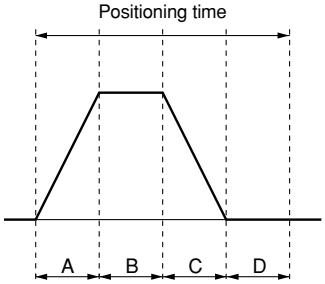
Model	Stroke	n_1
LTF8F□PL- 100K-□□	100	2
LTF8F□PL- 200K-□□	200	3
LTF8F□PL- 300K-□□	300	4
LTF8F□PL- 400K-□□	400	5
LTF8F□PL- 500K-□□	500	6
LTF8F□PL- 600K-□□	600	7
LTF8F□PL- 700K-□□	700	8
LTF8F□PL- 800K-□□	800	9
LTF8F□PL- 900K-□□	900	10
LTF8F□PL-1000K-□□	1000	11

* 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.)				
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

Series LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/10mm lead

How to Order

LTF8F 1 NH — Stroke K — R 2

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

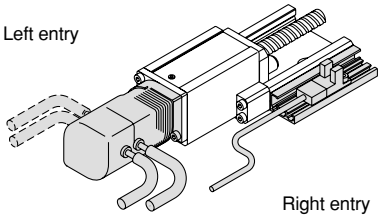
Motor/switch entry direction

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



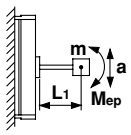
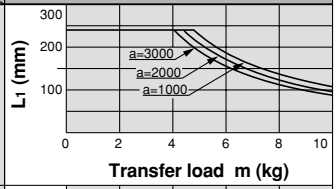
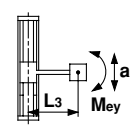
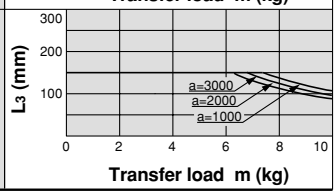
Specifications

	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	240
	Positioning repeatability	mm	±0.05									
Main parts	Motor		AC servomotor (200W) with brake									
	Encoder		Incremental system									
	Lead screw		Rolled ball screw ø15mm, 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

Mounting orientation / Load movement direction			LTF8
Pitching		Vertical	
Rolling		Vertical	

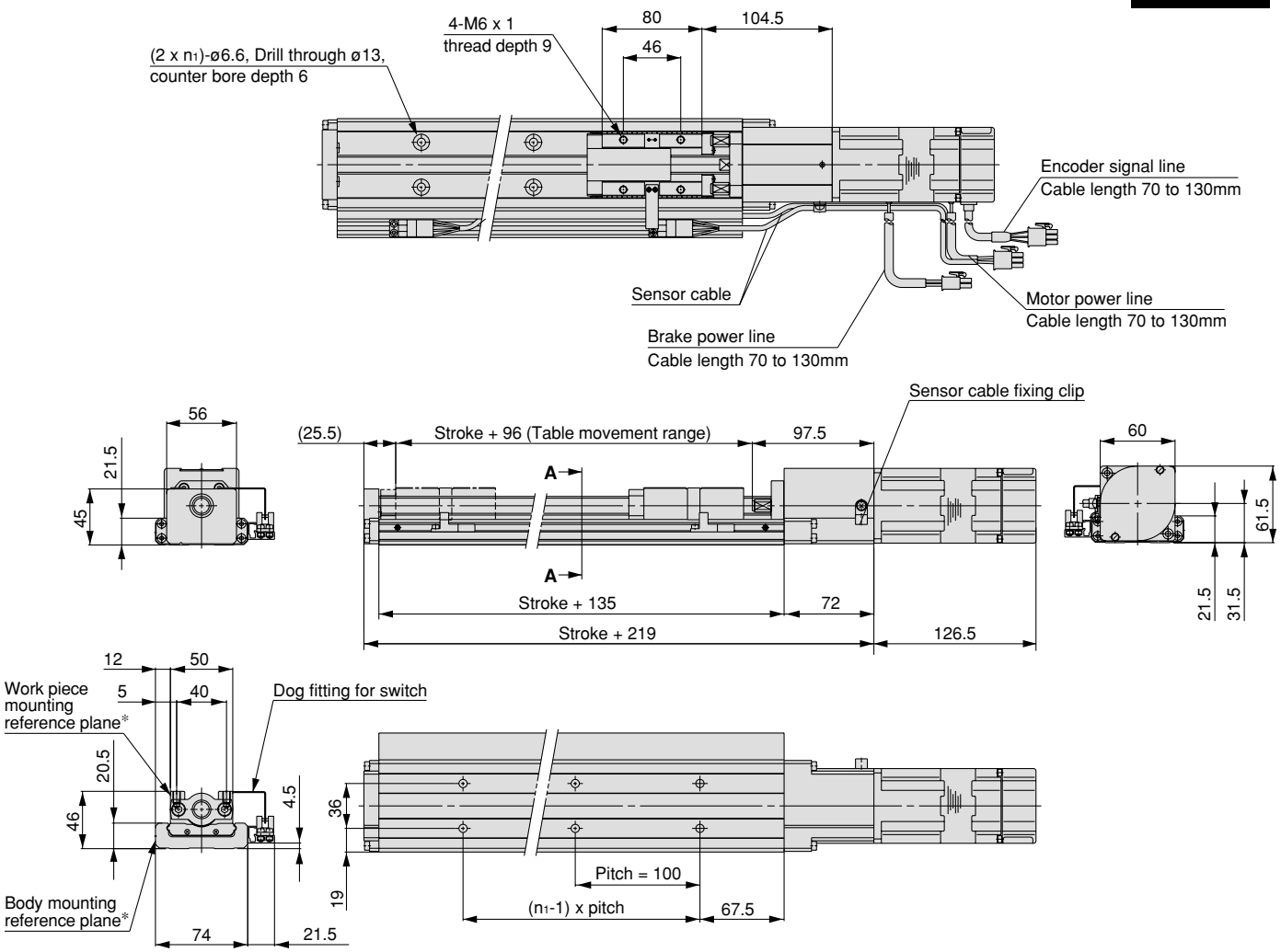
m : Transfer load (kg) Me : Allowable dynamic moment
a : Work piece acceleration (mm/s²) L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF8F□NH

Scale: 18%



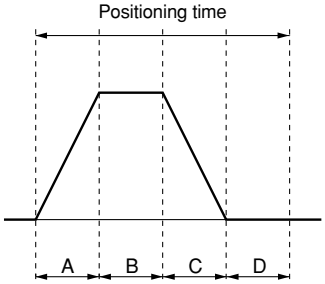
Model	Stroke	n_1
LTF8F□NH- 100K-□□	100	2
LTF8F□NH- 200K-□□	200	3
LTF8F□NH- 300K-□□	300	4
LTF8F□NH- 400K-□□	400	5
LTF8F□NH- 500K-□□	500	6
LTF8F□NH- 600K-□□	600	7
LTF8F□NH- 700K-□□	700	8
LTF8F□NH- 800K-□□	800	9
LTF8F□NH- 900K-□□	900	10
LTF8F□NH-1000K-□□	1000	11

∗ 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.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.5 sec.)
Maximum acceleration: 3000mm/s²

Series LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/20mm lead

How to Order

LTF8F 1 NL — Stroke K — R 2

Power supply voltage

1	100V AC(50/60Hz)
2	200V AC(50/60Hz)

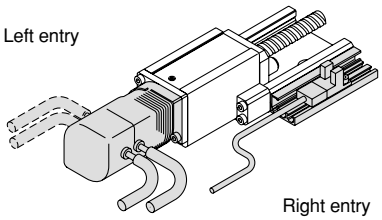
Motor/switch entry direction

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



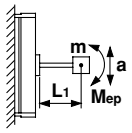
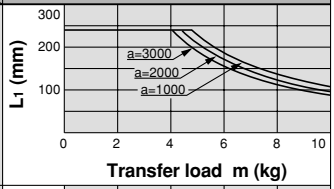
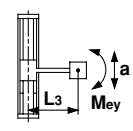
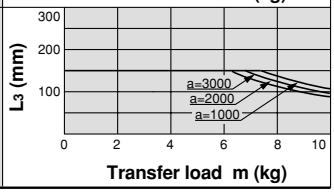
Specifications

	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	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 ø15mm, 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

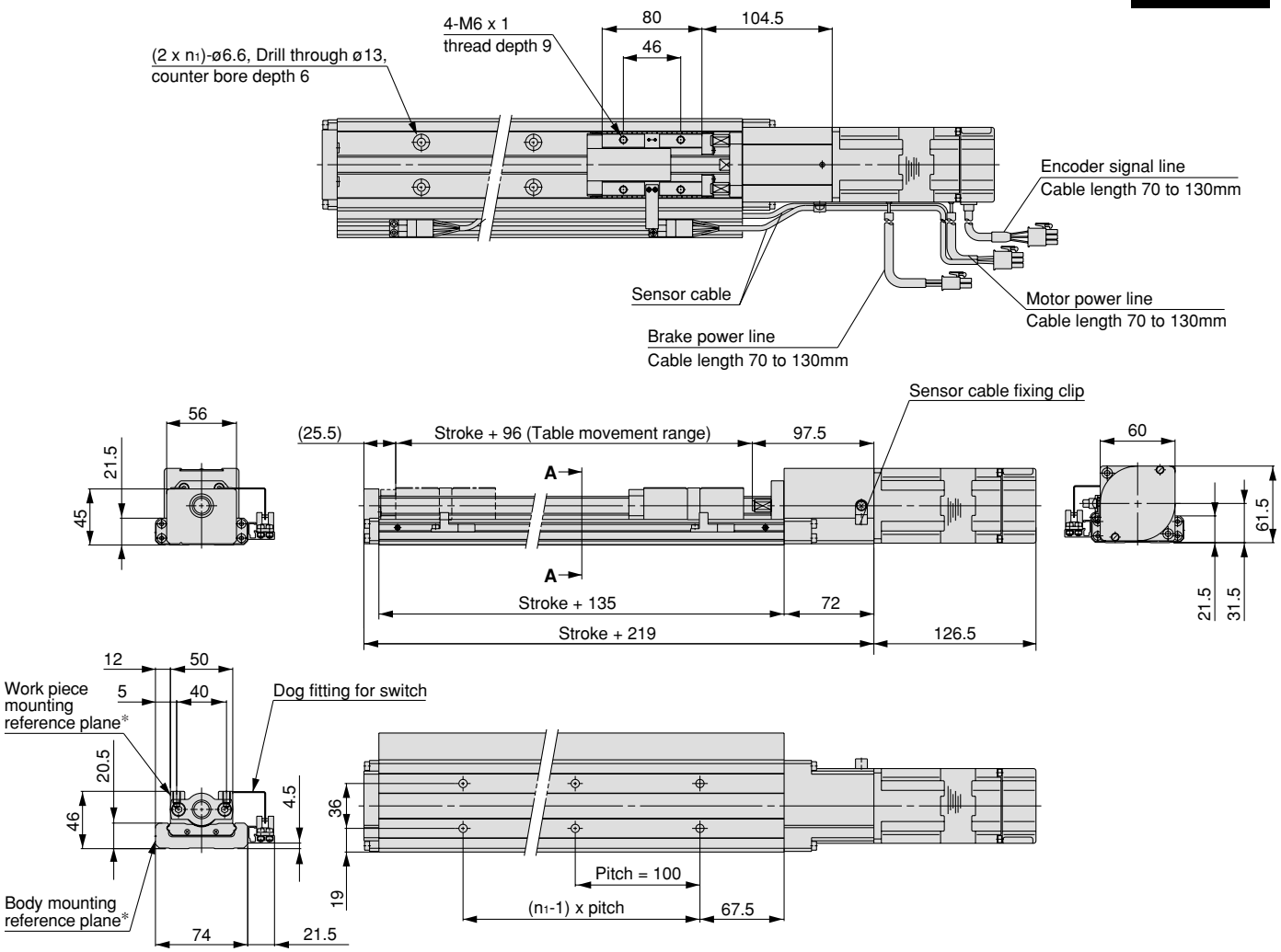
Mounting orientation / Load movement direction			LTF8
Pitching		Vertical	
Rolling		Vertical	

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/LTF8F□NL

Scale: 18%



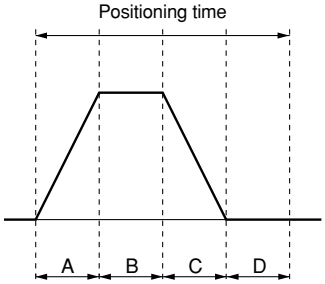
Model	Stroke	n_1
LTF8F□NL- 100K-□□	100	2
LTF8F□NL- 200K-□□	200	3
LTF8F□NL- 300K-□□	300	4
LTF8F□NL- 400K-□□	400	5
LTF8F□NL- 500K-□□	500	6
LTF8F□NL- 600K-□□	600	7
LTF8F□NL- 700K-□□	700	8
LTF8F□NL- 800K-□□	800	9
LTF8F□NL- 900K-□□	900	10
LTF8F□NL-1000K-□□	1000	11

∗ 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.)				
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

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/6mm lead

How to Order

LTF6 [G] [E] [1] [PF] — [Stroke] — [ ] [ ] — [X10]

Motor specification

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

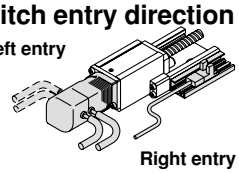
Power supply voltage

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

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.

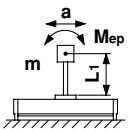
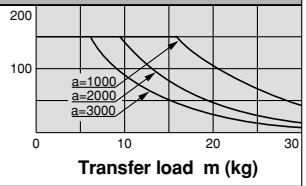
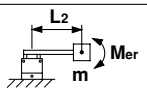
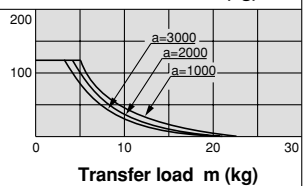
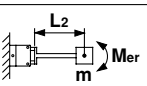
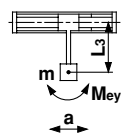
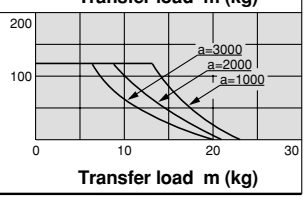
Dog fittings for switch are attached to all types except type "Nil".

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	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 ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

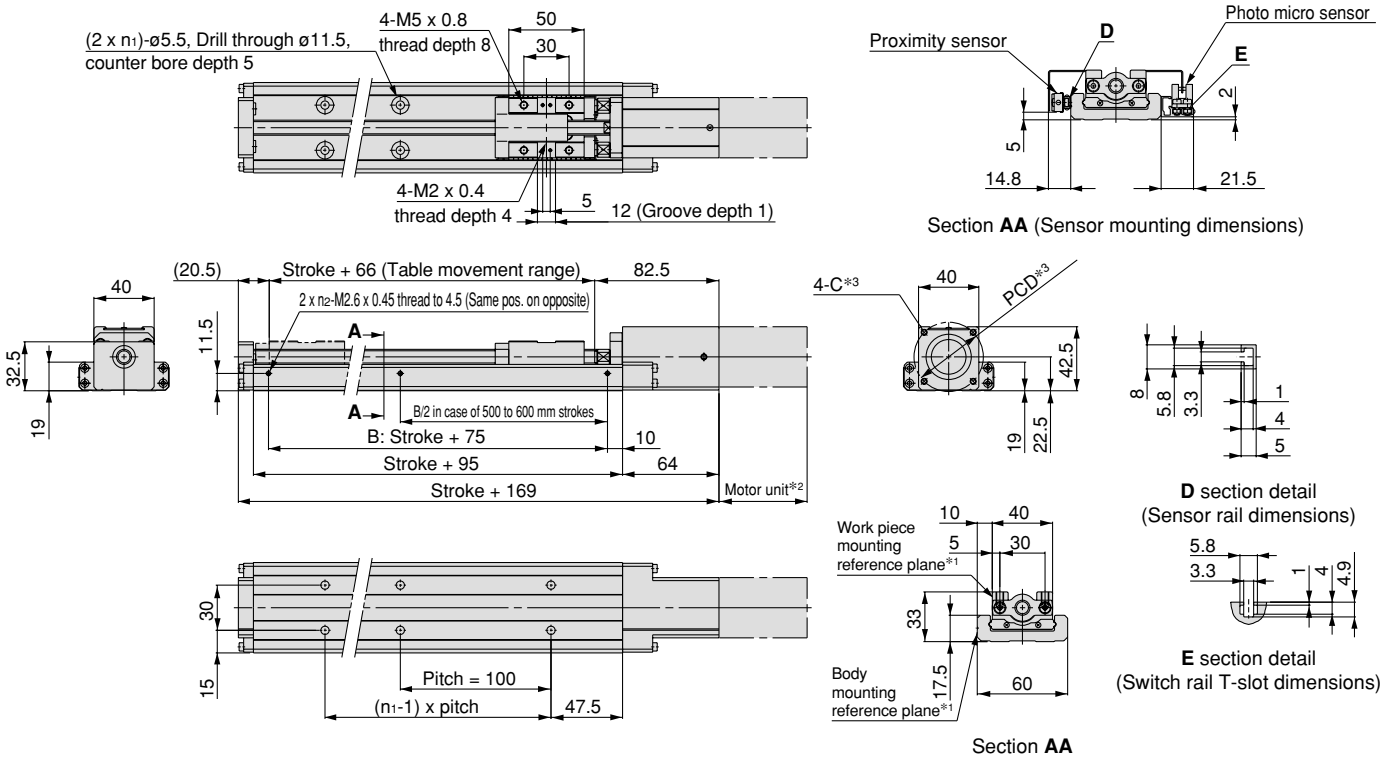
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6□E□PF(X10)

Scale: 20%



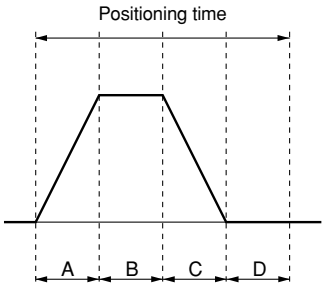
Model	Stroke	n_1	n_2
LTF6□E□PF- 100-□□-X10	100	2	1
LTF6□E□PF- 200-□□-X10	200	3	1
LTF6□E□PF- 300-□□-X10	300	4	1
LTF6□E□PF- 400-□□-X10	400	5	1
LTF6□E□PF- 500-□□-X10	500	6	2
LTF6□E□PF- 600-□□-X10	600	7	2

*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/s^2

* 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.

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/10mm lead

How to Order

LTF6 [G] [E] [1] [PH] — [Stroke] — [ ] [ ] — [X10]

Motor specification

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

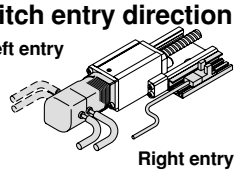
Power supply voltage

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

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.

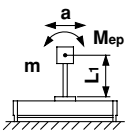
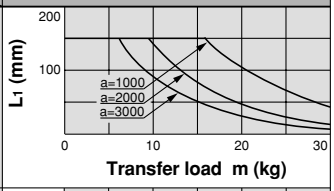
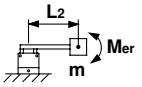
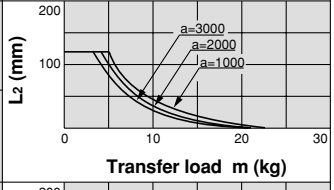
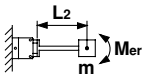
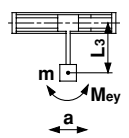
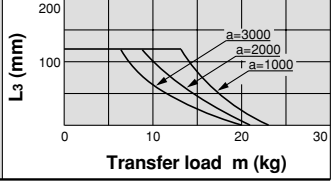
Dog fittings for switch are attached to all types except type "Nil".

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	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 ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

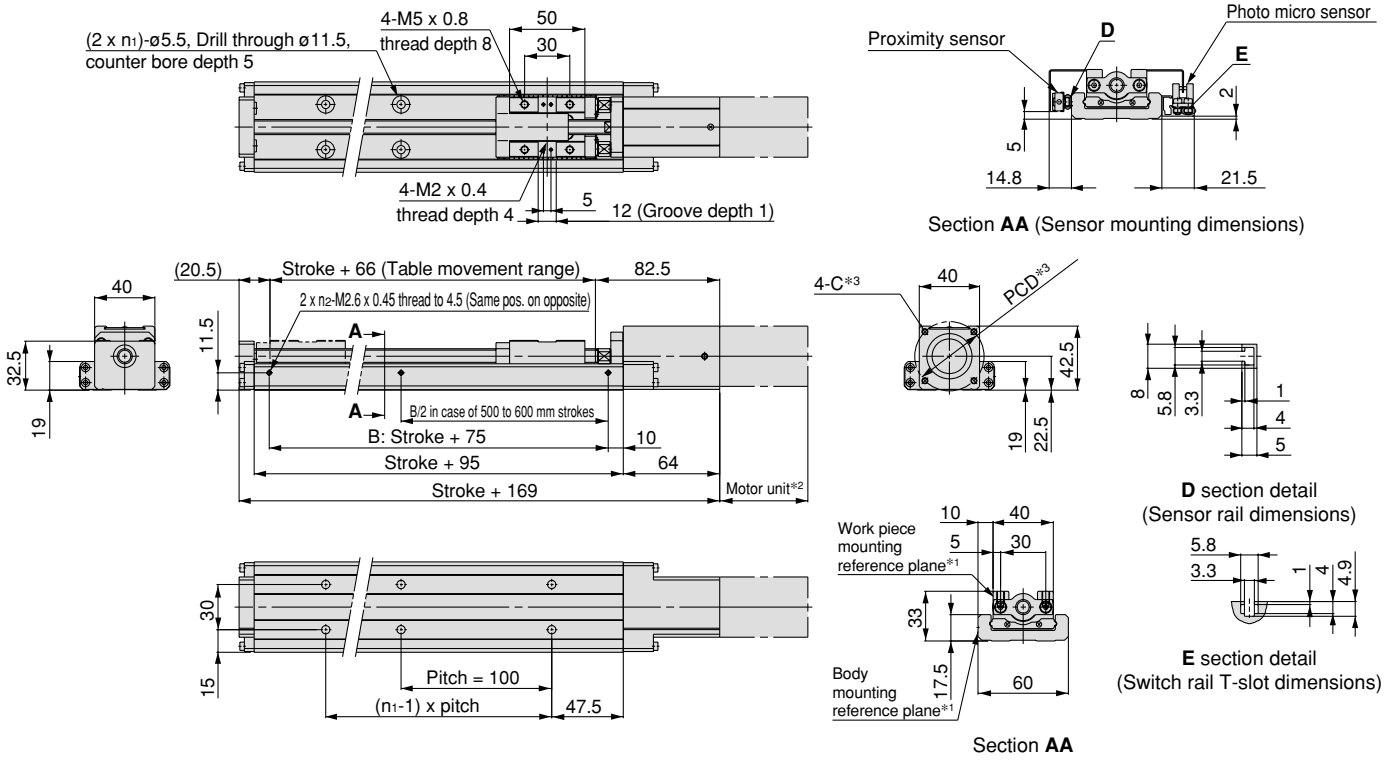
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6□E□PH(X10)

Scale: 20%



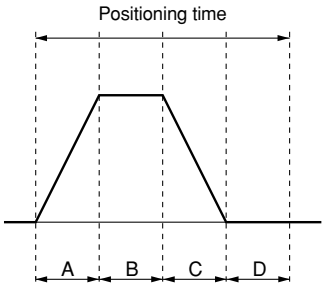
Model	Stroke	n_1	n_2
LTF6□E□PH- 100-□□-X10	100	2	1
LTF6□E□PH- 200-□□-X10	200	3	1
LTF6□E□PH- 300-□□-X10	300	4	1
LTF6□E□PH- 400-□□-X10	400	5	1
LTF6□E□PH- 500-□□-X10	500	6	2
LTF6□E□PH- 600-□□-X10	600	7	2

*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/s^2

∗ 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.

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/6mm lead

How to Order

LTF6 [G] [E] [1] [NF] — [Stroke] — [ ] [ ] — [X10]

Motor specification

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

Power supply voltage

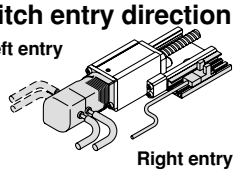
1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

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

Left entry



Right entry

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.

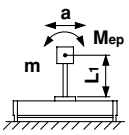
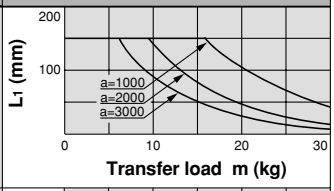
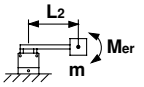
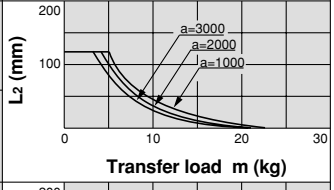
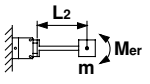
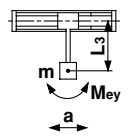
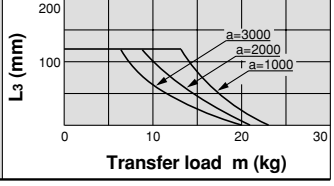
Dog fittings for switch are attached to all types except type "Nil".

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	30					
	Rated thrust	N	300					
	Maximum speed	mm/s	300					230
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W)					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

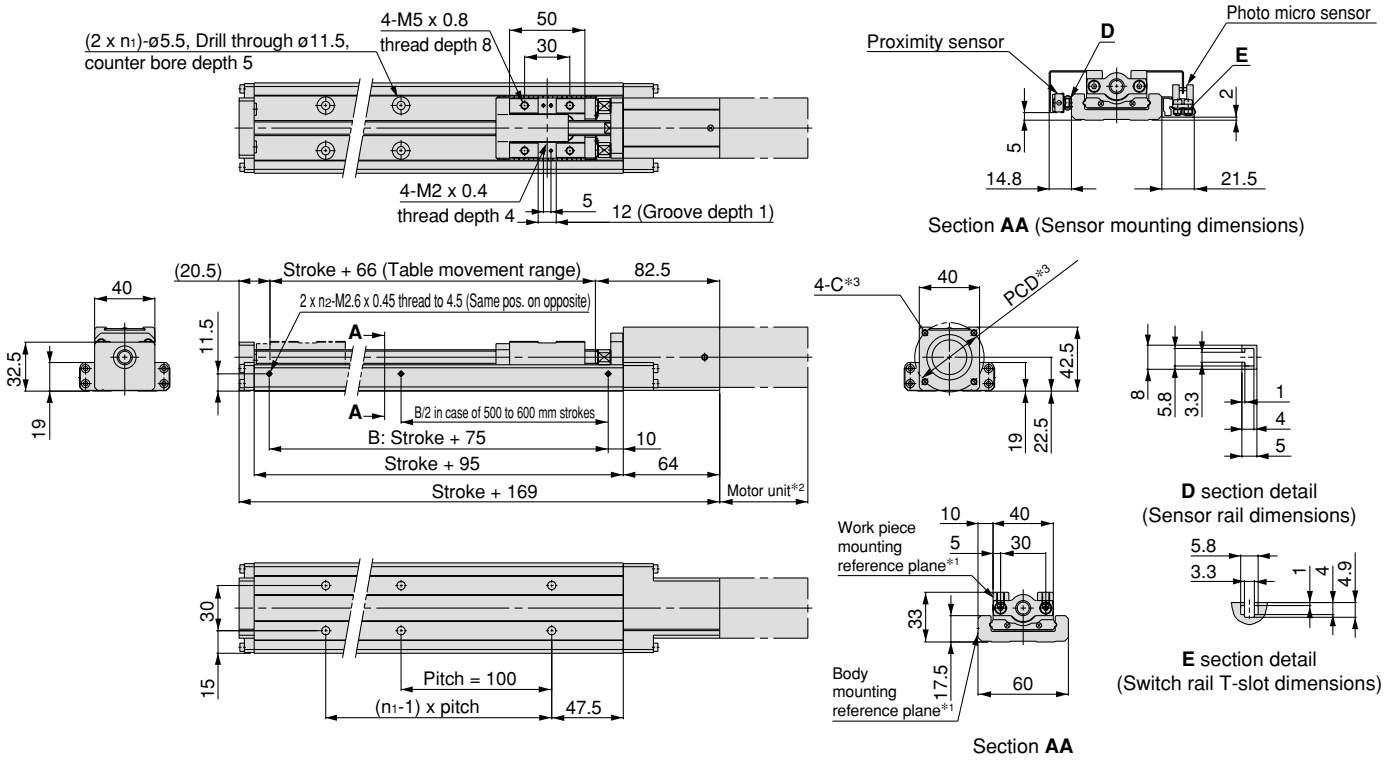
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6□E□NF(X10)

Scale: 20%



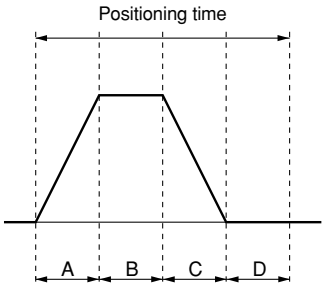
Model	Stroke	n_1	n_2
LTF6□E□NF- 100-□□-X10	100	2	1
LTF6□E□NF- 200-□□-X10	200	3	1
LTF6□E□NF- 300-□□-X10	300	4	1
LTF6□E□NF- 400-□□-X10	400	5	1
LTF6□E□NF- 500-□□-X10	500	6	2
LTF6□E□NF- 600-□□-X10	600	7	2

*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/s^2

* 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.

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/10mm lead

How to Order

LTF6 [G] [E] [1] [NH] — [Stroke] — [ ] [ ] — [X10]

Motor specification

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

Power supply voltage

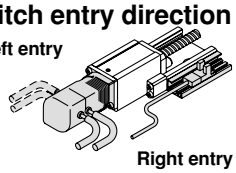
1	100/115V AC (50/60Hz)
2	200/230V AC (50/60Hz)
0	Without motor

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

Left entry



Right entry

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.

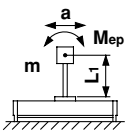
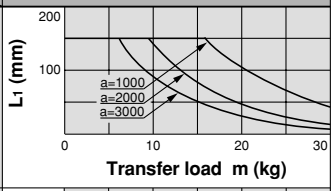
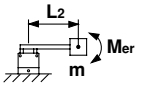
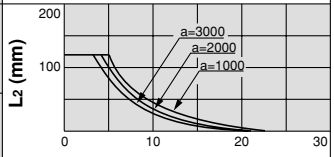
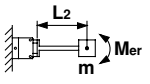
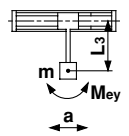
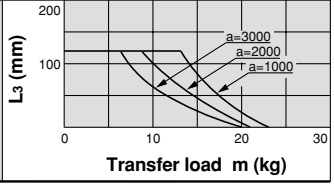
Dog fittings for switch are attached to all types except type "Nil".

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	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 ø10mm, 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

Mounting orientation / Load movement direction		Model	LTF6
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

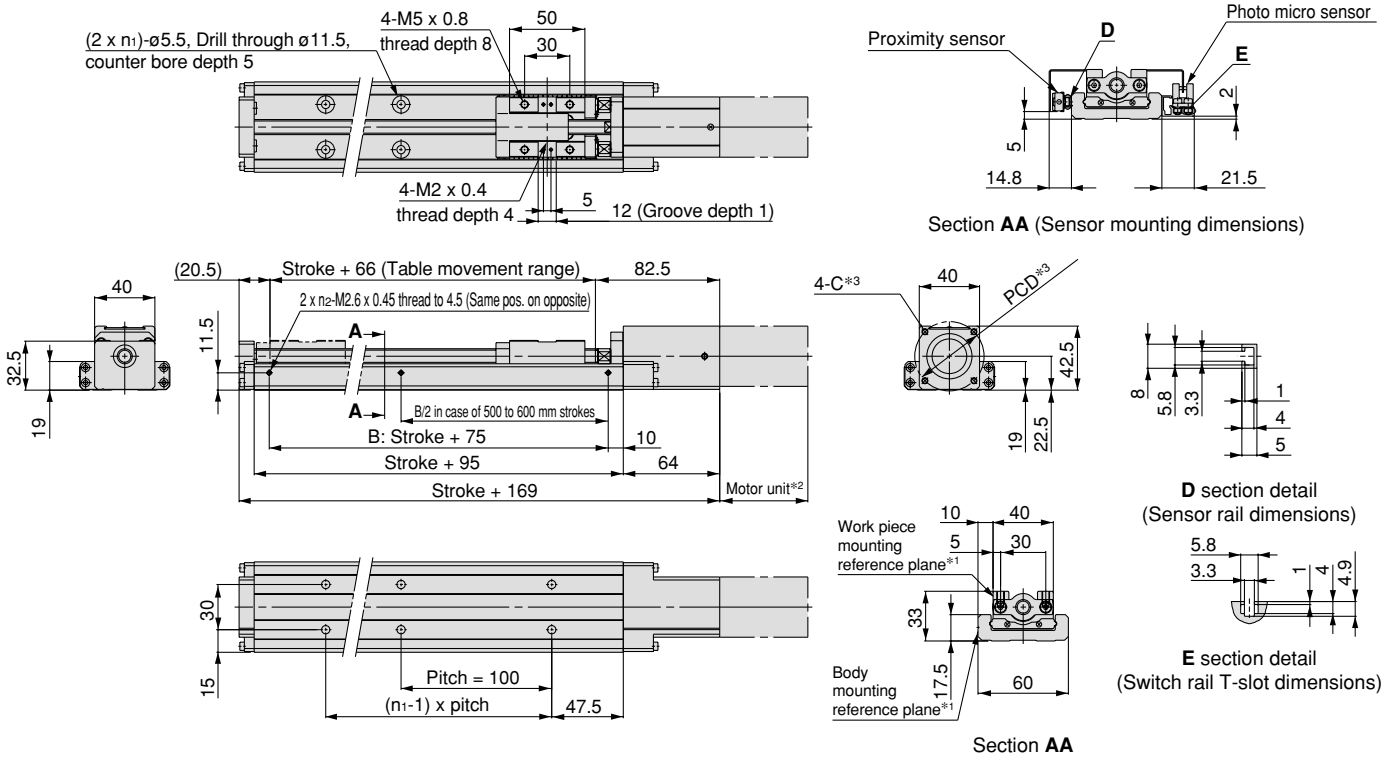
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

Dimensions/LTF6□E□NH(X10)

Scale: 20%



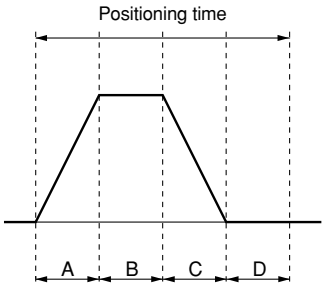
Model	Stroke	n_1	n_2
LTF6□E□NH- 100-□□-X10	100	2	1
LTF6□E□NH- 200-□□-X10	200	3	1
LTF6□E□NH- 300-□□-X10	300	4	1
LTF6□E□NH- 400-□□-X10	400	5	1
LTF6□E□NH- 500-□□-X10	500	6	2
LTF6□E□NH- 600-□□-X10	600	7	2

*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/s^2

∗ 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.

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/10mm lead

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

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

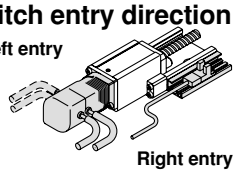
Switch specifications

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".

Motor/switch entry direction

Left entry / Right entry

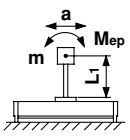
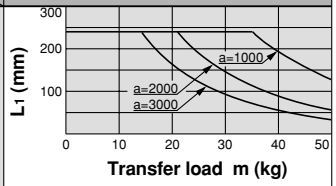
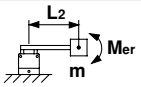
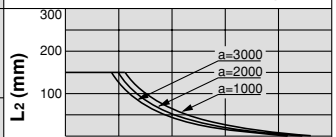
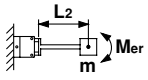
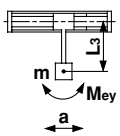
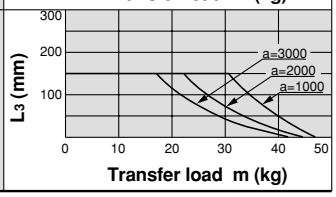


Specifications

	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 ø15mm, 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

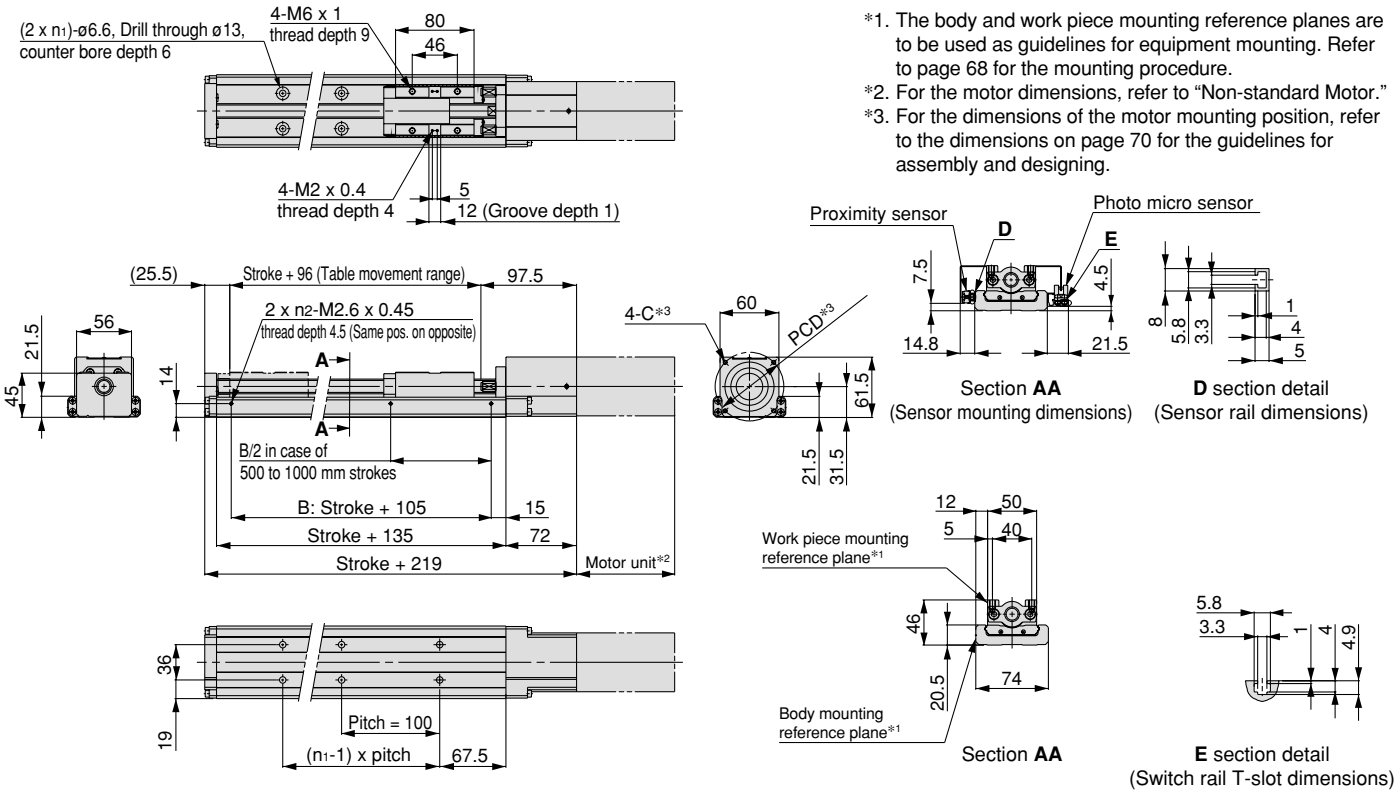
Mounting orientation / Load movement direction		Model	LTF8
Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

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.

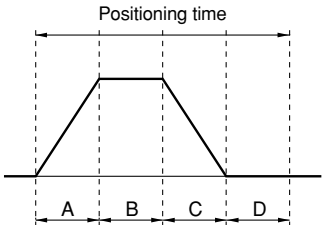
Model	Stroke	n_1	n_2
LTF8□F□PH- 100-□□-X10	100	2	1
LTF8□F□PH- 200-□□-X10	200	3	1
LTF8□F□PH- 300-□□-X10	300	4	1
LTF8□F□PH- 400-□□-X10	400	5	1
LTF8□F□PH- 500-□□-X10	500	6	2

Model	Stroke	n_1	n_2
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.

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/20mm lead

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

Motor/switch entry direction

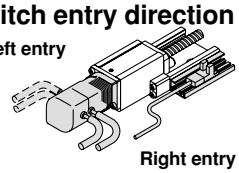
Nil	Without motor, switch and switch rail
R	Motor straight, motor cable, switch and switch rail located on the right
L	Motor straight, motor cable, switch and switch rail located on the left

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".

Motor/switch entry direction



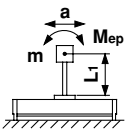
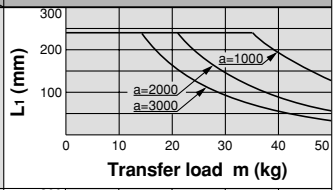
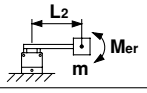
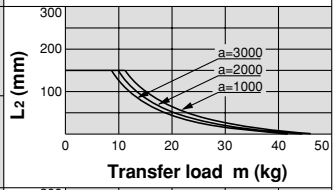
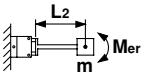
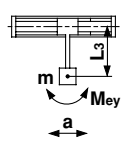
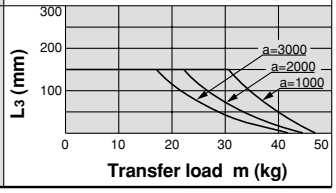
Specifications

	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 ø15mm, 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

Mounting orientation / Load movement direction \ Model: LTF8

Pitching		Horizontal/Lateral	
Rolling		Horizontal	
		Lateral	
Yawing		Horizontal/Lateral	

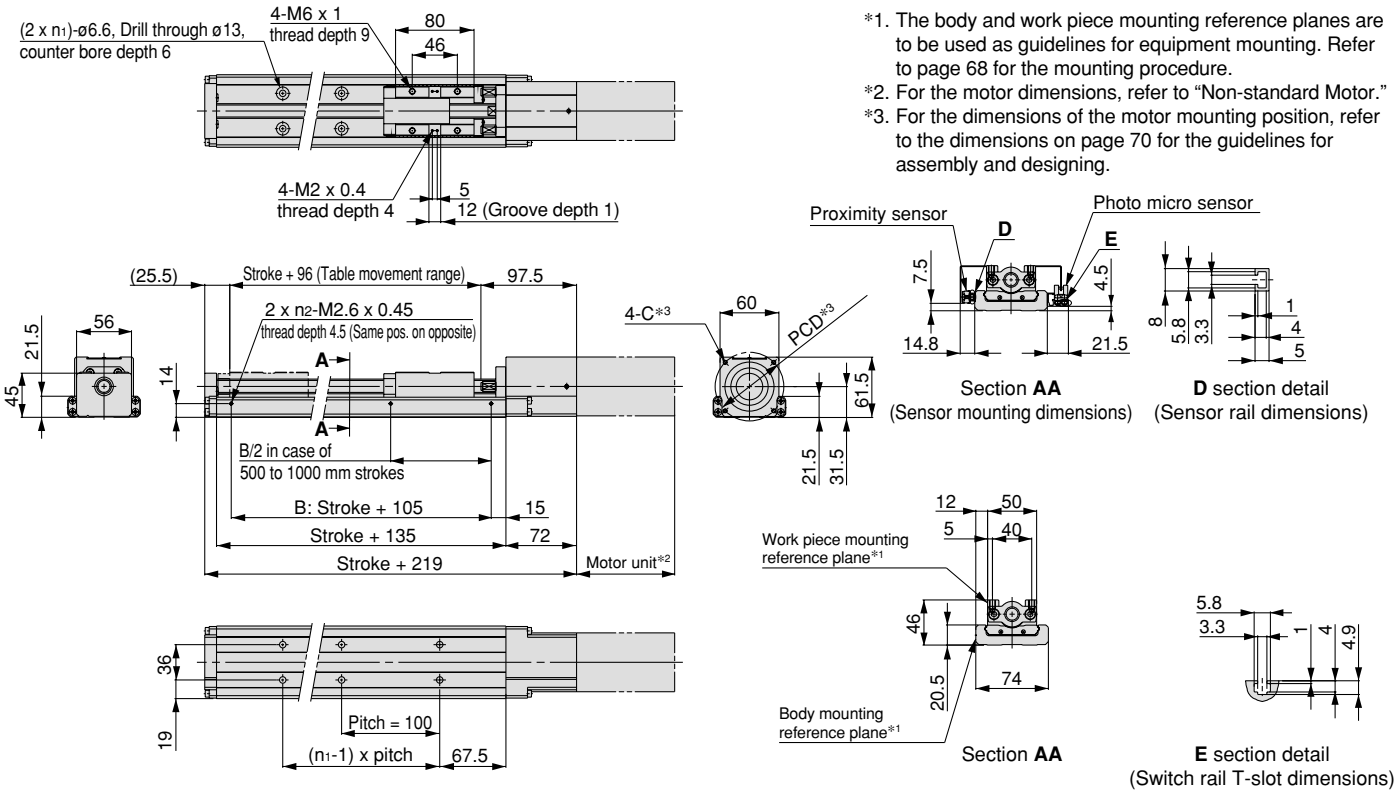
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

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.

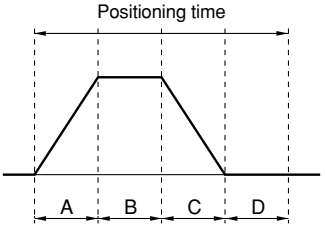
Model	Stroke	n_1	n_2
LTF8□F□PL- 100-□□-X10	100	2	1
LTF8□F□PL- 200-□□-X10	200	3	1
LTF8□F□PL- 300-□□-X10	300	4	1
LTF8□F□PL- 400-□□-X10	400	5	1
LTF8□F□PL- 500-□□-X10	500	6	2

Model	Stroke	n_1	n_2
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.)				
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/s^2

∗ 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.

Series LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/10mm lead

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

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

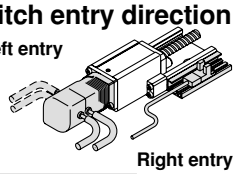
Switch specifications

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".

Motor/switch entry direction

Left entry / Right entry



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 ø15mm, 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.)									

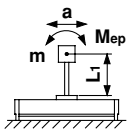
Allowable Moment (N·m)

Allowable dynamic moment

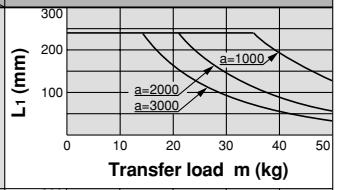
Mounting orientation / Model / Load movement direction

LTF8

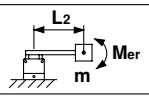
Pitching



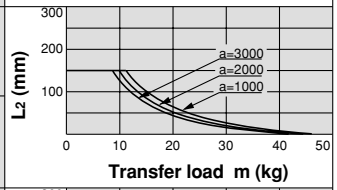
Horizontal/Lateral

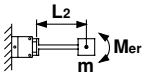


Rolling



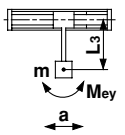
Horizontal



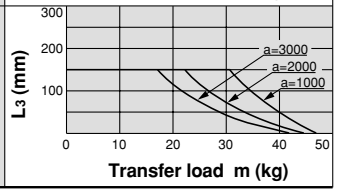


Lateral

Yawing



Horizontal/Lateral

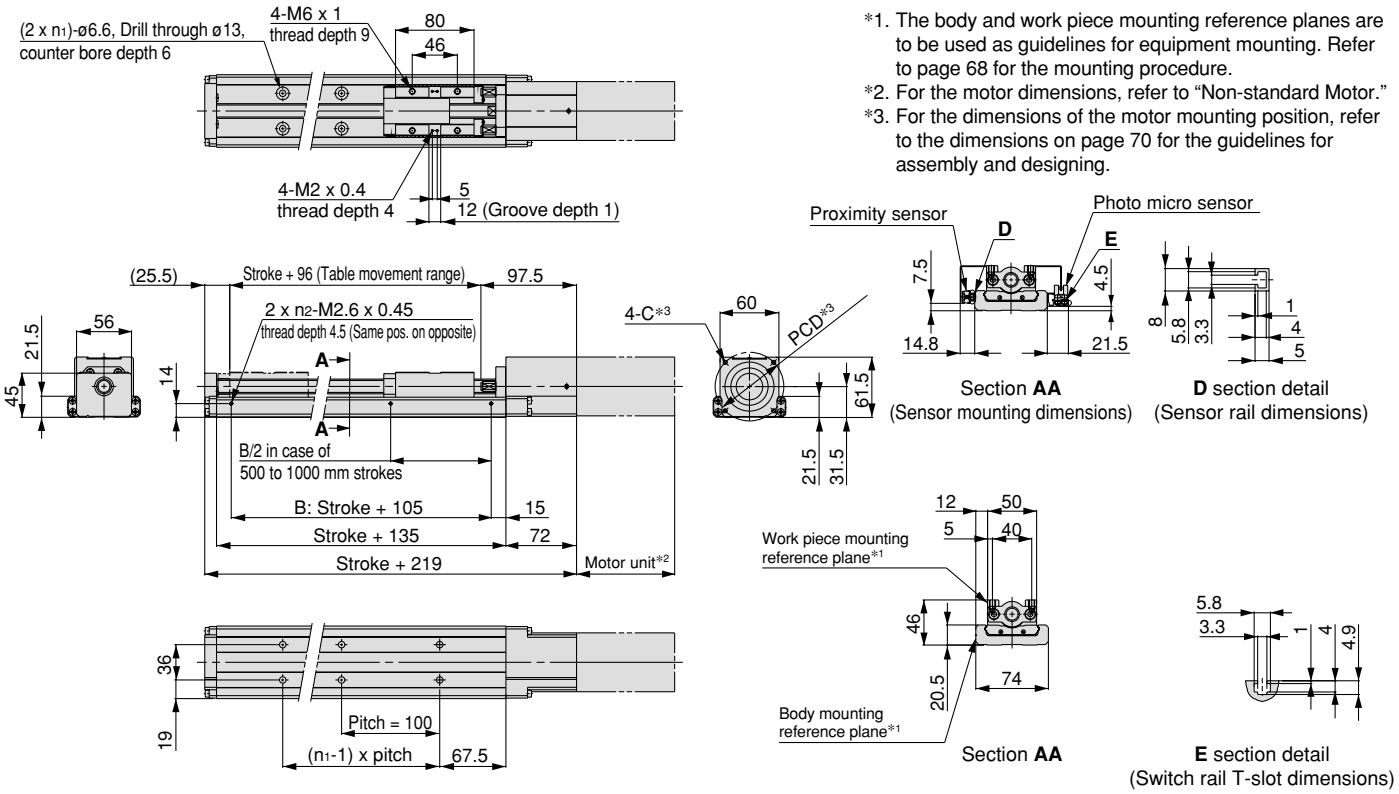


m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

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.

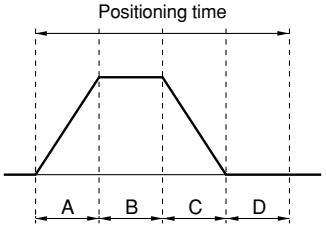
Model	Stroke	n_1	n_2
LTF8□F□NH- 100-□□-X10	100	2	1
LTF8□F□NH- 200-□□-X10	200	3	1
LTF8□F□NH- 300-□□-X10	300	4	1
LTF8□F□NH- 400-□□-X10	400	5	1
LTF8□F□NH- 500-□□-X10	500	6	2

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.)				
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/s^2

∗ 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.

Series LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/20mm lead

How to Order

LTF8 [G] F [1] [NL] — [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

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

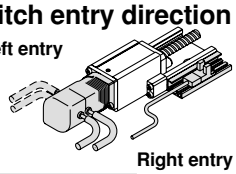
Switch specifications

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".

Motor/switch entry direction

Left entry / Right entry



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 ø15mm, 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.)									

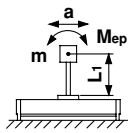
Allowable Moment (N·m)

Allowable dynamic moment

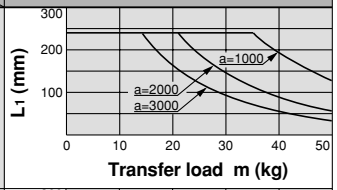
Mounting orientation / Load movement direction \ Model

LTF8

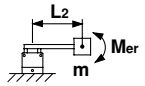
Pitching



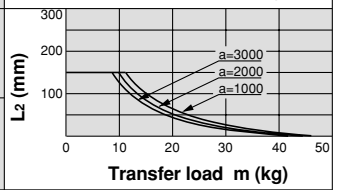
Horizontal/Lateral

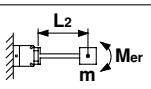


Rolling



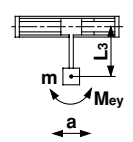
Horizontal



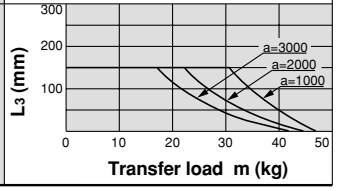


Lateral

Yawing



Horizontal/Lateral



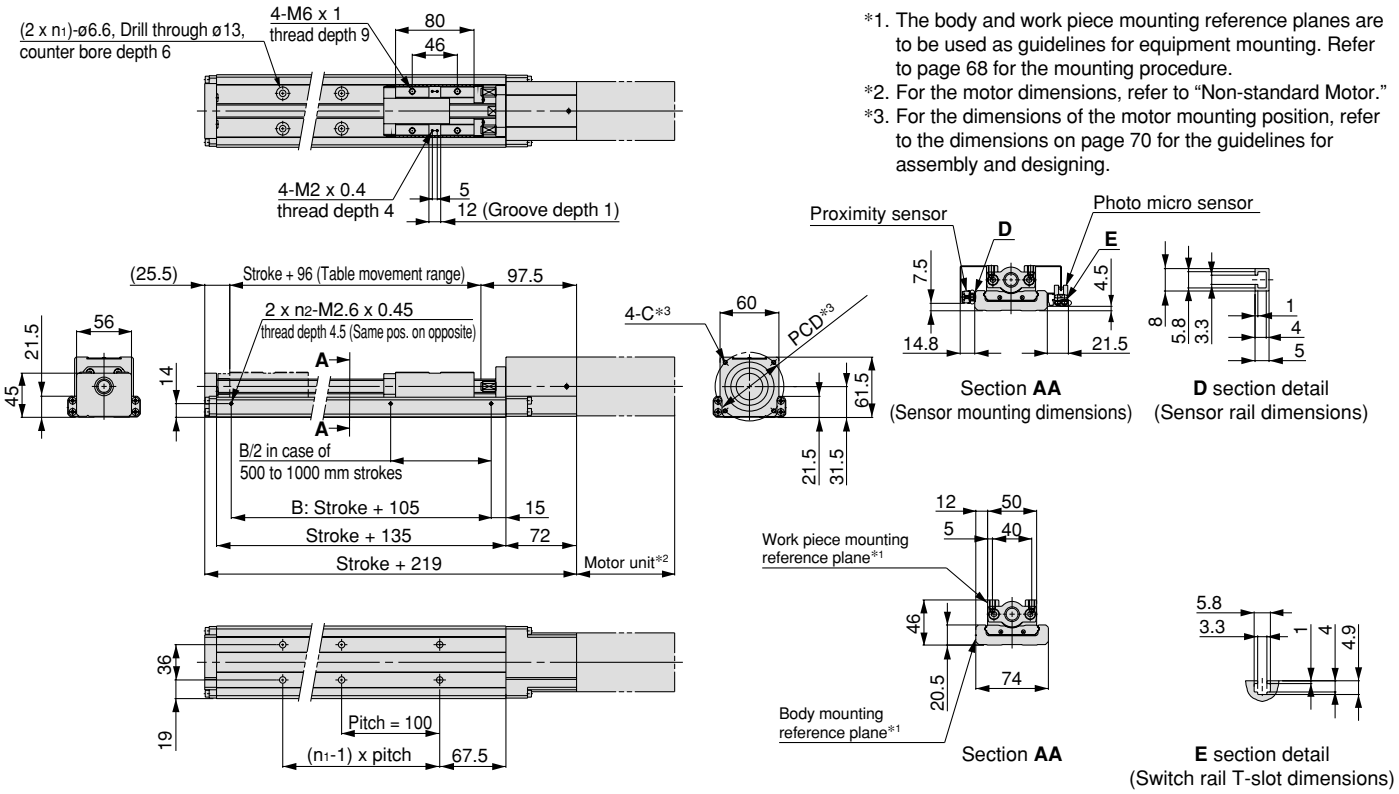
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Allowable dynamic moment
L : Overhang to work piece center of gravity (mm)

Refer to page 71 for deflection data.

SMC

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.

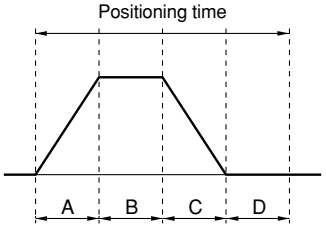
Model	Stroke	n_1	n_2
LTF8□F□NL- 100-□□-X10	100	2	1
LTF8□F□NL- 200-□□-X10	200	3	1
LTF8□F□NL- 300-□□-X10	300	4	1
LTF8□F□NL- 400-□□-X10	400	5	1
LTF8□F□NL- 500-□□-X10	500	6	2

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.)				
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/s^2

∗ 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.

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/6mm lead

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

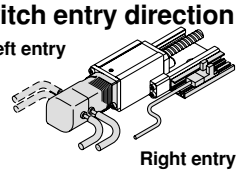
Power supply voltage

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.

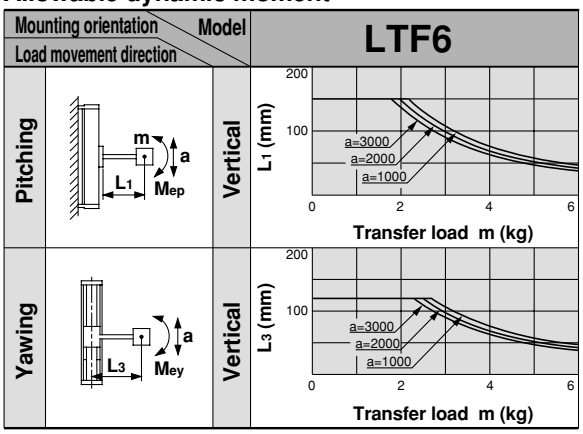
Dog fittings for switch are attached to all types except type "Nil".

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					230
	Positioning repeatability	mm	±0.02					
Main parts	Motor		AC servomotor (100W) with brake					
	Encoder		Incremental system					
	Lead screw		Ground ball screw ø10mm, 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

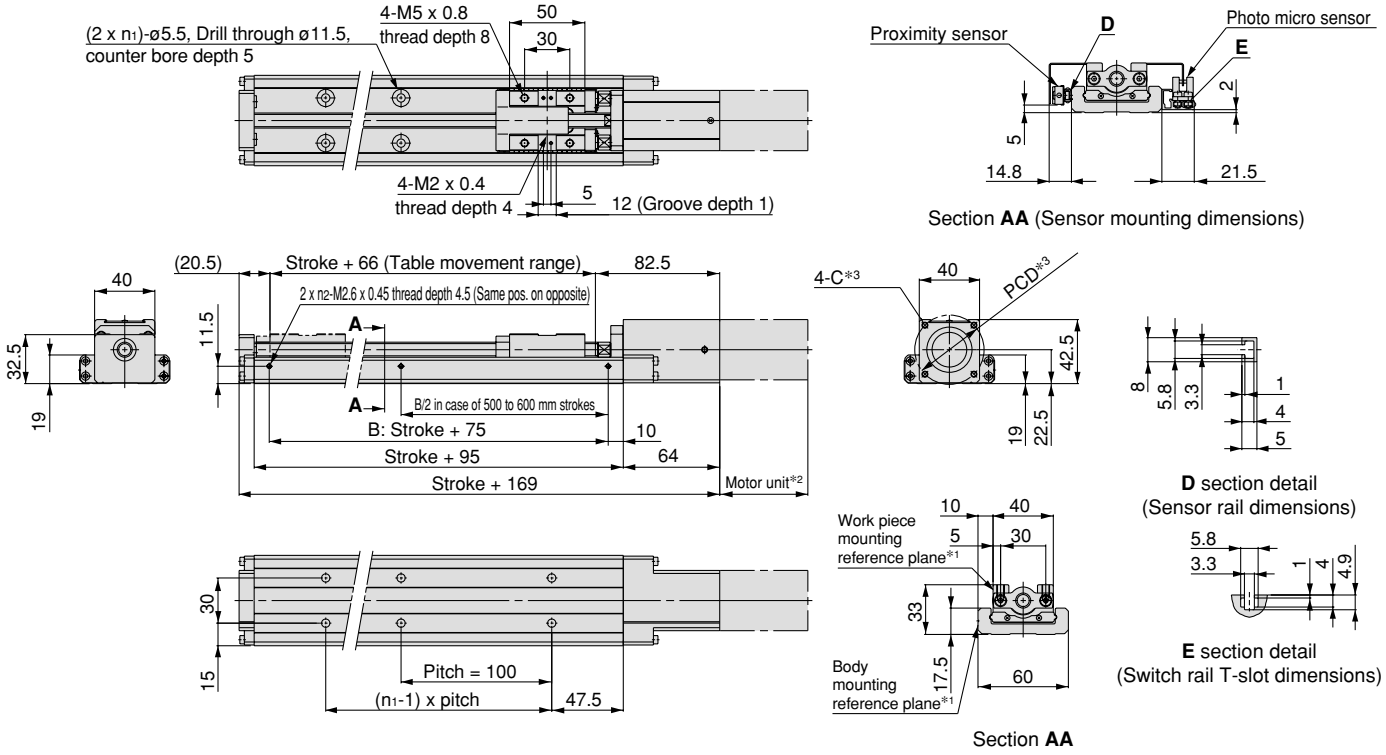
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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%



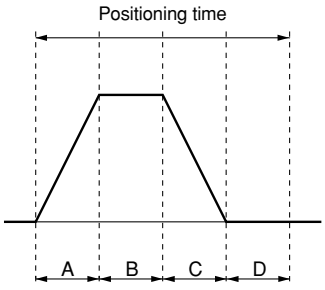
Model	Stroke	n_1	n_2
LTF6□E□PF- 100K-□□-X10	100	2	1
LTF6□E□PF- 200K-□□-X10	200	3	1
LTF6□E□PF- 300K-□□-X10	300	4	1
LTF6□E□PF- 400K-□□-X10	400	5	1
LTF6□E□PF- 500K-□□-X10	500	6	2
LTF6□E□PF- 600K-□□-X10	600	7	2

*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/s^2

∗ 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.

Series LTF6

Motor Output 100W

Ground Ball Screw ø10mm/10mm lead

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

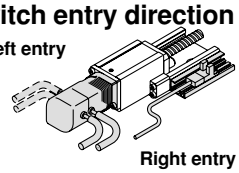
Power supply voltage

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

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.

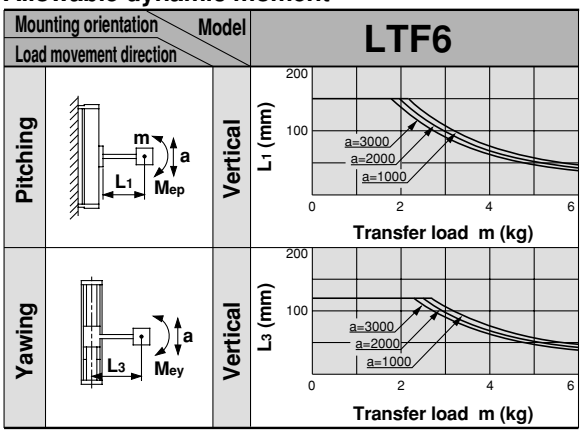
Dog fittings for switch are attached to all types except type "Nil".

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	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 ø10mm, 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)
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.

Regenerative Absorption Unit Selection Guide

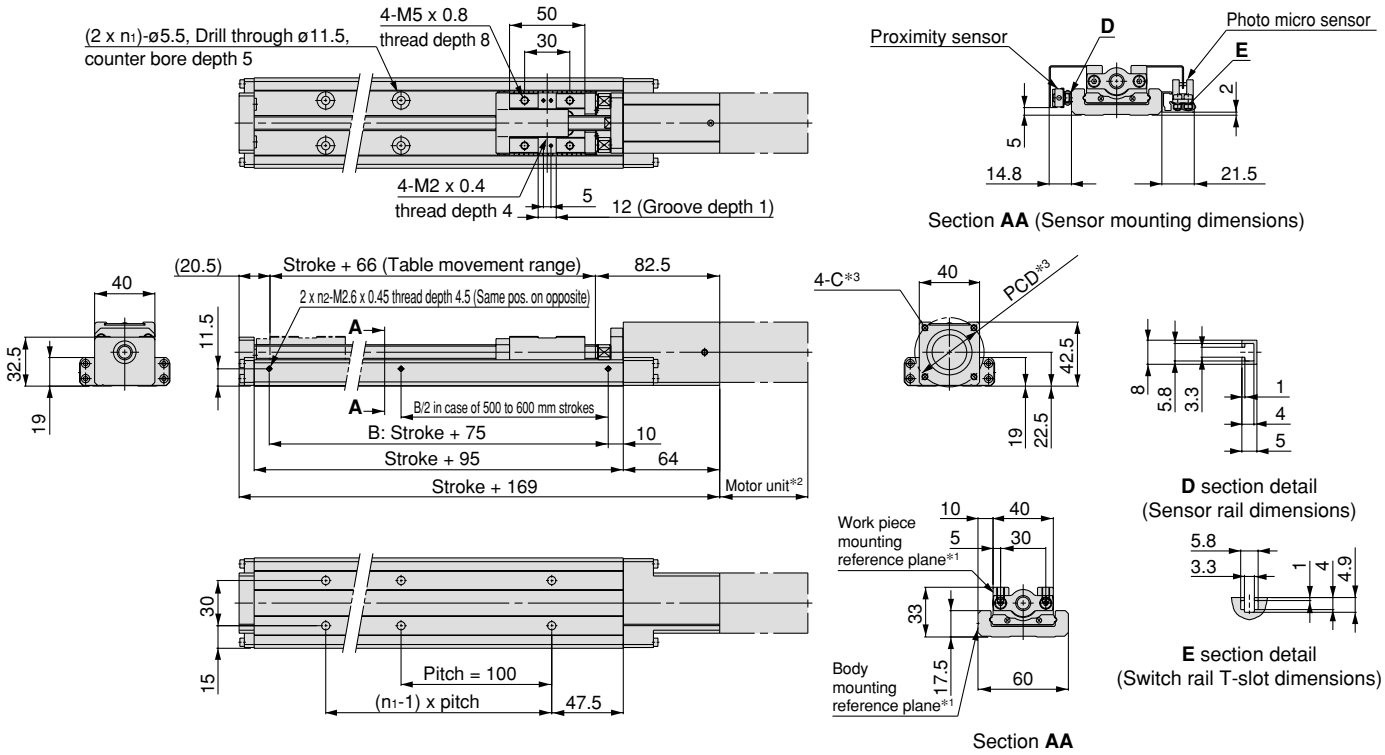
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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%



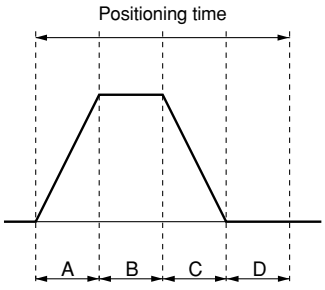
Model	Stroke	n_1	n_2
LTF6□E□PH- 100K-□□-X10	100	2	1
LTF6□E□PH- 200K-□□-X10	200	3	1
LTF6□E□PH- 300K-□□-X10	300	4	1
LTF6□E□PH- 400K-□□-X10	400	5	1
LTF6□E□PH- 500K-□□-X10	500	6	2
LTF6□E□PH- 600K-□□-X10	600	7	2

*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.

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/6mm lead

How to Order

LTF6 G E 1 NF — 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

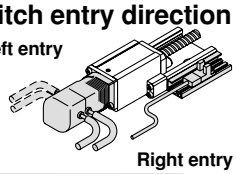
Switch specifications

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".

Motor/switch entry direction

Left entry



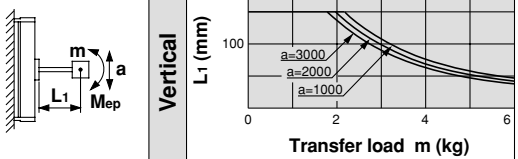
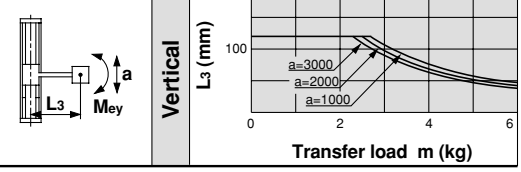
Right entry

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					230
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W) with brake					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

Mounting orientation / Load movement direction	Model	LTF6
Pitching	Vertical	
Yawing	Vertical	

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.

Regenerative Absorption Unit Selection Guide

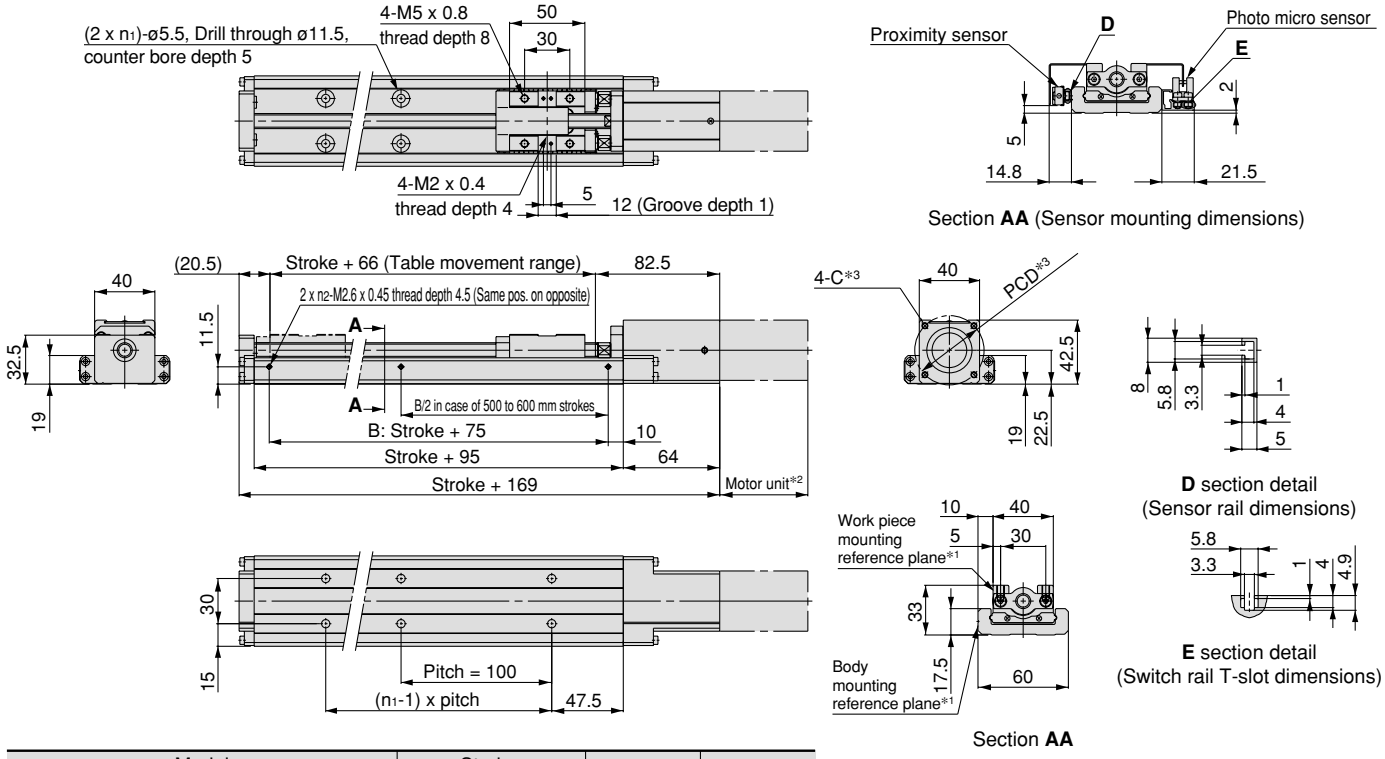
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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%



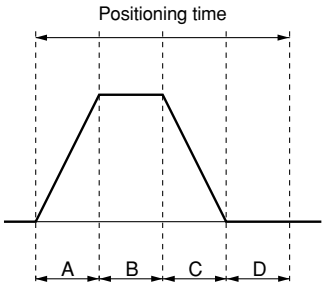
Model	Stroke	n_1	n_2
LTF6□E□NF- 100K-□□-X10	100	2	1
LTF6□E□NF- 200K-□□-X10	200	3	1
LTF6□E□NF- 300K-□□-X10	300	4	1
LTF6□E□NF- 400K-□□-X10	400	5	1
LTF6□E□NF- 500K-□□-X10	500	6	2
LTF6□E□NF- 600K-□□-X10	600	7	2

*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/s^2

* 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.

Series LTF6

Motor Output 100W

Rolled Ball Screw ø10mm/10mm lead

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

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

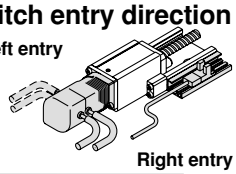
Switch specifications

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".

Motor/switch entry direction

Left entry



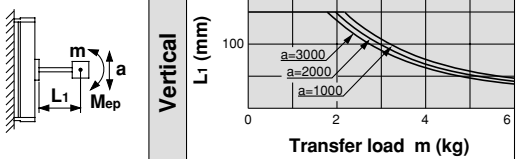
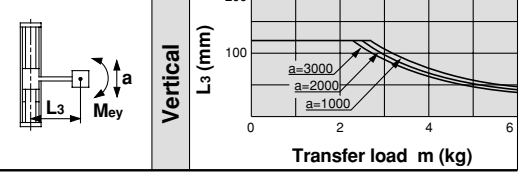
Right entry

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					390
	Positioning repeatability	mm	±0.05					
Main parts	Motor		AC servomotor (100W) with brake					
	Encoder		Incremental system					
	Lead screw		Rolled ball screw ø10mm, 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

Mounting orientation / Load movement direction	Model	LTF6
Pitching	Vertical	
Yawing	Vertical	

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.

Regenerative Absorption Unit Selection Guide

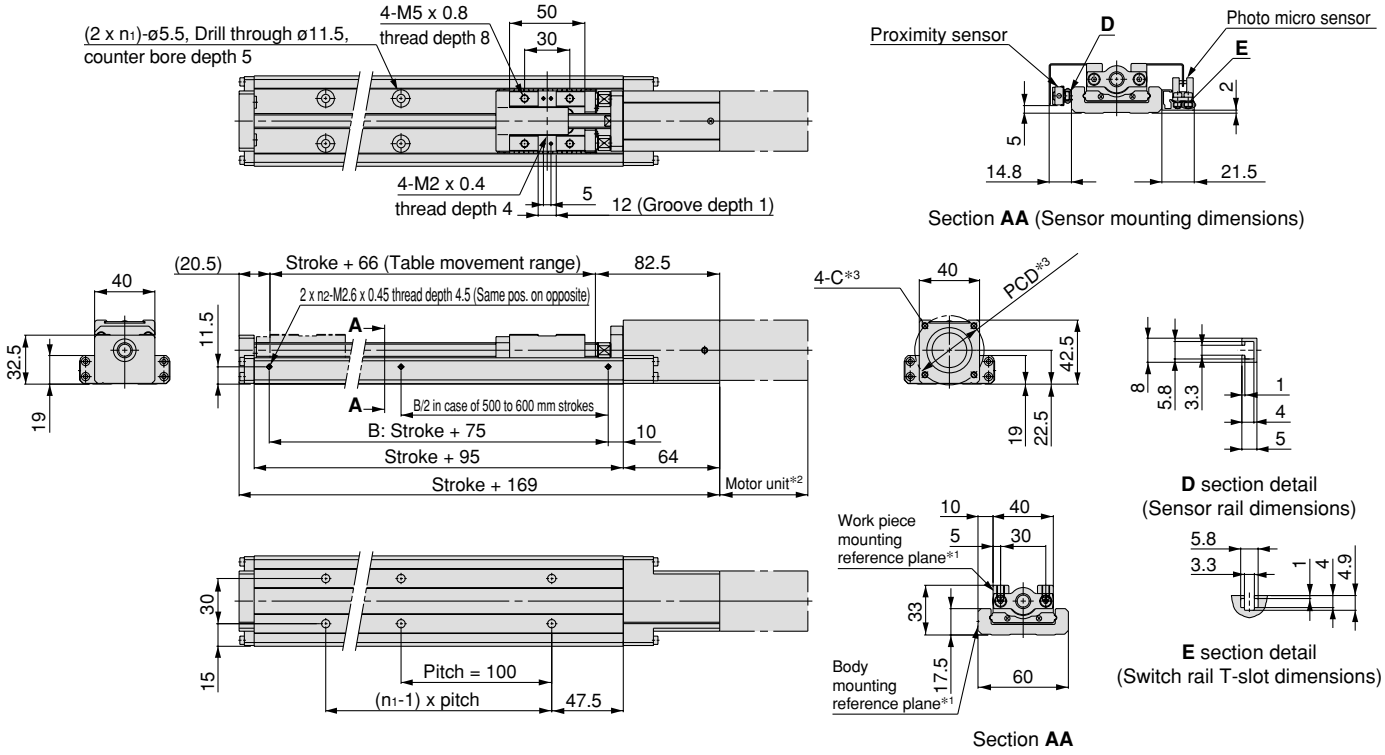
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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%



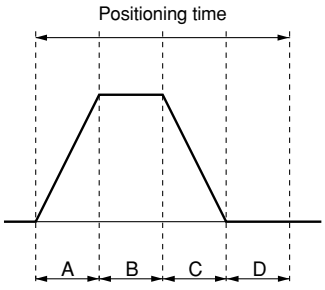
Model	Stroke	n_1	n_2
LTF6□E□NH- 100K-□□-X10	100	2	1
LTF6□E□NH- 200K-□□-X10	200	3	1
LTF6□E□NH- 300K-□□-X10	300	4	1
LTF6□E□NH- 400K-□□-X10	400	5	1
LTF6□E□NH- 500K-□□-X10	500	6	2
LTF6□E□NH- 600K-□□-X10	600	7	2

*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.

Series LTF8

Motor Output 200W

Ground Ball Screw ø15mm/10mm lead

How to Order

LTF8 [G] F [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

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

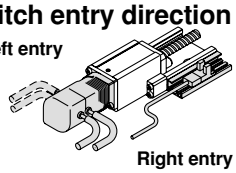
Switch specifications

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".

Motor/switch entry direction

Left entry / Right entry

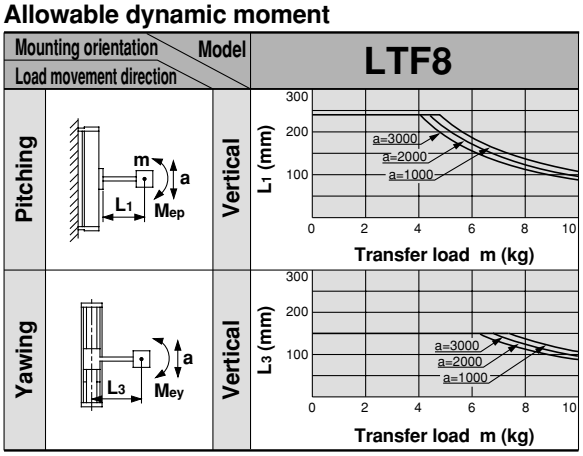


Specifications

	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 ø15mm, 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

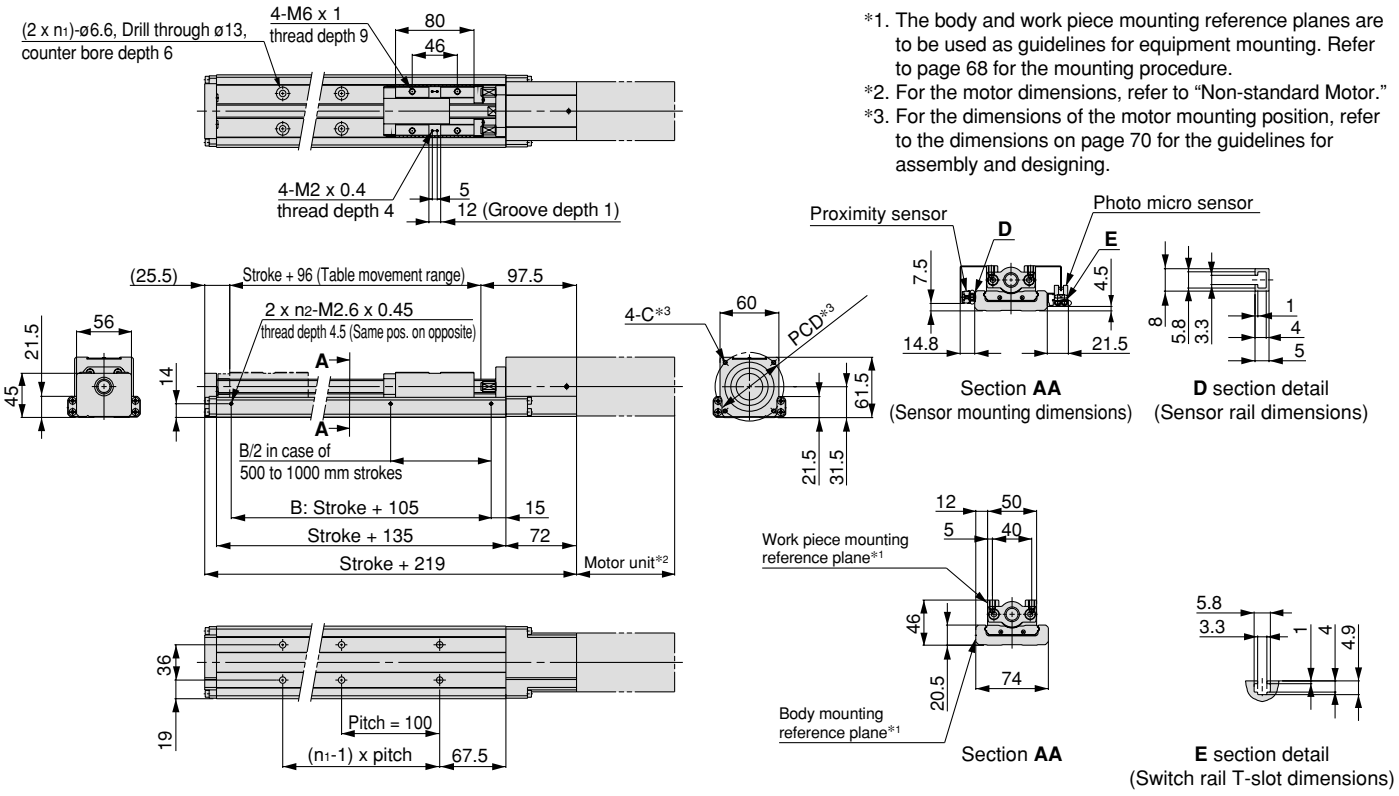
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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.

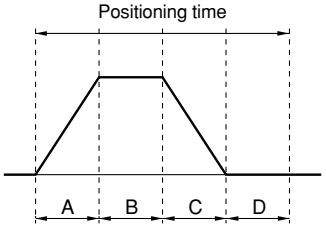
Model	Stroke	n_1	n_2
LTF8□F□PH- 100K-□□-X10	100	2	1
LTF8□F□PH- 200K-□□-X10	200	3	1
LTF8□F□PH- 300K-□□-X10	300	4	1
LTF8□F□PH- 400K-□□-X10	400	5	1
LTF8□F□PH- 500K-□□-X10	500	6	2

Model	Stroke	n_1	n_2
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/s^2

∗ 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 LTF8

Motor Output 200W

Ground Ball Screw ø15mm/20mm lead

How to Order

LTF8 [G] F [1] [PL] — [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

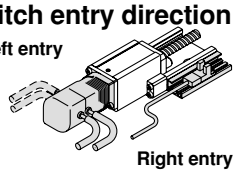
Switch specifications

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".

Motor/switch entry direction

Left entry / Right entry

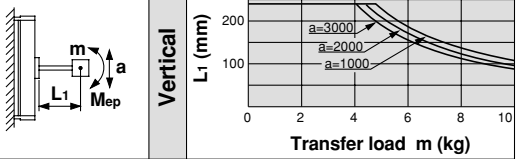
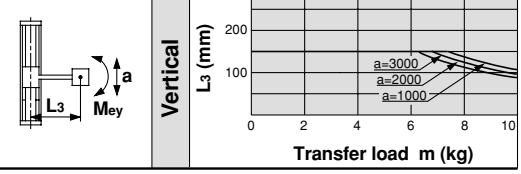


Specifications

	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 ø15mm, 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

Mounting orientation / Load movement direction	Model	LTF8
Pitching	Vertical	
Yawing	Vertical	

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.

Regenerative Absorption Unit Selection Guide

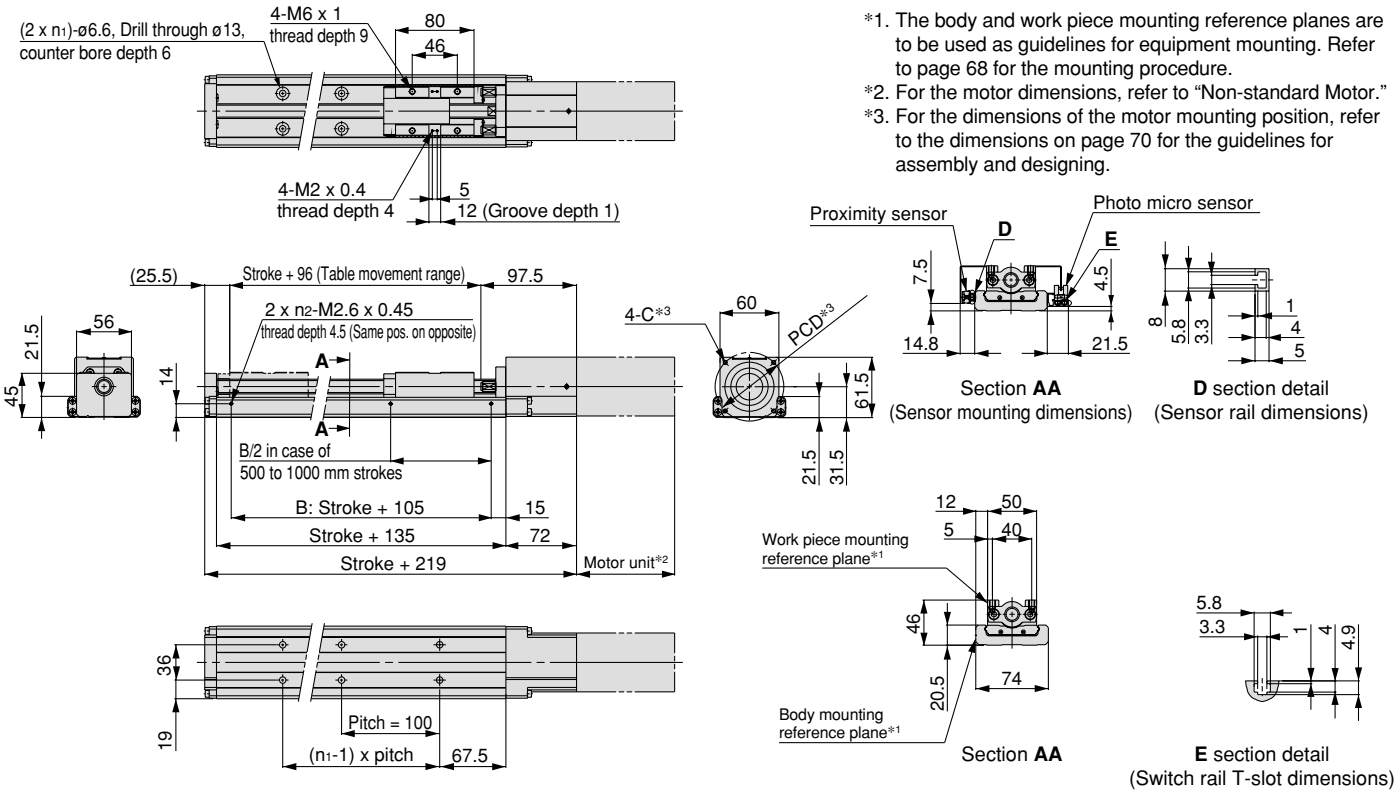
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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.

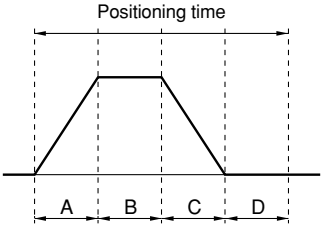
Model	Stroke	n_1	n_2
LTF8□F□PL- 100K-□□-X10	100	2	1
LTF8□F□PL- 200K-□□-X10	200	3	1
LTF8□F□PL- 300K-□□-X10	300	4	1
LTF8□F□PL- 400K-□□-X10	400	5	1
LTF8□F□PL- 500K-□□-X10	500	6	2

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/s^2

∗ 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 LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/10mm lead

How to Order

LTF8 [G] F [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

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

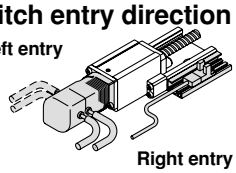
Switch specifications

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".

Motor/switch entry direction

Left entry



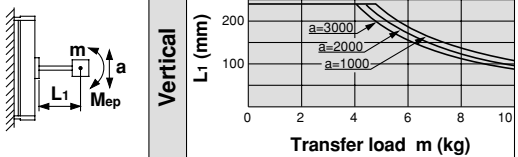
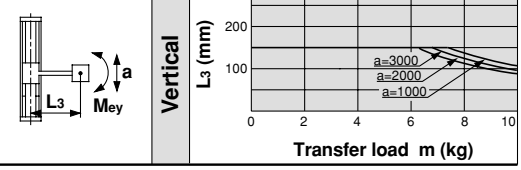
Right entry

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 ø15mm, 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

Mounting orientation / Load movement direction	Model	LTF8
Pitching	Vertical	
Yawing	Vertical	

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

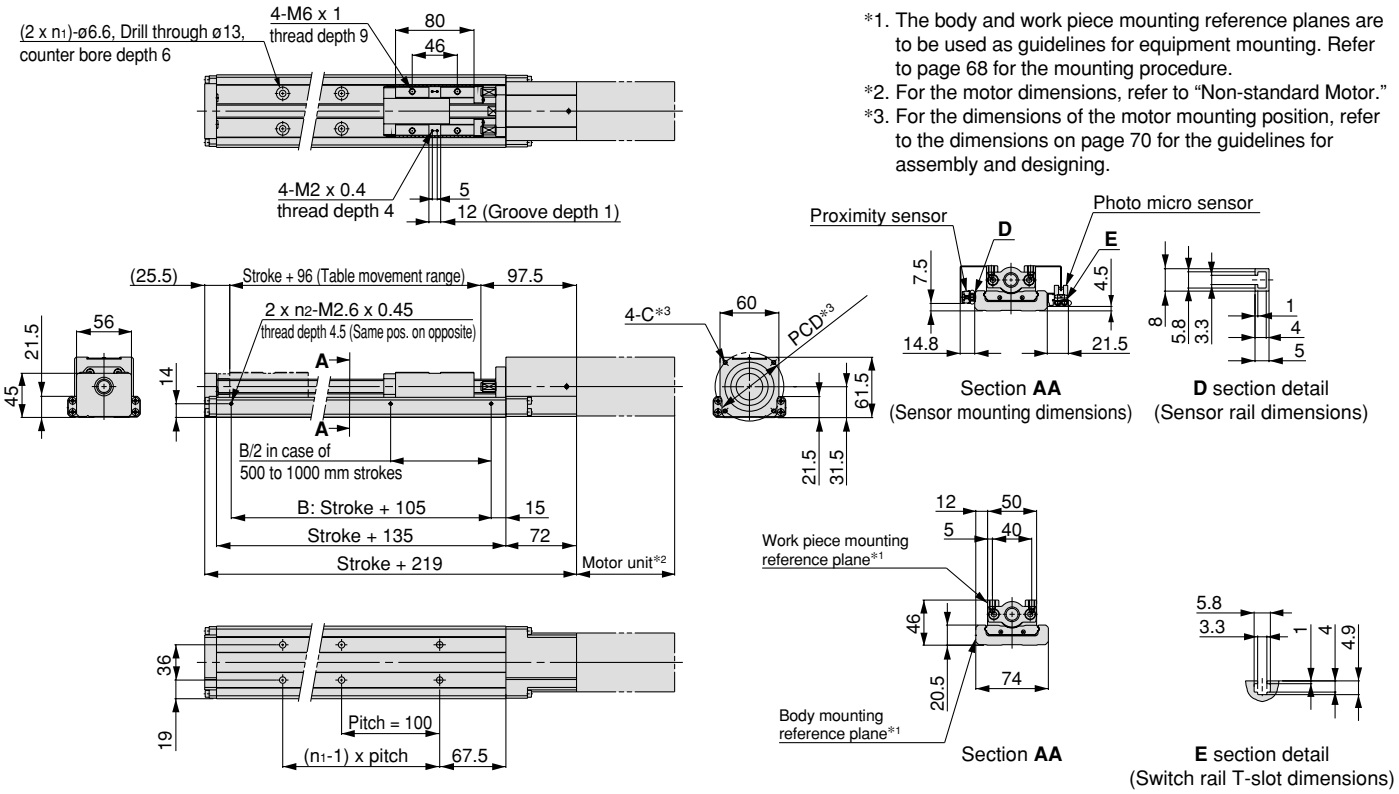
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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.

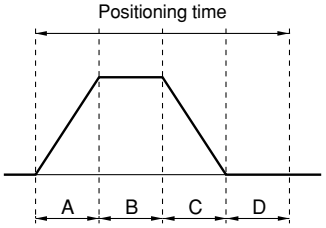
Model	Stroke	n_1	n_2
LTF8□F□NH- 100K-□□-X10	100	2	1
LTF8□F□NH- 200K-□□-X10	200	3	1
LTF8□F□NH- 300K-□□-X10	300	4	1
LTF8□F□NH- 400K-□□-X10	400	5	1
LTF8□F□NH- 500K-□□-X10	500	6	2

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 distance (mm)		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/s^2

∗ 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 LTF8

Motor Output 200W

Rolled Ball Screw ø15mm/20mm lead

How to Order

LTF8 [G] F [1] [NL] — [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

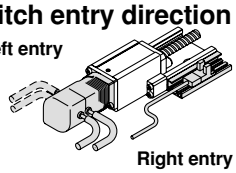
Switch specifications

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".

Motor/switch entry direction

Left entry



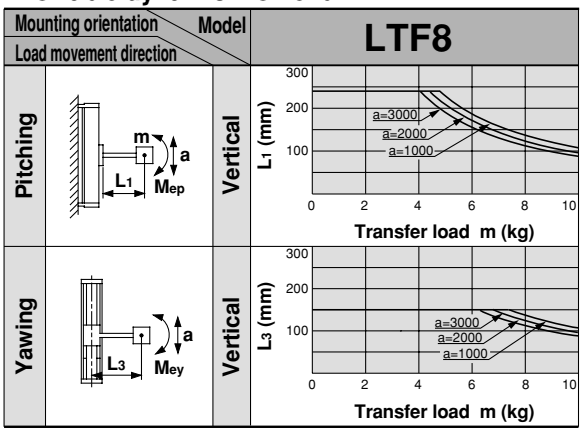
Right entry

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 ø15mm, 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)
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.

Regenerative Absorption Unit Selection Guide

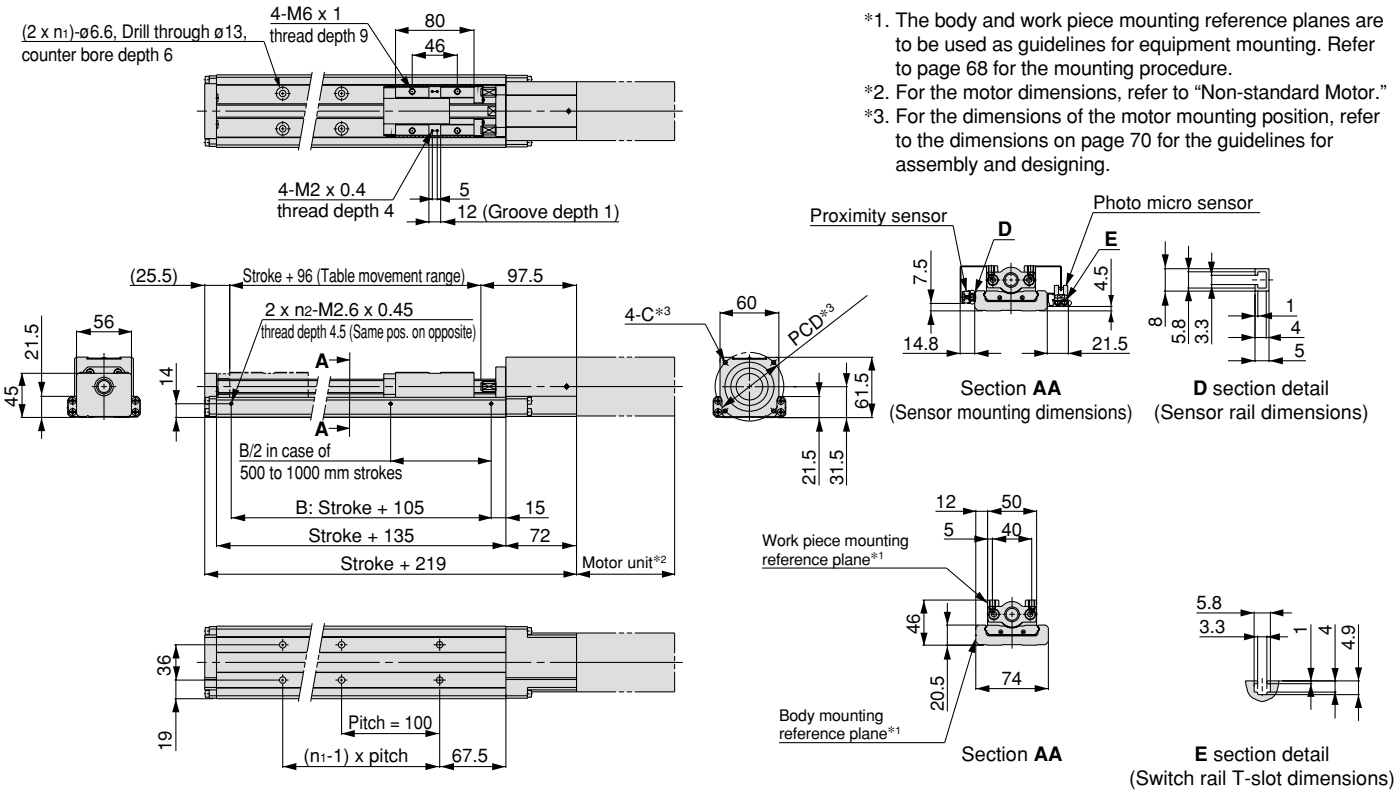
Depending on operating conditions, a regenerative absorption unit or regenerative resistor may be required for a non-standard motor with vertical mount specification. How to determine regenerative energy is shown below.

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.

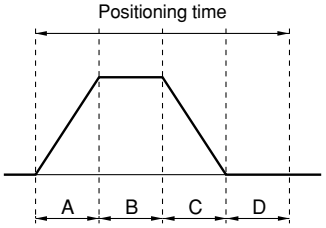
Model	Stroke	n_1	n_2
LTF8□F□NL- 100K-□□-X10	100	2	1
LTF8□F□NL- 200K-□□-X10	200	3	1
LTF8□F□NL- 300K-□□-X10	300	4	1
LTF8□F□NL- 400K-□□-X10	400	5	1
LTF8□F□NL- 500K-□□-X10	500	6	2

Model	Stroke	n_1	n_2
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/s^2

∗ 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.

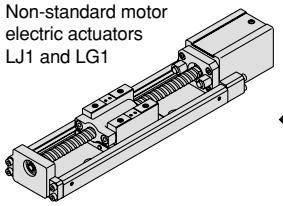
	Motor output (W)	Power supply voltage (V AC)	Motor model	Compatible driver model	Motor dimension (mm)
Matsushita Electric Industrial Co., Ltd.	200	100/115	MSM021P1B	MSD021P1E	128
		200/230	MSM022P1B	MSD023P1E	
Mitsubishi Electric Corporation	200	100/115	HC-PQ23B	MR-C20A1	121
		200/230		MR-C20A	
Yasukawa 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.

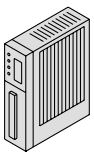
Non-standard Motor Cables

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



Driver



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 mm^2 (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

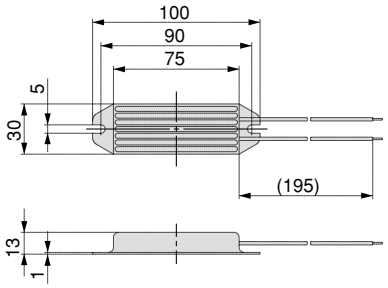
Compatible model

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

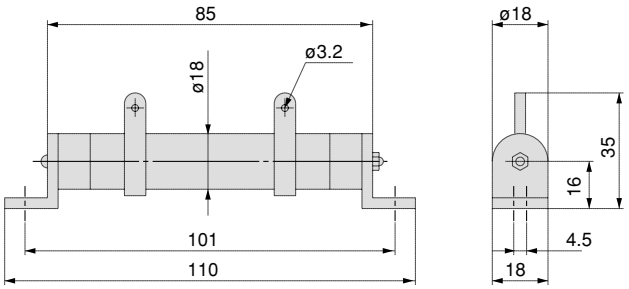
Applicable types
LTF (non-standard motor)

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

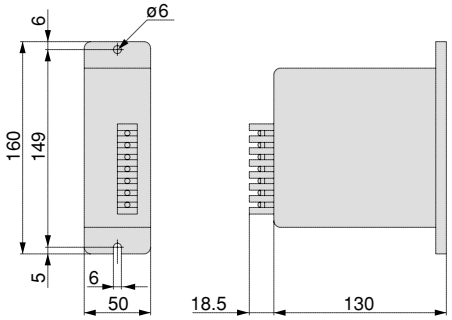
LJ1-7-G/Matsushita Electric Industrial Co., Ltd.



LJ1-7-R/Mitsubishi Electric Corporation

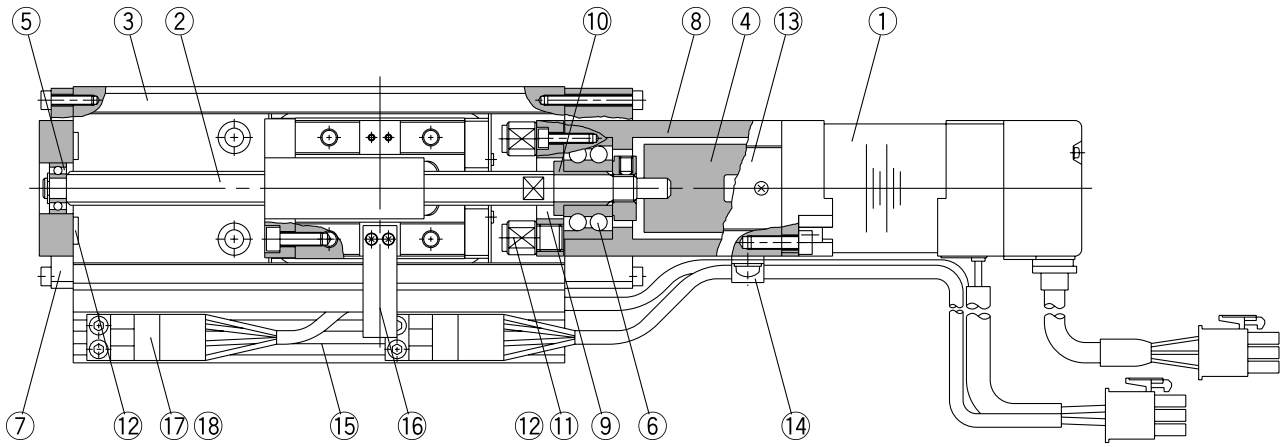


LJ1-7-Y/Yasukawa Electric Corporation



Construction

LTF6/LTF8



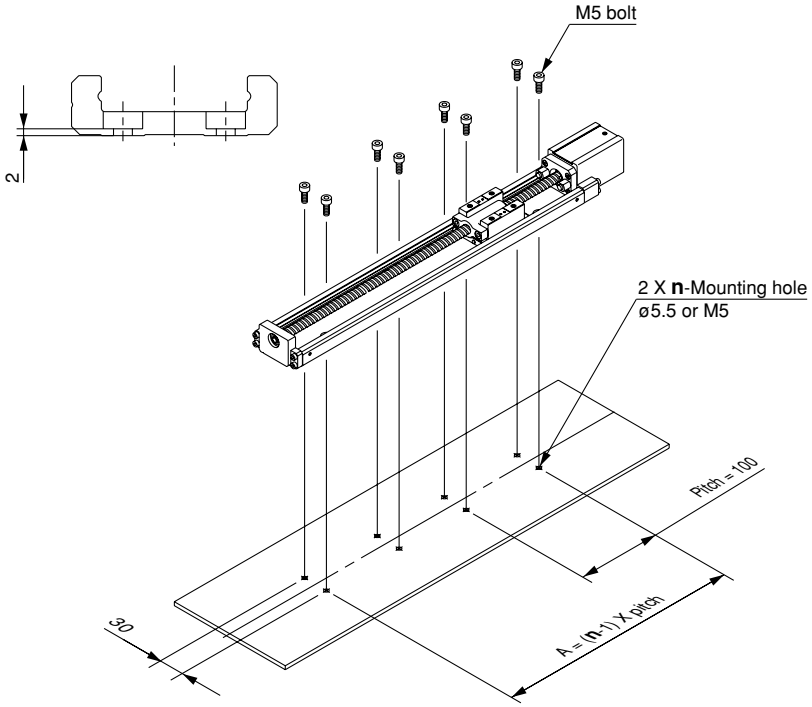
Parts list

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**		

Top Mount

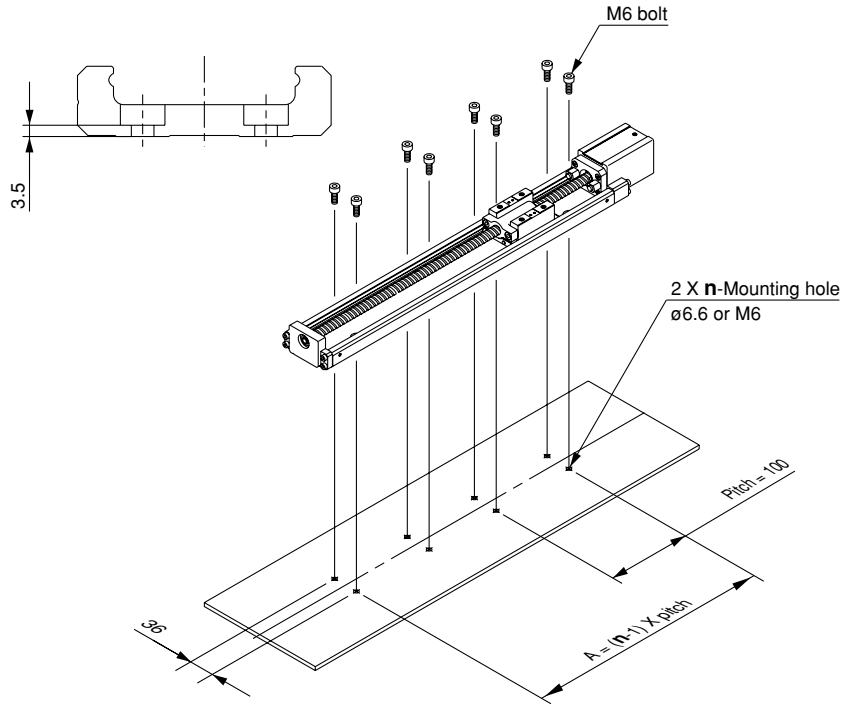
LTF6



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

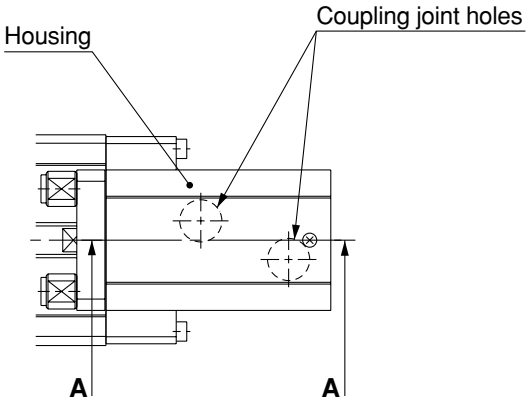


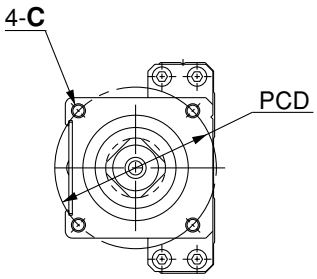
Mounting hole quantity

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

Non-standard Motor Mounting Dimensions

LTF6

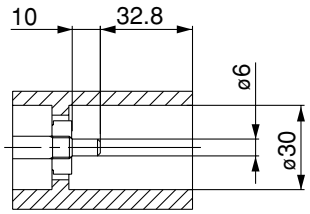




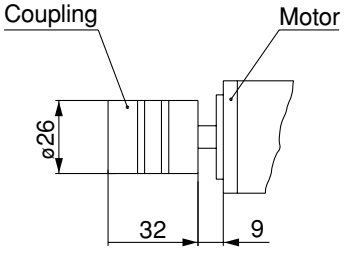
Motor mounting area dimensions

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.



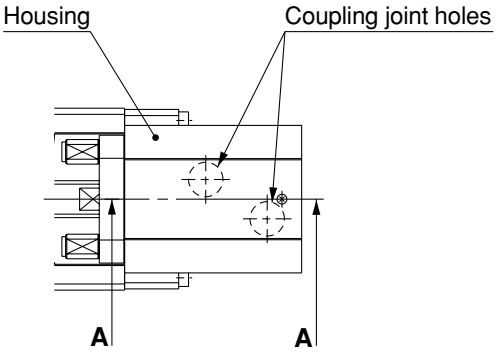
Section AA (Housing interior)

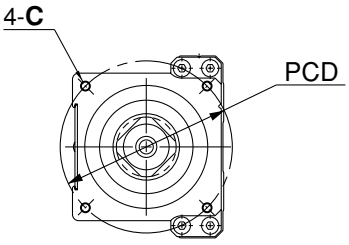


Coupling mounting dimensions∗

Non-standard Motor Mounting Dimensions

LTF8

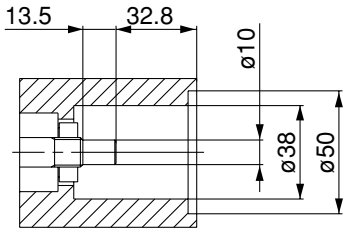




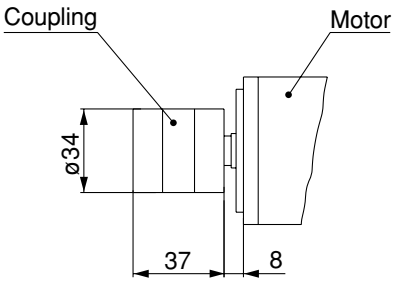
Motor mounting area dimensions

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)



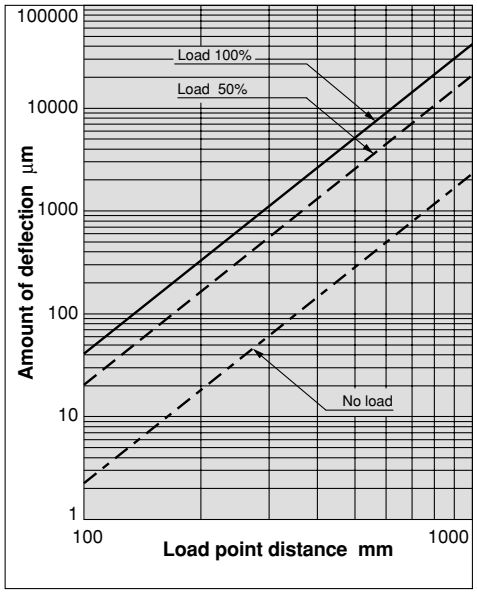
Coupling mounting dimensions*

Deflection Data

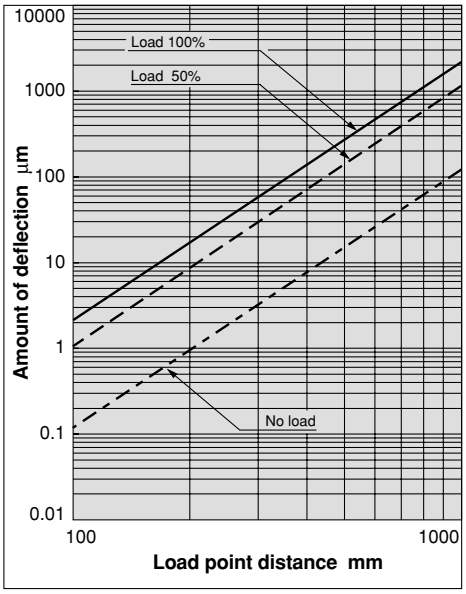
The load and the amount of deflection at load point W are shown in the graphs below for each series.

LTF6

Horizontal

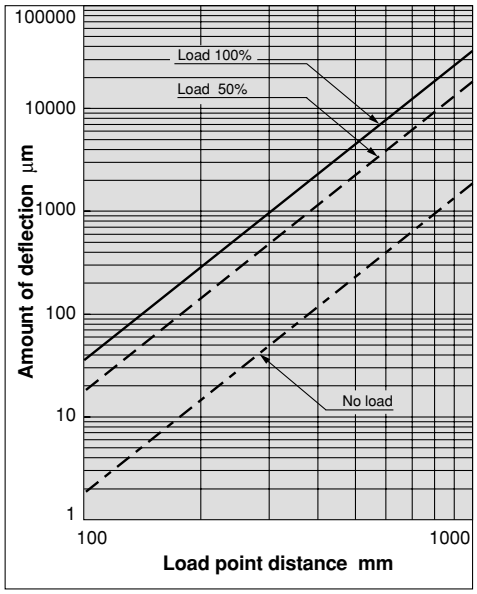


Lateral

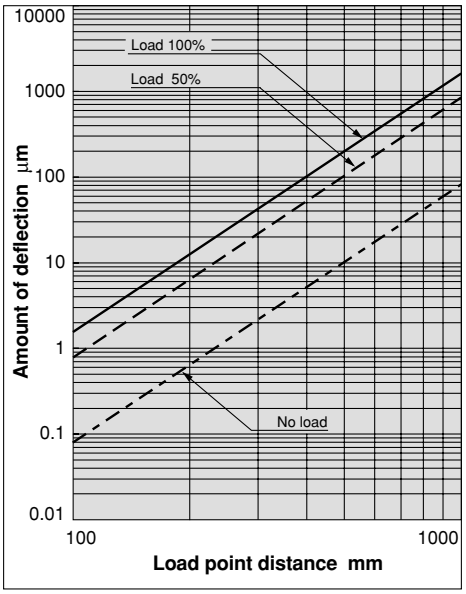


LTF8

Horizontal



Lateral



With single end support and table moved to the end of the stroke

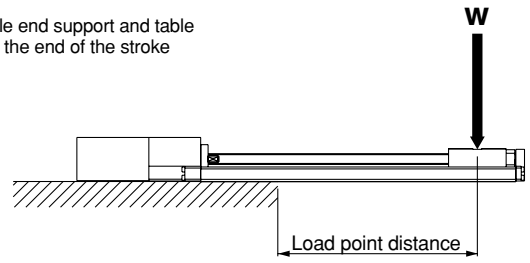


Figure 1. Horizontal

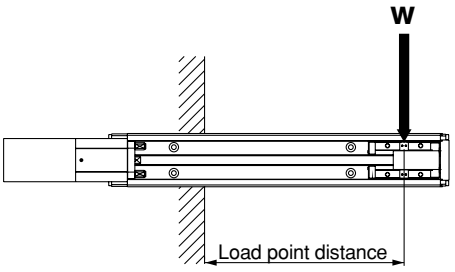
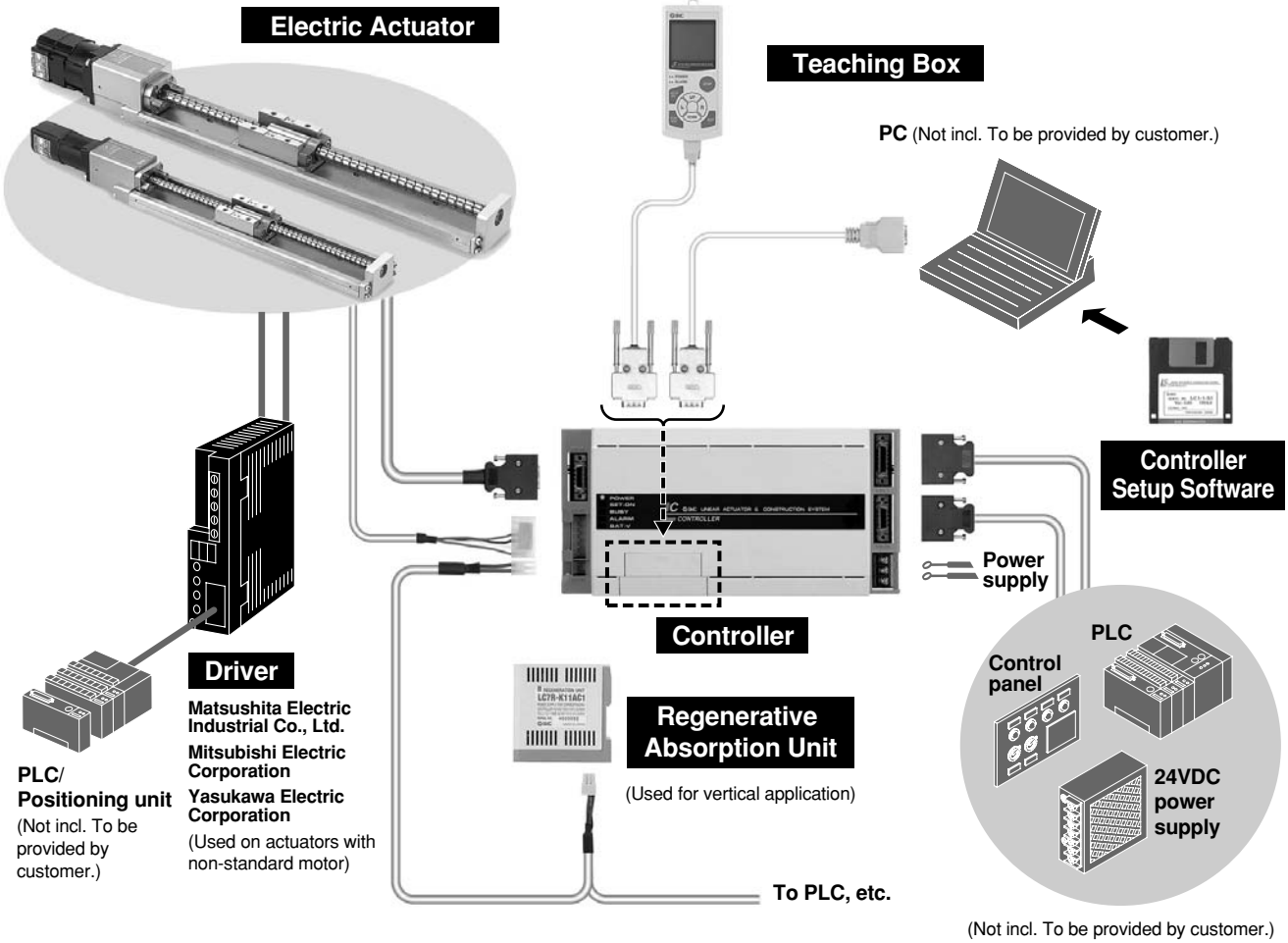


Figure 2. Lateral

Dedicated Controller
Series LC1
Dedicated Controller for Standard AC Servomotor



Series LTF: Standard Motor Compatible

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□A□) 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)

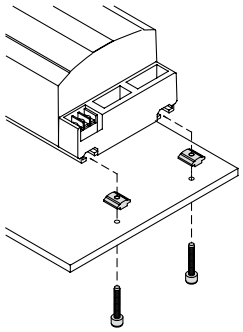
*1) Consult SMC if the supply voltage for LC1-1H□V□1 will be 110V AC or more, or the supply voltage for LC1-1H□V□2 will be 220V AC or more.

Mounting bracket

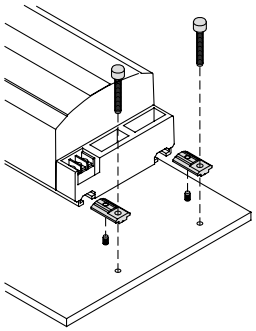
3	M3
5	M5

Mounting*

N: T-nut mounting



L: T-bracket 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

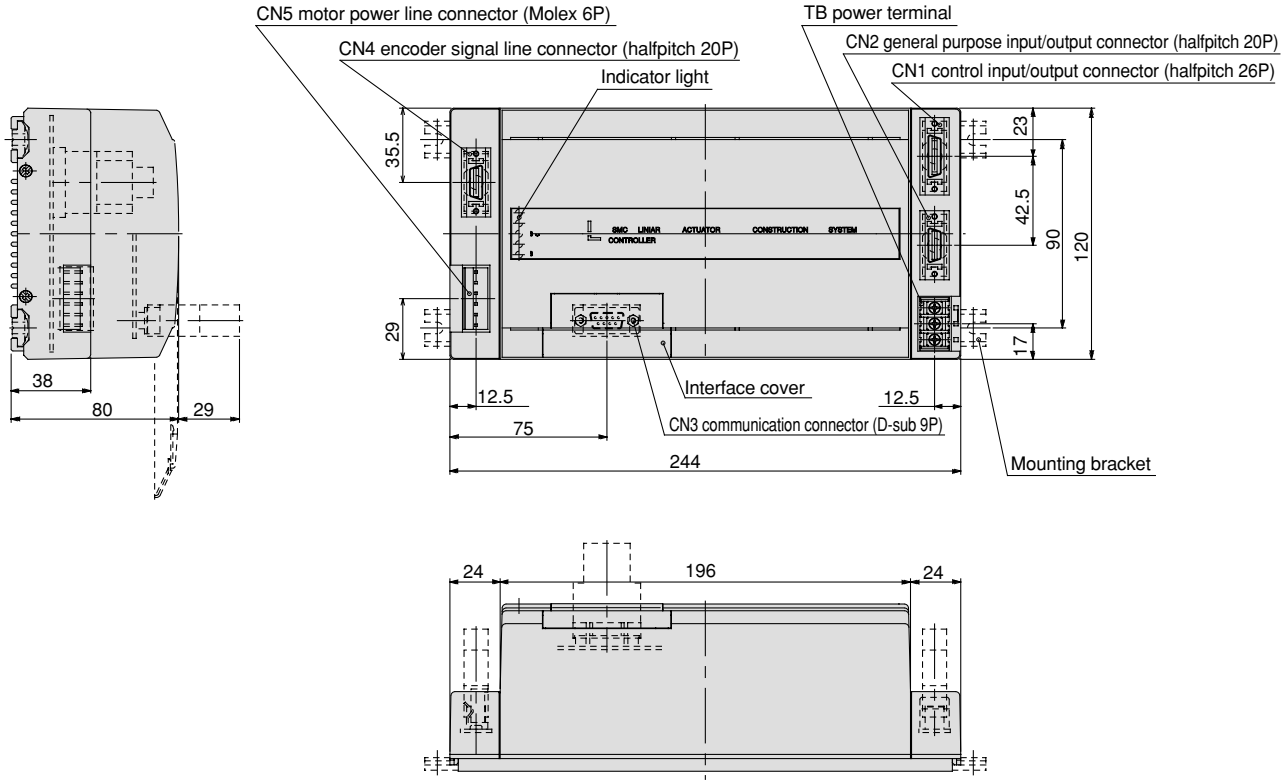
Item	Performance/Specifications
General purpose input	6 inputs, Photo-coupler insulation, 24V DC, 5mA
General purpose output	6 outputs, Open collector output, 35V DC max., 80mA/output (maximum load current)
Control commands	Output ON/OFF, Input condition wait, Condition jump, Time limit input wait

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

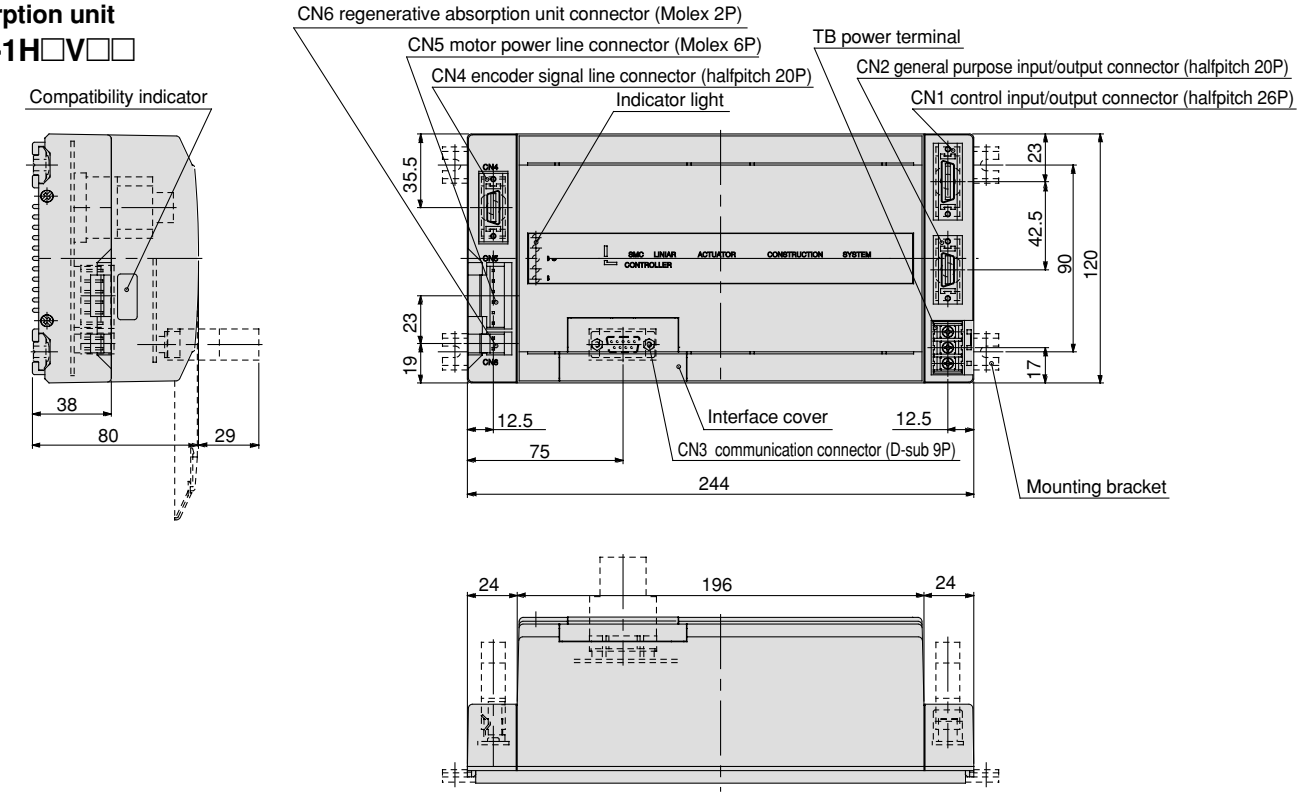
Dimensions

LC1-1H□H□□



With regenerative absorption unit

LC1-1H□V□□



Controller Mounting

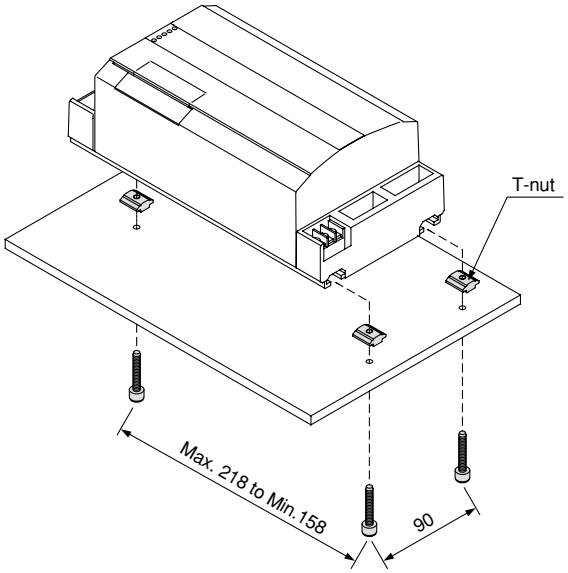
Mounting of the controller is performed by means of the two T-grooves provided on the bottom surface.

Mounting is possible from above or below using the special T-nuts or T-brackets. Refer to page 199 for further details.

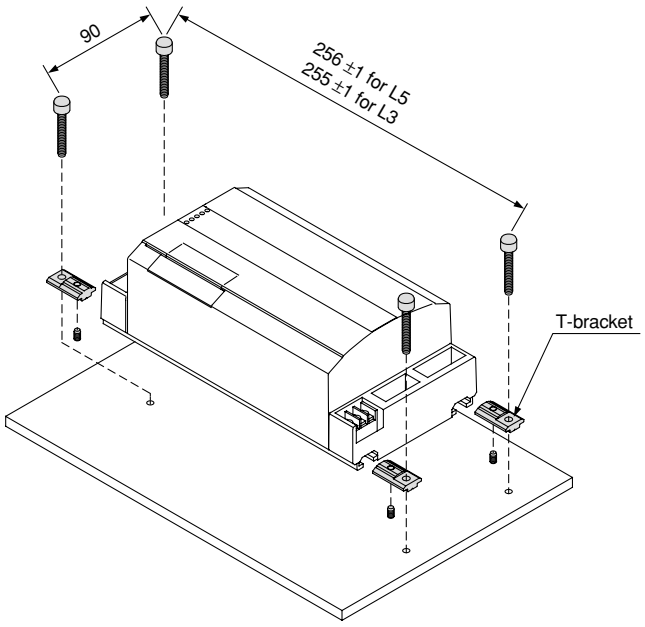
Note) This controller comes with either the T-nuts or T-brackets as accessories.

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

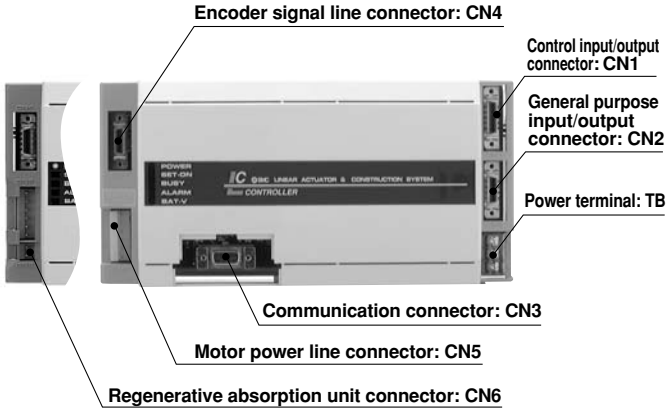
Mounting with T-nuts



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

Connection Examples

Control Input/Output Terminal: CN1

Terminal to perform actuator operation (connects PLC and operating panel)

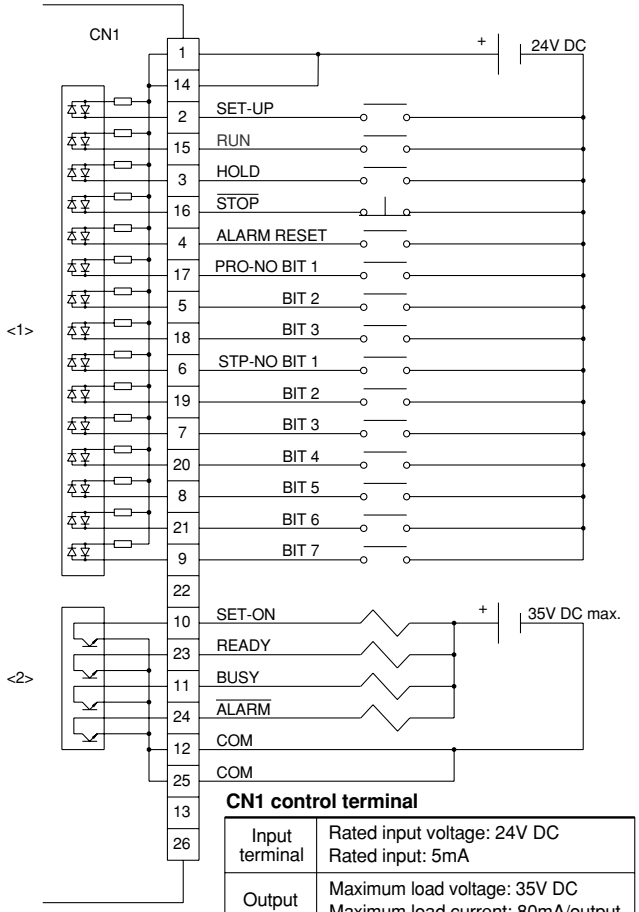
CN1. Control input terminal list

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.
$\overline{\text{STOP}}$	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.
$\overline{\text{ALARM}}$	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.

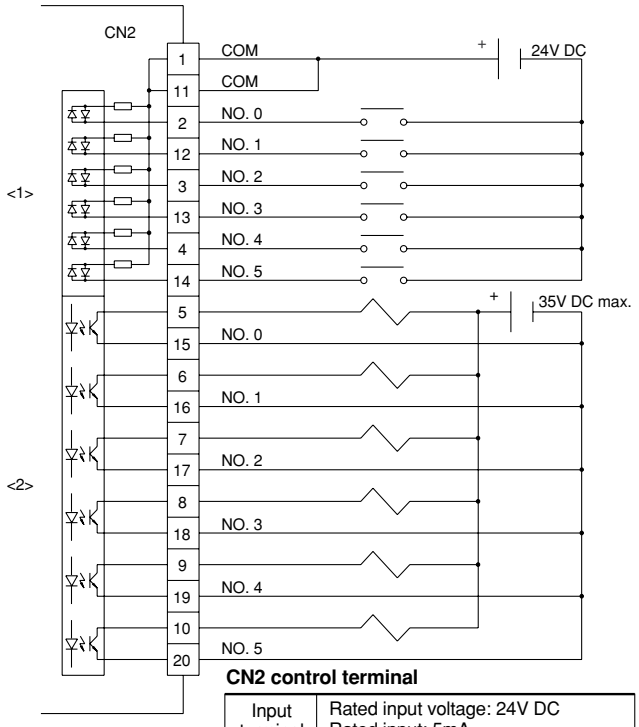
Control input/output terminal: CN1



CN1 control terminal

Input terminal	Rated input voltage: 24V DC Rated input: 5mA
Output terminal	Maximum load voltage: 35V DC Maximum load current: 80mA/output 320mA/COM

General purpose input/output terminal: CN2

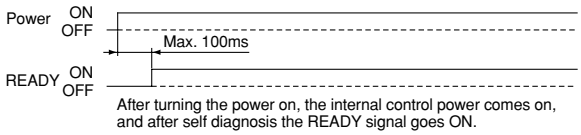


CN2 control terminal

Input terminal	Rated input voltage: 24V DC Rated input: 5mA
Output terminal	Maximum load voltage: 35V DC Maximum load current: 80mA/output

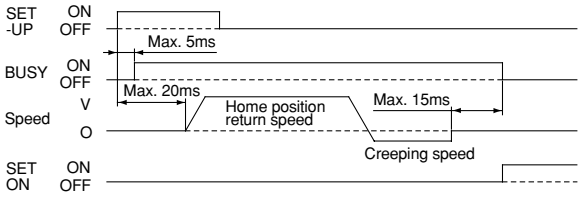
Control Method/Timing

Timing for READY signal generation immediately after turning on power

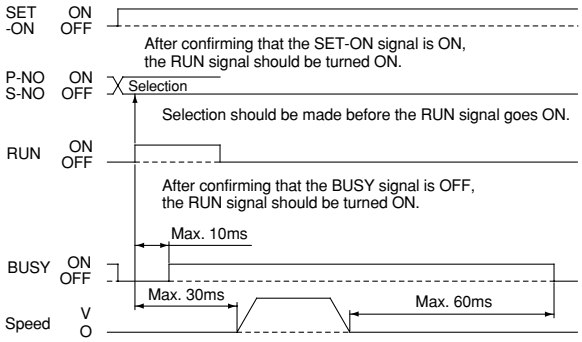


After turning the power on, the internal control power comes on, and after self diagnosis the READY signal goes ON.

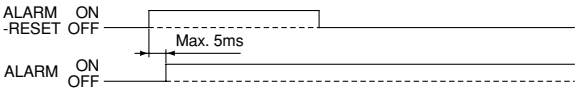
Timing for home position return



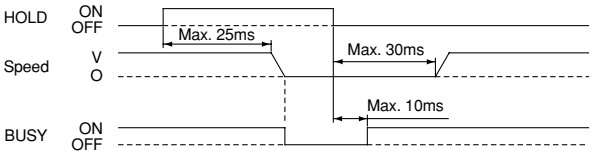
Timing for program/step execution



Timing for alarm reset

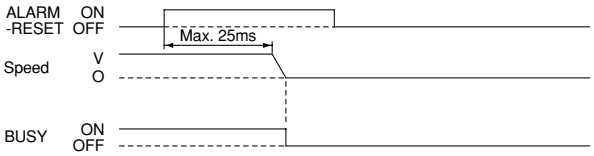


Timing for temporary stop during operation



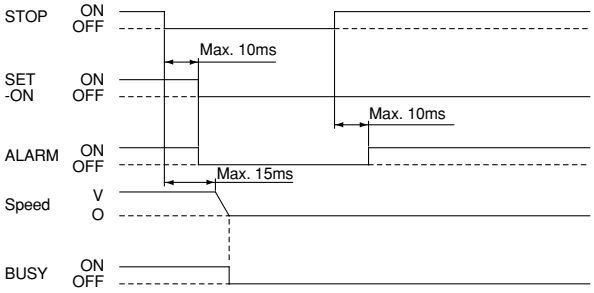
BUSY-OFF timing is controlled by actuator deceleration.

Timing for stop by ALARM-RESET during operation



BUSY-OFF timing is controlled by actuator deceleration.

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.

Controller Setup Software LC1-1-W2

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.

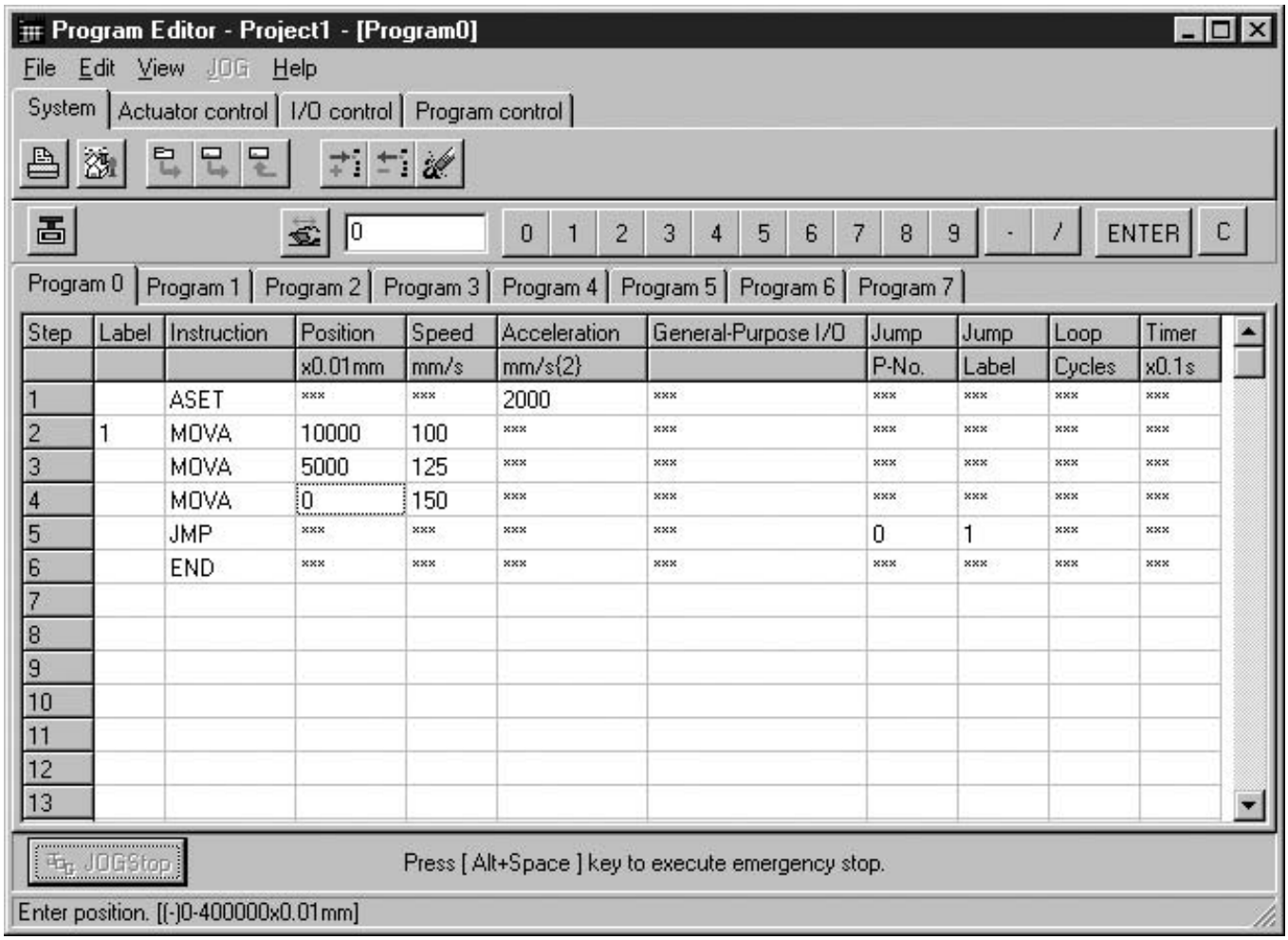
- Direct teaching
- Program printing
- Batch editing and sending/receiving of all programs
- Batch management and multiple saving of parameters and programs

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

- The contents of this software and the registered product specifications may change without prior notice.
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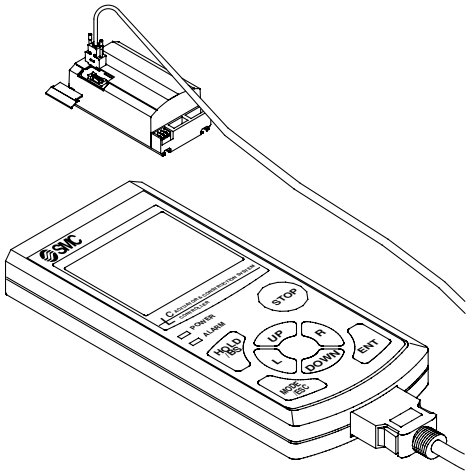
Series LC1 Dedicated Teaching Box/LC1-1-T1

- **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

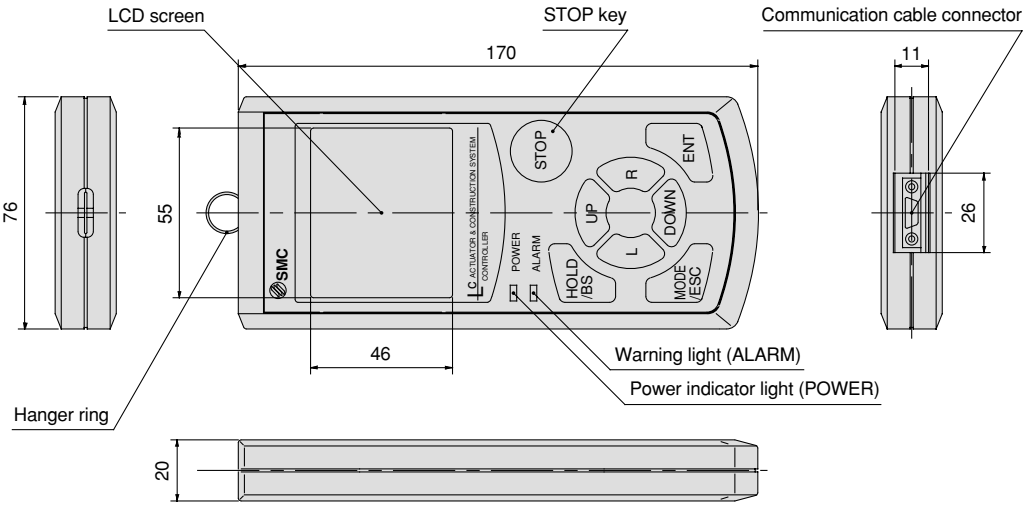
General specifications

	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

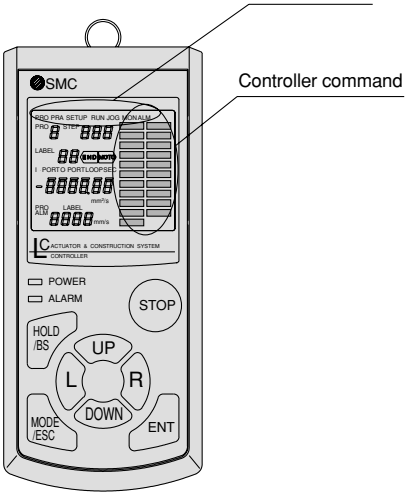


Alarm Code List

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 MOVI, 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, MOVI, 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.

Key Arrangement and Functions



	Mode	Display	Function
Main modes	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 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.

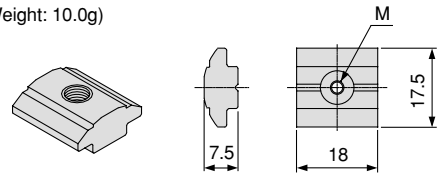
T-nuts and T-brackets for Mounting

Be sure to use when mounting the controller.

Note) The controller unit includes either T-nuts or T-brackets.

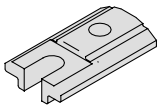
T-nuts

(Weight: 10.0g)

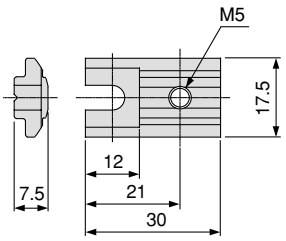


Model	M
LC1-1-N3	M3 x 0.5
LC1-1-N5	M5 x 0.8

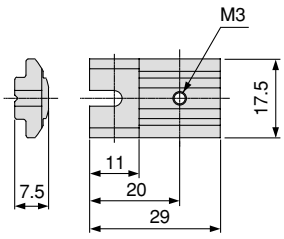
T-brackets



Model **LC1-1-L5** (Weight: 16.0g)



Model **LC1-1-L3** (Weight: 15.5g)

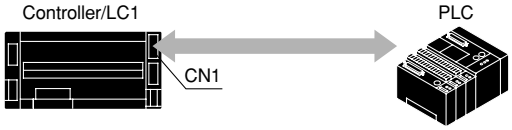


Controller Connectors

These are connectors 'all halfpitch type' used for CN1 (control input/output) and CN2 (general purpose input/output).

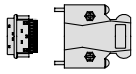
Note) The controller unit includes a controller connector for use with CN1 and CN2.

CN1 (Control input/output)



Controller connector (CN1: Control input/output)

Model **LC1-1-1000**

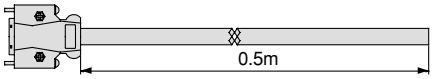


10326-52A0-008
Halfpitch hood (26P)
Sumitomo/3M Limited

10126-3000VE
Halfpitch plug (26P)
Sumitomo/3M Limited

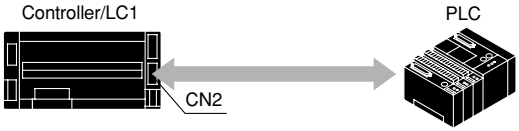
Single side wired controller connector (CN1: Control input/output)

Model **LC1-1-1050**



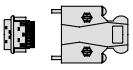
Cable is connected to LC1-1-1000.

CN2 (General purpose input/output)



Controller connector (CN2: General purpose input/output)

Model **LC1-1-2000**

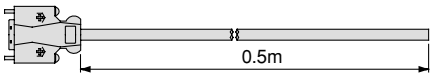


10320-52A0-008
Halfpitch hood (20P)
Sumitomo/3M Limited

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.

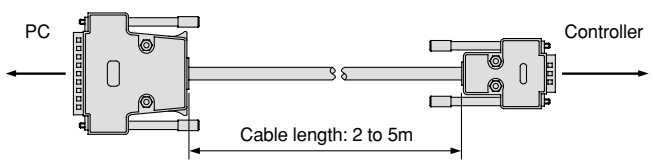
Note) Be aware of the configuration of the connector on the PC when selecting a dedicated communication cable..

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

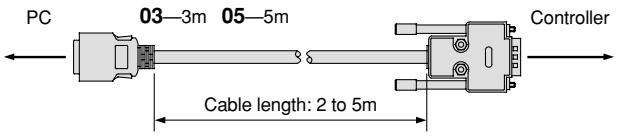


Dedicated communication cable (halfpitch) (For NEC PC-98 Series)

Model **LC1-1-R□H**

● **Cable length**

02—2m **04**—4m
03—3m **05**—5m



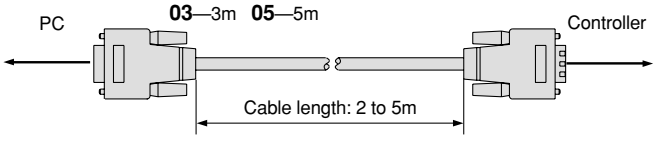
∗ PC-98 Series is a registered trade mark of NEC Corporation.

Dedicated communication cable (IBM PC/AT compatible computer)

Model **LC1-1-R□C**

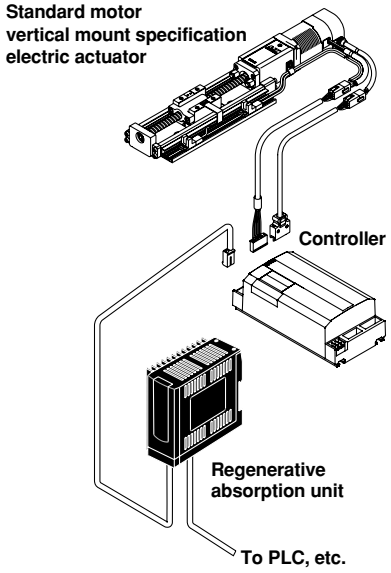
● **Cable length**

02—2m **04**—4m
03—3m **05**—5m



Series LC7R Dedicated Regenerative Absorption Unit

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.



⚠ 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

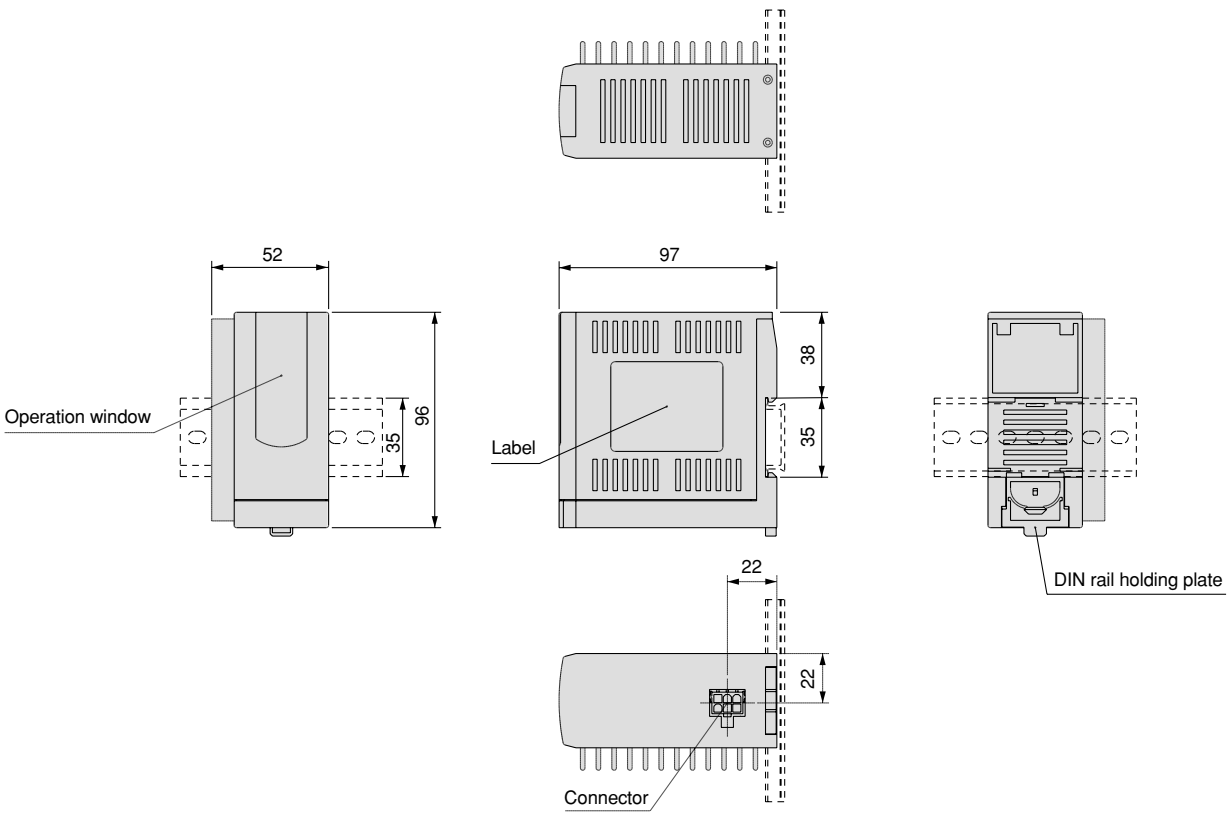
S0	Regenerative absorption unit connector and pin
S1	Series LC1 connector and pin
C1	Series LC1 connection cable (0.5m) Note)

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□□	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	100V AC	200V AC
External connection method	Connector	
Insulation resistance	500V DC, 50MΩ or more	
Mounting	DIN rail mount	

Dimensions



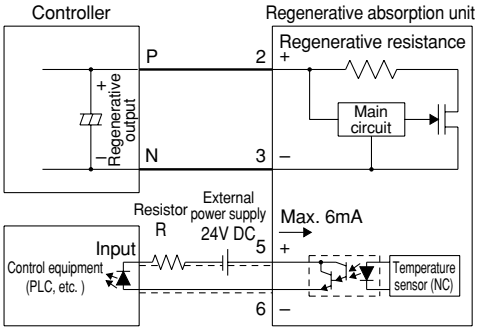
Connection Examples

• 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

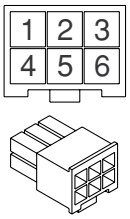
• Wiring tools [Manufacturer: Molex Japan Co., Ltd.]
Wiring tools should be provided by customer.

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)

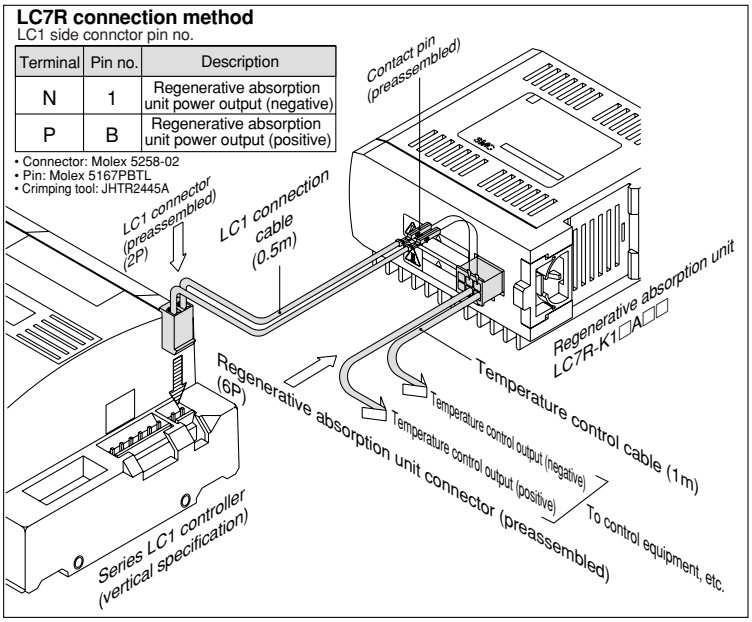
Insertion side



LC7R connection method
LC1 side connctor pin no.

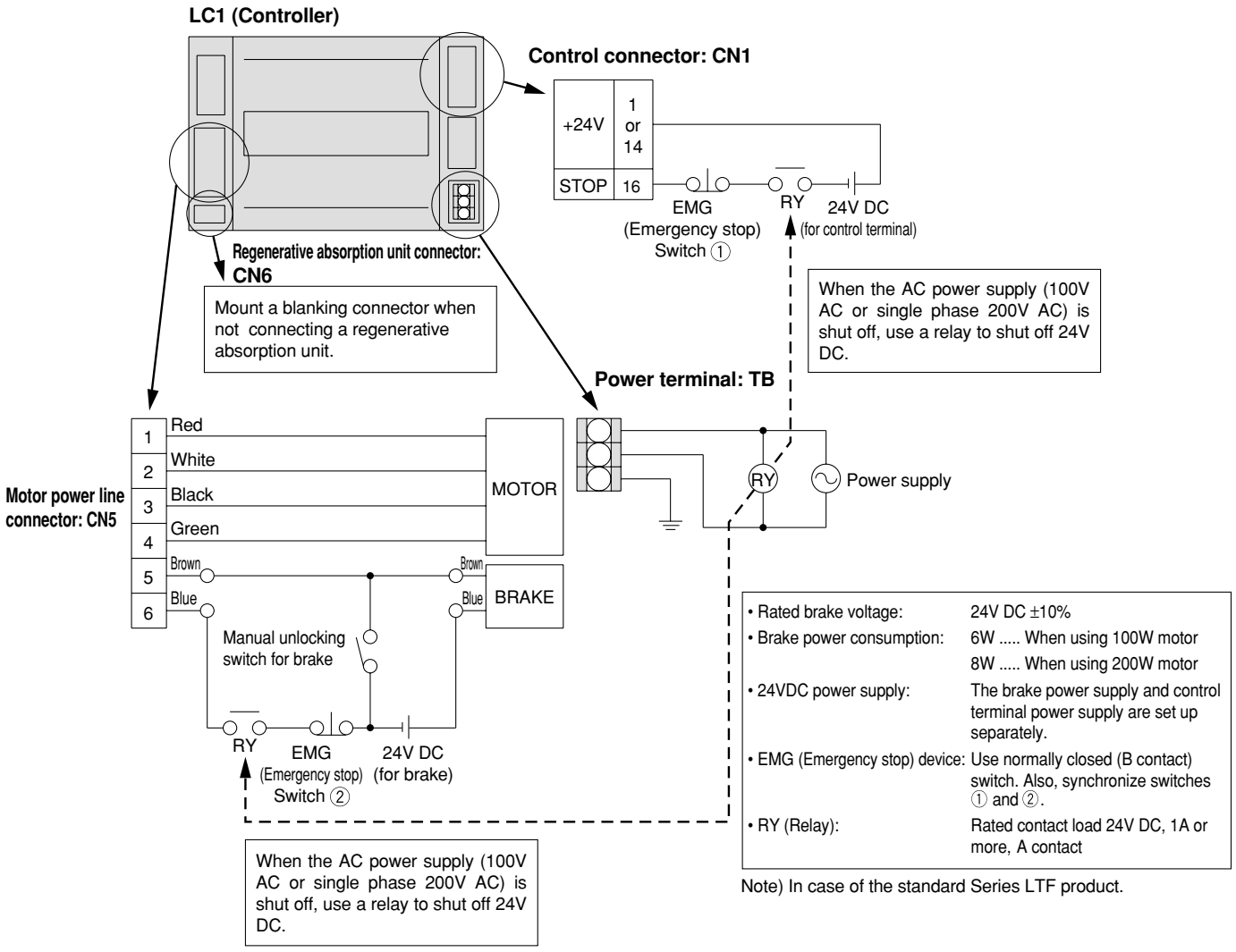
Terminal	Pin no.	Description
N	1	Regenerative absorption unit power output (negative)
P	B	Regenerative absorption unit power output (positive)

• Connector: Molex 5258-02
• Pin: Molex 5167PBTL
• Crimping tool: JHTR2445A



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.)



• Rated brake voltage:	24V DC ±10%
• Brake power consumption:	6W ..... When using 100W motor 8W ..... When using 200W motor
• 24VDC power supply:	The brake power supply and control terminal power supply are set up separately.
• EMG (Emergency stop) device:	Use normally closed (B contact) switch. Also, synchronize switches ① and ②.
• RY (Relay):	Rated contact load 24V DC, 1A or more, A contact

Note) In case of the standard Series LTF product.

⚠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

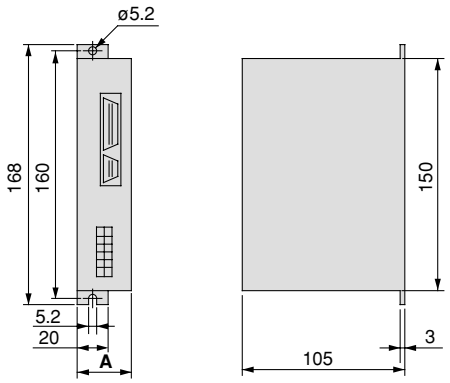
1. A regenerative absorption unit is required depending on actuator operating conditions. Read the instruction manual for the regenerative absorption unit when one is connected.

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



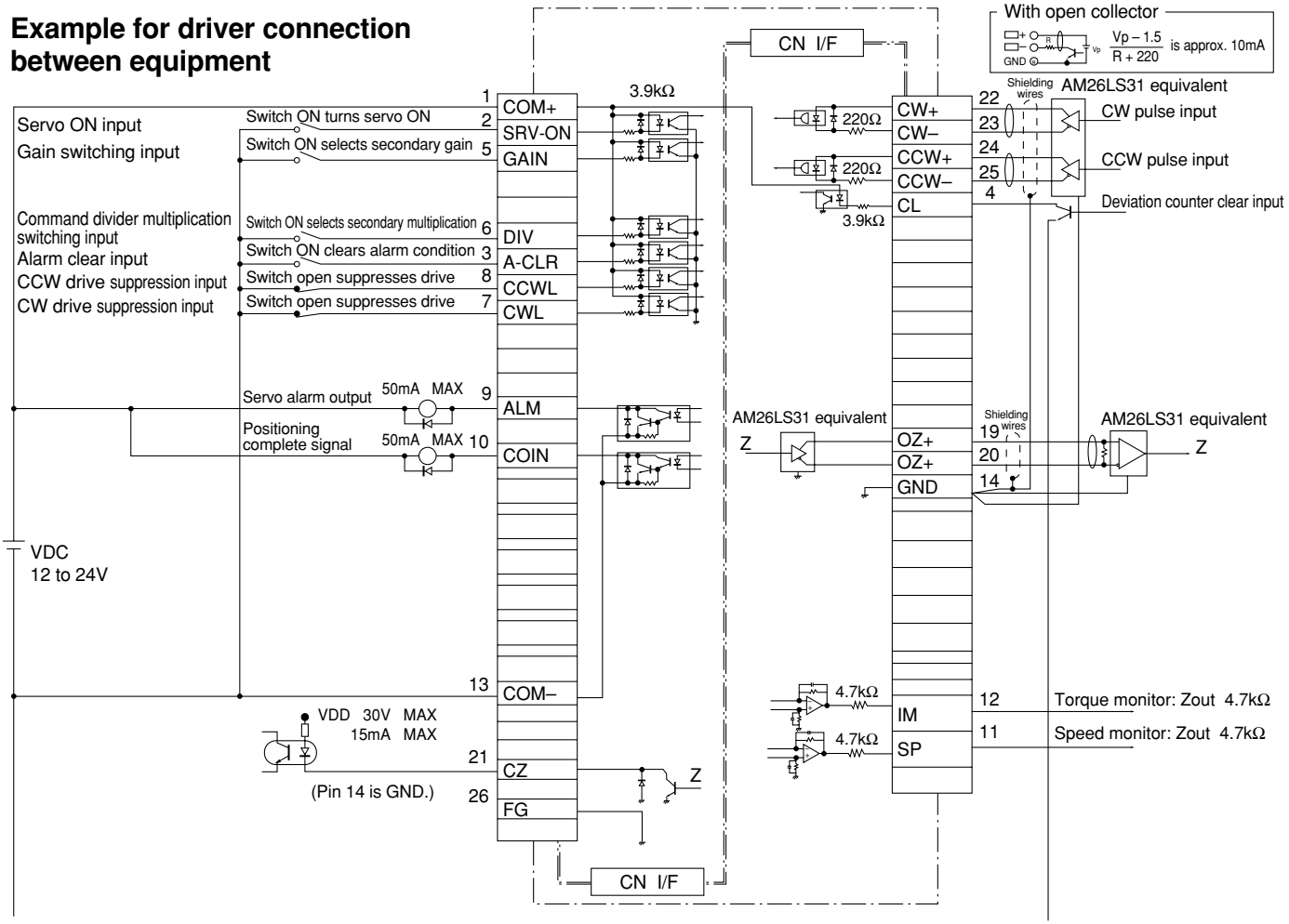
Driver dimensions

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

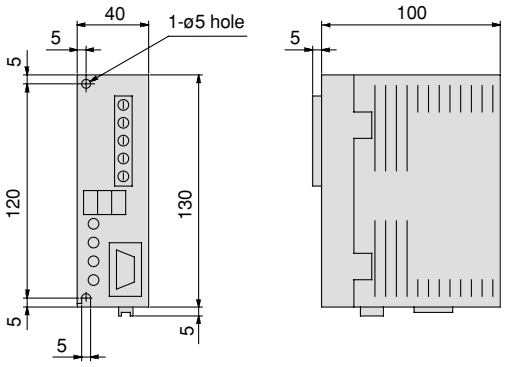


Non-standard Motor Compatible Drivers

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



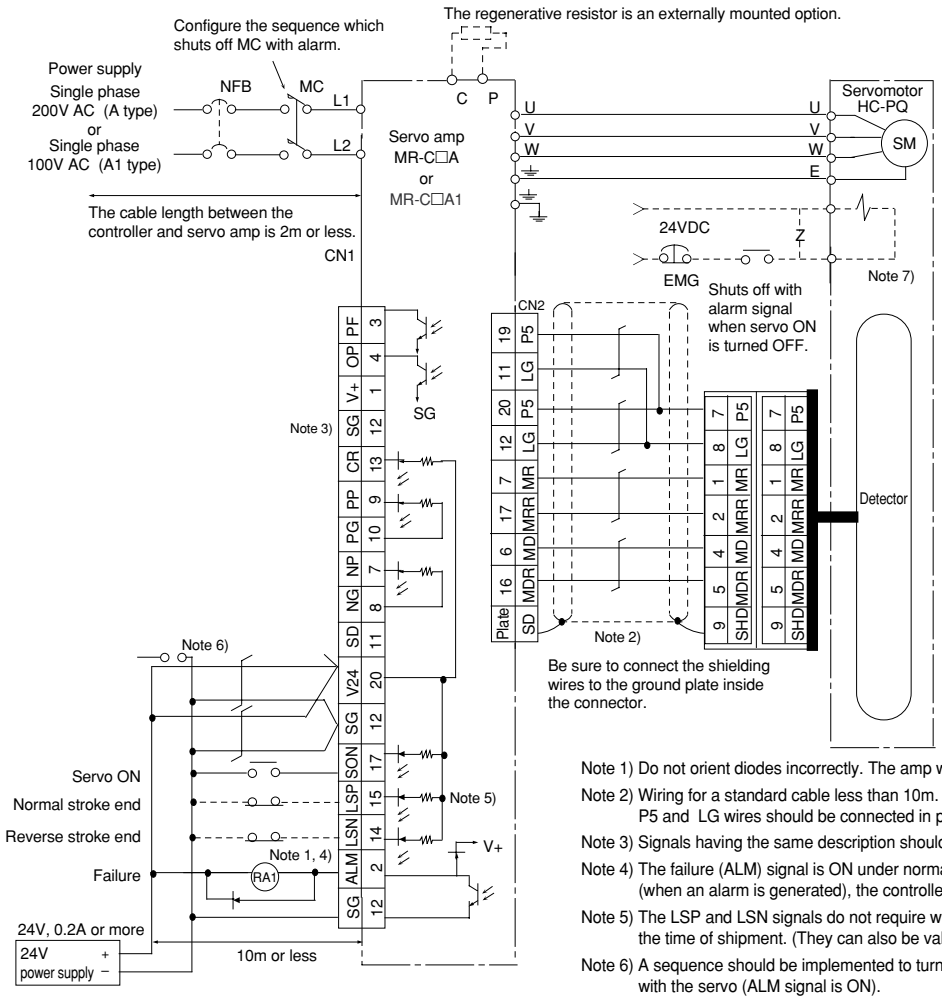
Driver dimensions

Driver 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



Note 1) Do not orient diodes incorrectly. The amp will fail if connected incorrectly.

Note 2) Wiring for a standard cable less than 10m. When the cable length is 10m or longer, four lines each of P5 and LG wires should be connected in parallel. (Maximum 50m)

Note 3) Signals having the same description should be connected to the same pin on the connector.

Note 4) The failure (ALM) signal is ON under normal conditions when there is no alarm. When it goes OFF (when an alarm is generated), the controller output should be stopped by the sequence program.

Note 5) The LSP and LSN signals do not require wiring, because they are automatically turned on internally at the time of shipment. (They can also be validated by parameters.)

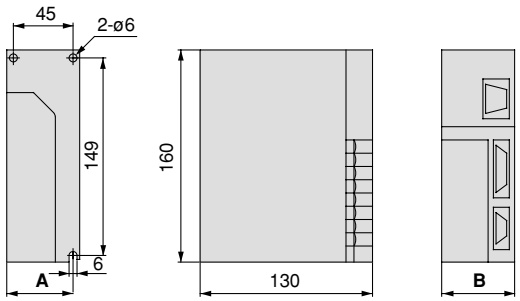
Note 6) A sequence should be implemented to turn on the RDY relay after confirming that there is no trouble with the servo (ALM signal is ON).

Note 7) For motor with electromagnetic brake.

Yasukawa Electric Corporation Drivers for LTF (For the holding brake wiring, refer to technical information provided by each manufacturer.)

Dimensions

Driver



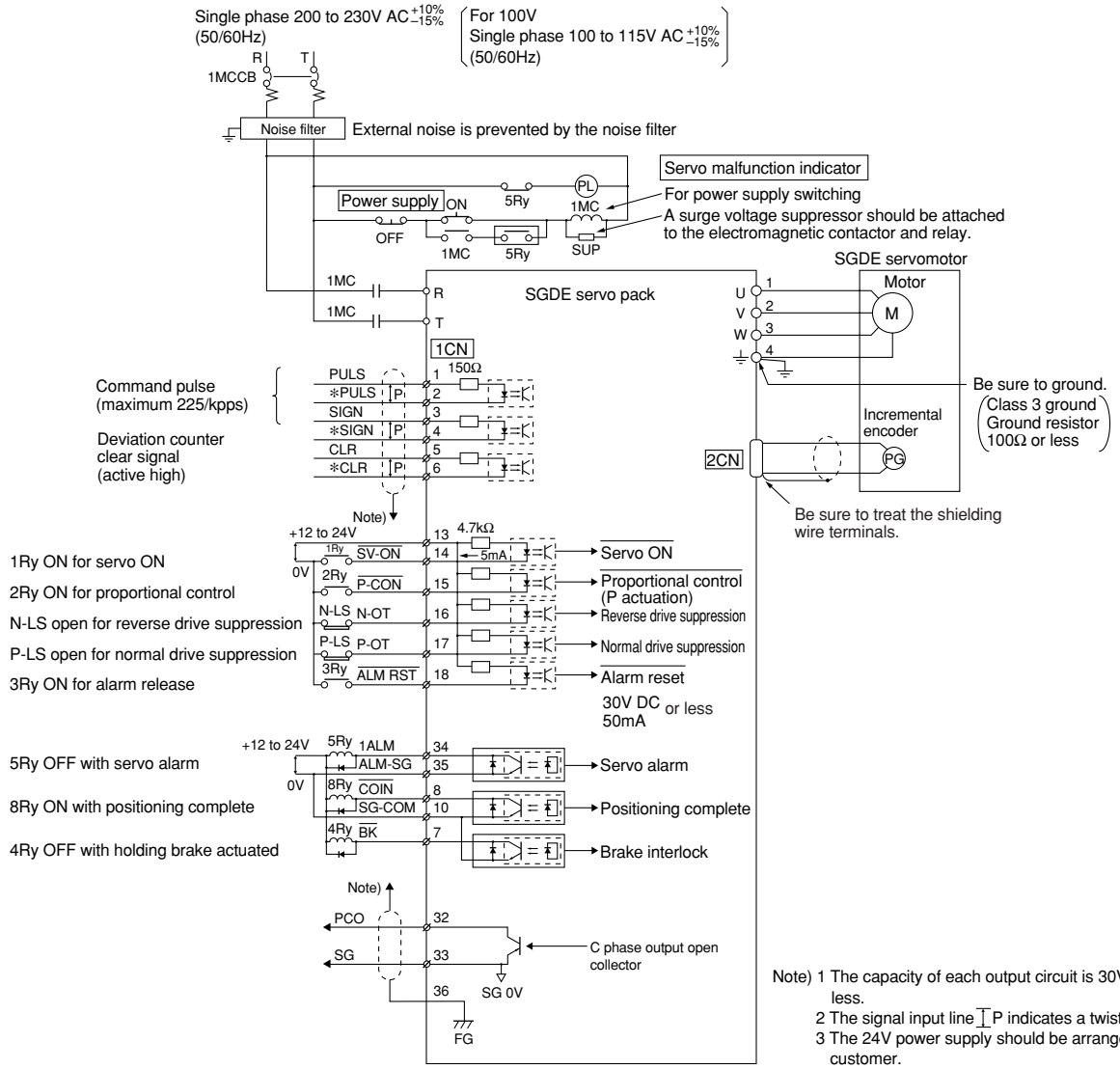
Driver dimensions

Driver model	A	B
SGDE-01AP	50	55
SGDE-01BP		
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	$\overline{\text{S-ON}}$	Servo ON input
2	∗PULS	Command pulse input	15	$\overline{\text{P-ON}}$	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	$\overline{\text{ALMRST}}$	Alarm reset input
6	∗CLR	Deviation counter clear input	32	PCO	PG output C phase
7	$\overline{\text{BK}}$	Brake interlock signal output	33	SG	0V
8	$\overline{\text{COIN}}$	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



Note) 1 The capacity of each output circuit is 30V DC, 50mA or less.
2 The signal input line ⌶P indicates a twisted pair wire.
3 The 24V power supply should be arranged by the customer.

Applicable switch models

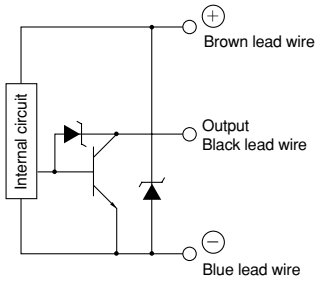
Applicable model	Part no.	Switch type		
LTF	GXL-N12FT	Standard	N.O. (A contact)	3 wire
	GXL-N12FTB	Standard	N.C. (B contact)	3 wire

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 ±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 0.5µs
Detecting distance fluctuation	Temperature characteristics	Within +15/–10% of detecting distance at 20°C within ambient temperature range
	Voltage characteristics	Within ±2% with ±10% fluctuation of operating voltage
Cable		CN-13-C3 (□3.8mm 3 wire heavy duty cable 3m)

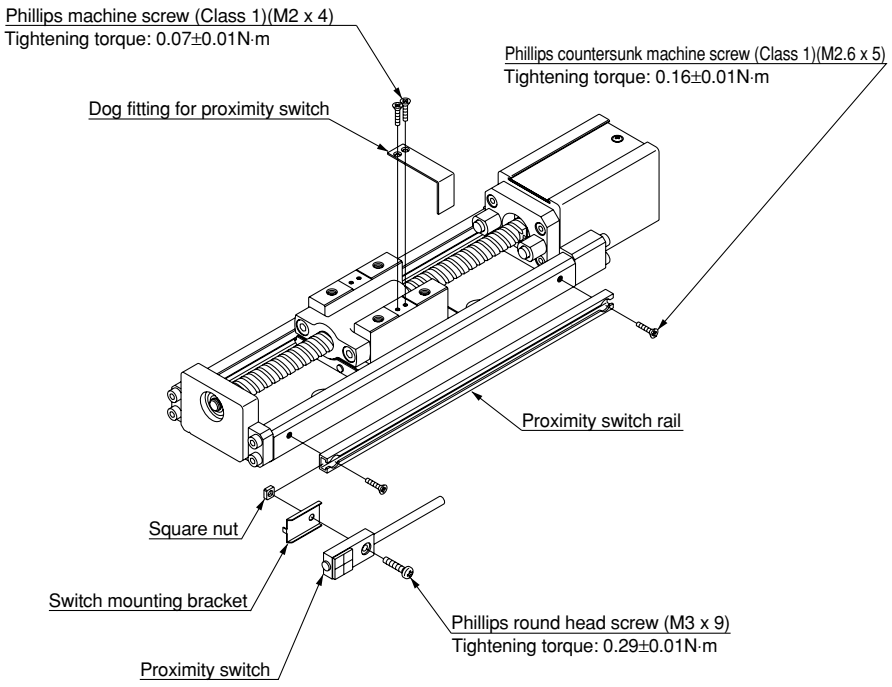
Proximity switch internal circuit

GXL-12FT(B)



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.

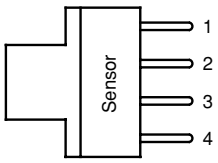
Proximity Switch/Dog Fitting for Proximity Switch Mounting



Standard Photo Micro Sensor for Home Position (OMRON Corporation)

Rating

Power supply voltage	5 to 24V DC ±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**

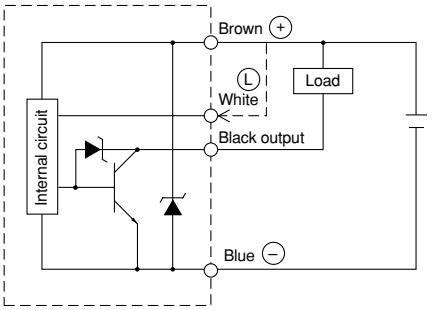
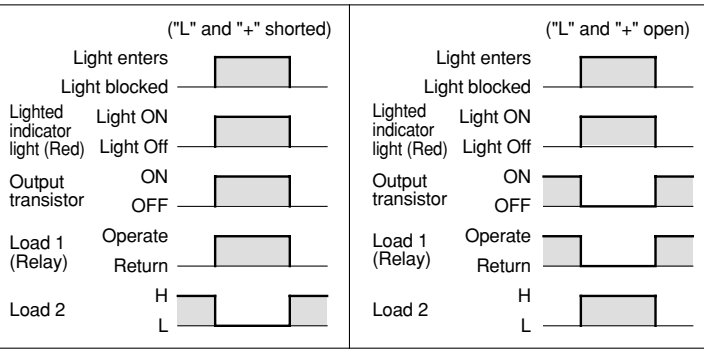


Terminal arrangement

1	Brown	Vcc ⊕
2	White	L*
3	Black	OUTPUT
4	Blue	GND (OV) ⊖

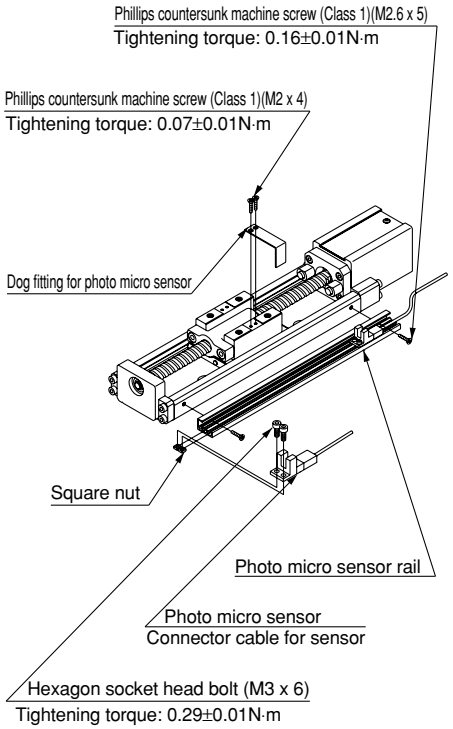
* Normally ON when light is blocked. However, if the Ⓛ terminal and ⊕ terminal are shorted, it changes to ON when light enters.

Output level circuit

Operating condition of output transistor	ON when light enters	ON when light is blocked
Output circuit		
Time chart		

* Normally ON when light is blocked. However, if the Ⓛ terminal and ⊕ terminal are shorted, it changes to ON when light enters.

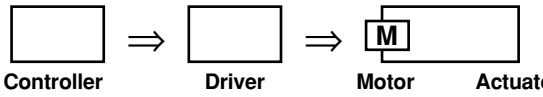
Photo Micro Sensor/ Dog Fitting for Photo Micro Sensor Mounting

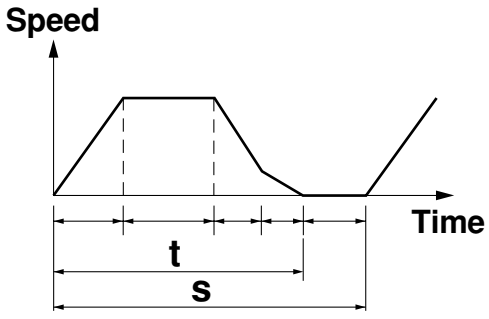


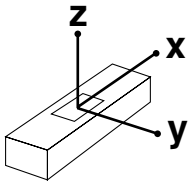
Be sure to use the attached mounting screws.
Mount the photo micro sensor as illustrated to the right.
Mount the dog fitting for photo micro sensor as illustrated to the right.
Be sure to observe the prescribed tightening torque. Use special adhesive for screws for locking.

Inquiry Sheet

Fill out the form and contact the nearest SMC sales office or distributor.

<table>
<tr><td rowspan="2">Name of customer</td><td>Company name</td><td colspan="3"></td></tr>
<tr><td>Dept.</td><td></td><td>Contact person</td><td></td></tr>
<tr><td>Contact telephone/ fax no.</td><td>Telephone</td><td></td><td>Fax</td><td></td></tr>
<tr><td>Mounting orientation</td><td colspan="4">Horizontal, Horizontal wall mount, Horizontal reverse mount, Vertical</td></tr>
<tr><td>Work piece load (kg)</td><td colspan="4"></td></tr>
<tr><td>Stroke (mm)</td><td colspan="4"></td></tr>
<tr><td>Speed (mm/s)</td><td colspan="4"></td></tr>
<tr><td>Positioning repeatability (mm)</td><td colspan="4">±0.1, ±0.05, ±0.02</td></tr>
<tr><td>Components
Circle components provided by customer.</td><td colspan="4">Units required
 

• Actuator only
• Actuator + Motor
• Actuator + Motor + Driver (controller) } Proceed to ①.
① Motor/Driver: Yes (Manufacturer: , Part no.:)
: No — Proceed to ②.
② Controller/Driver selection:
a) Controller provided by customer
PLC (Manufacturer: , Part no.:)
Positioning unit (pulse output function): Yes, No
b) Driver specifications
Power supply: 24V DC, 100V AC, 200V AC
International standard compatibility: None, CE, UL
c) Motor type: AC servomotor, Stepper motor (2 phase/5 phase), Brushless motor</td></tr>
<tr><td>Operation pattern
Describe in detail.</td><td colspan="4"></td></tr>
<tr><td>Tact time</td><td colspan="4"> 

Confirm the amount of time in seconds needed to cover the moving distance.
Moving distance: _____mm
t = Tact time: _____s
S = Cycle time: _____s</td></tr>
<tr><td>Work piece moment</td><td colspan="4">Example)
Projection distance
 

x: _____mm
y: _____mm
z: _____mm</td></tr>
<tr><td>Environment</td><td colspan="4">General, Clean room, Mist environment, Dusty environment</td></tr>
</table>

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 lightening, 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.

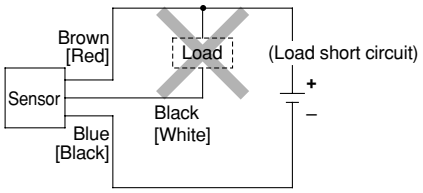
If applying voltage over the rated voltage range, equipment may be damaged.

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.



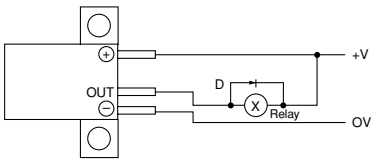
Note) Lead wire colors inside [ ] are those prior to conformity with IEC standards.

Other

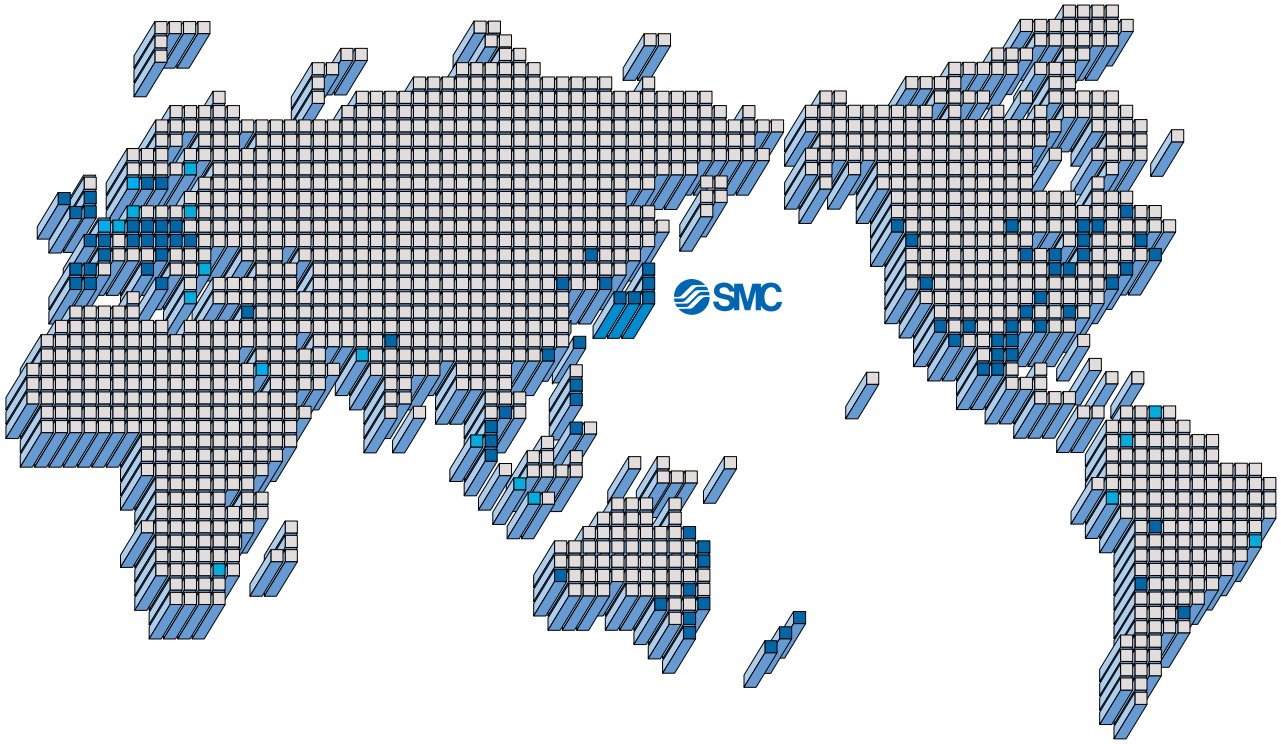
⚠ Caution

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.)



SMC'S GLOBAL MANUFACTURING, DISTRIBUTION AND SERVICE NETWORK



EUROPE

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CZECH
SMC Industrial Automation CZ s.r.o.

DENMARK
SMC Pneumatik A/S

FINLAND
SMC Pneumatiikka Oy

FRANCE
SMC Pneumatique SA

GERMANY
SMC Pneumatik GmbH

HUNGARY
SMC Ipari Automatizálási Kft.

IRELAND
SMC Pneumatics (Ireland) Ltd.

ITALY
SMC Italia S.p.A.

LATVIA
SMC Pnuematics Latvia SIA

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SMC Industrial Automation Polska Sp.z.o.o.

ROMANIA
SMC Romania s.r.l.

RUSSIA
SMC Pneumatik LLC.

SLOVAKIA
SMC Priemyselná Automatizáciá, s.r.o.

SLOVENIA
SMC Industrijska Avtomatika d.o.o.

SPAIN/PORTUGAL
SMC España, S.A.

SWEDEN
SMC Pneumatics Sweden AB

SWITZERLAND
SMC Pneumatik AG.

UK
SMC Pneumatics (U.K.) Ltd.

ASIA

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SMC (China) Co., Ltd.

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SMC Pneumatics (Hong kong) Ltd.

INDIA
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PT. SMC Pneumatics Indonesia

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SMC Pneumatics (Philippines), Inc.

SINGAPORE
SMC Pneumatics (S.E.A.) Pte. Ltd.

SOUTH KOREA
SMC Pneumatics Korea Co., Ltd.

TAIWAN
SMC Pneumatics (Taiwan) Co., Ltd.

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SMC Thailand Ltd.

NORTH AMERICA

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SMC Pneumatics (Canada) Ltd.

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SMC Corporation (Mexico) S.A. de C.V.

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SMC Corporation of America

SOUTH AMERICA

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BRAZIL
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1st printing November, 2002 D-DN P-80 (DN)
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Printed in Japan.

Линейный и линейно-поворотный привод с подвижной катушкой SMAC

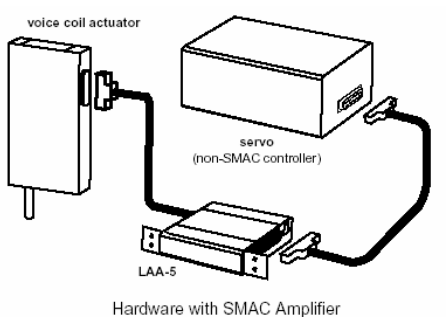
Серия LAL,LAR,LAS,GRP

Предназначены для высокопроизводительных или деликатных операций с необходимостью управления законом движения привода.

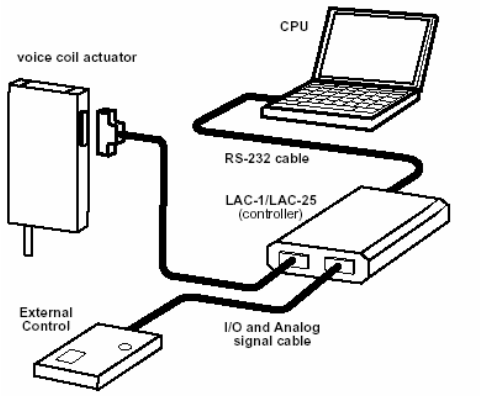
- Независимое двухкоординатное управление с высокой точностью.
- Задание необходимого закона движения (скорость, ускорение, усилие)
- Точность линейного позиционирования 0.1, 0.5, 1 ли 5 мкм
- Точность углового позиционирования – 0.007°-0.7°
- Программируемое усилие от 0.3 до 100Н
- Программируемая скорость от 0.005 до 1000 мм/сек
- Программируемое ускорение от 0 до 15G
- Малая масса подвижных частей и высокое быстродействие
- Встроенные прецизионные линейные направляющие
- Сквозное отверстие в штоке для подвода сжатого воздуха или вакуума
- Точные посадочные размеры, удобный монтаж

- Управление стандартными средствами для сервоприводов
- Принцип действия привода основан на физических законах взаимодействия поля постоянного магнита с витками электромагнитной катушки, через которую проходит электрический ток. Подвижный шток привода соединен непосредственно с катушкой. Закон изменения тока определяет закон движения нагрузки, соединенной со штоком привода.

Управление приводом



Hardware with SMAC Amplifier



Применение

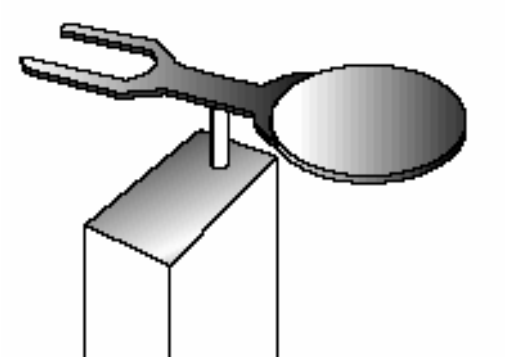
Однокоординатный привод может использоваться во всех традиционных приложениях для линейных приводов, но особенно эффективен при необходимости контроля за усилиями, точного регулирования скорости или положения, высоких скоростях перемещений или часто повторяющихся циклических движениях, таких, как:

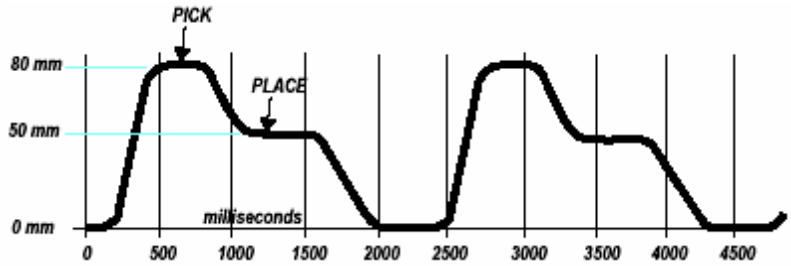
- Точная и деликатная транспортировка.
- Проверка усилий и ходов.
- Перфорация.
- Юстировка и балансировка подвижных прецизионных механизмов.

Двухкоординатный привод предназначен для того, чтобы поднимать, переворачивать и устанавливать элементы, например, в таких процессах:

- установка полупроводниковых компонентов.
- сборка монтажных плат
- прецизионная сборка с одновременным контролем линейных и угловых размеров и усилий.
- Точная и деликатная транспортировка

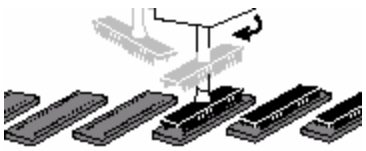
Использование 2-х координатного привода SMAC LAR-50 на операции транспортировки кремниевой подложки:

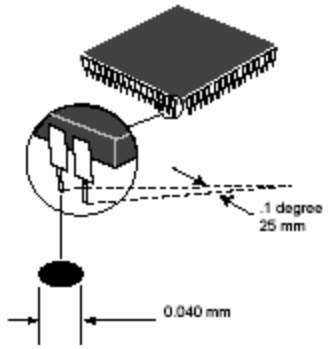


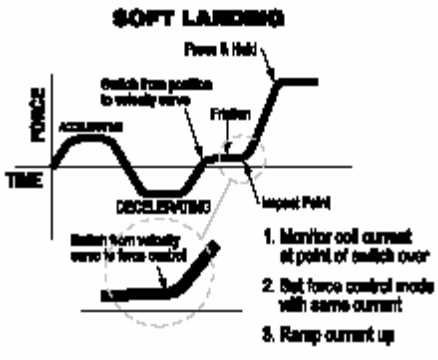


- Подъем и поворот пластины на 180°
- Точный контроль усилия с точностью 10 гр
- Контроль скорости и ускорения руки робота

Операция монтажа ИС:







Линейный электрический привод с направляющей качения (E-MY2C) и с прецизионной направляющей (E-MY2H)

- Программирование не требуется (управление аналогично пневматическому цилиндру)
- Позиционирование в промежуточных положениях
- Исполнения со встроенным и выносным контроллером
- Возможность ручного управления
- Простота обслуживания
- Различные варианты размещения двигателя
- Точность позиционирования 0,01 мм (в крайних положениях), 0,1 мм (в промежуточных положениях)
- Легко настраиваемые скорость и ускорение
- Максимальная скорость - 1000 мм/с, максимальное ускорение - 4,9 м/с^2

Технические характеристики

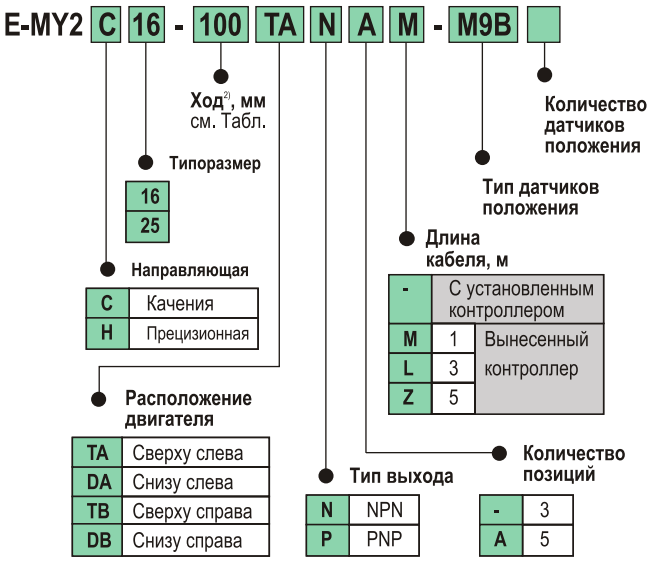
Типоразмер		16	25
Максимальная нагрузка (кг)		5	10
Диапазон рабочих скоростей (м/с)		100 ~ 1000	
Диапазон рабочих ускорений (м/с^2)		0.49 ~ 4.90	
Кривая ускорения и торможения		Трапеция	
Направление перемещения		Горизонтальное	
Количество точек позиционирования		Конечные положения - 2 (упоры), промежуточные положения - 1 или 3 (3- или 5-позиционный)	
Точность позиционирования (мм)	Конечные положения	±0.01	
	Промежуточные положения	±0.1	
Метод позиционирования промежуточных положений		Прямое управление (установка каретки вручную), установка каретки при помощи контроллера	
Настройка положений		При помощи контроллера	
Светодиодная индикация		Индикатор электропитания, индикатор предупреждения, индикатор завершения позиционирования	
Входные сигналы		“выбор точки позиционирования”, “экстренная остановка”	
Выходные сигналы		“завершение позиционирования”, “неполадки в работе”, “готовность к следующей операции”	
Напряжение питания		24 VDC ± 10%	
Потребление тока		2.5 A (max 5 A) при 24 VDC	
Входные цепи		опторазвязка, ≤ 6 мА при 24 VDC	
Выходные цепи		открытый коллектор, ≤ 30 VDC, ≤ 20 мА	
Определяемые неполадки работы		Экстренная остановка, неполадки внешнего выхода, сбои напряжения питания, сбои перемещения, нештатная температура, сбои хода, нештатная работа двигателя, нештатная работа контроллера	
Диапазон рабочих температур (°C)	Привод	5 ~ 50	
	Контроллер	5 ~ 40	
Диапазон рабочей относит. влажности воздуха (%)		35 ~ 85	
Диапазон температур хранения (°C)		-10 ~ 60	
Напряжение пробоя изоляции		Между любым контактом и корпусом не хуже 1000VAC в течение 1минуты	
Сопротивление изоляции		Между любым контактом и корпусом 50 МОм (при 500VDC)	
Помехоустойчивость		100 В, полный размах, длительность импульса 1 мкс, время нарастания 1 нс	

Номер для заказа

Стандартные длины хода (мм)

Типо-размер	Стандартные длины хода (мм) *	Макс. длина хода (мм)
16, 25	100, 200, 300, 400, 500, 600, 700, 800, 900, 1000	1000

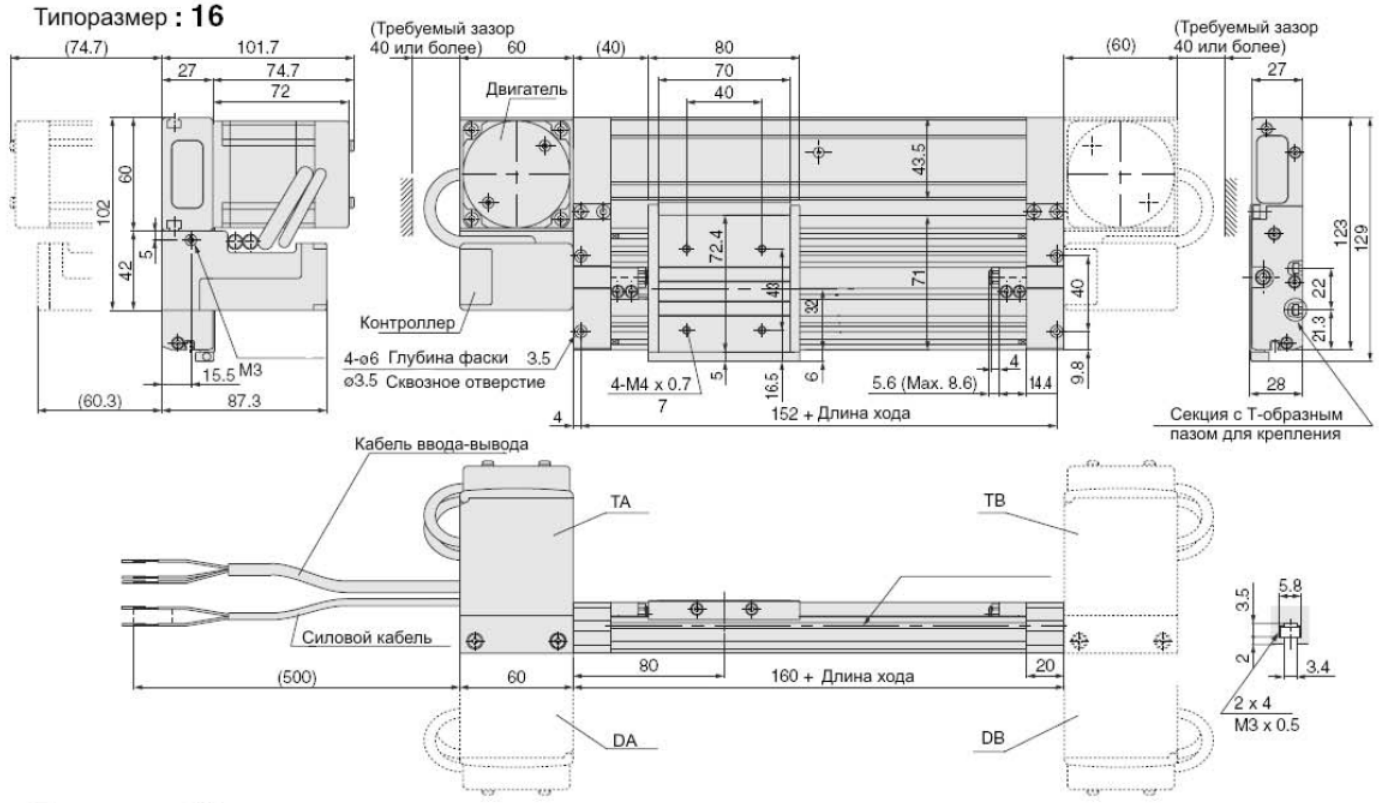
* Другие значения длины хода - по запросу



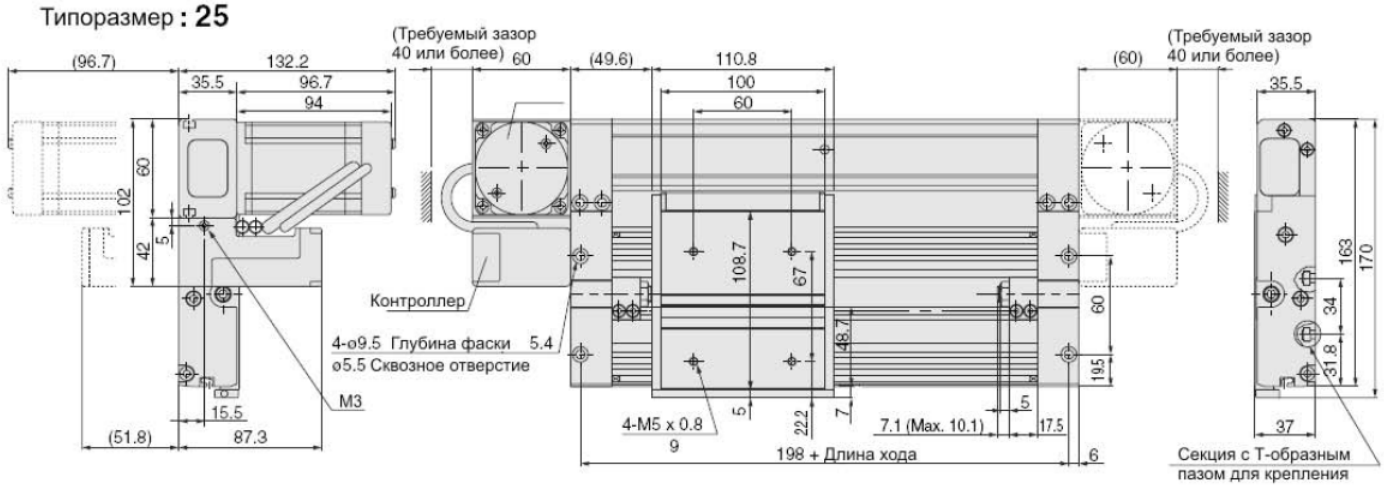
Размеры

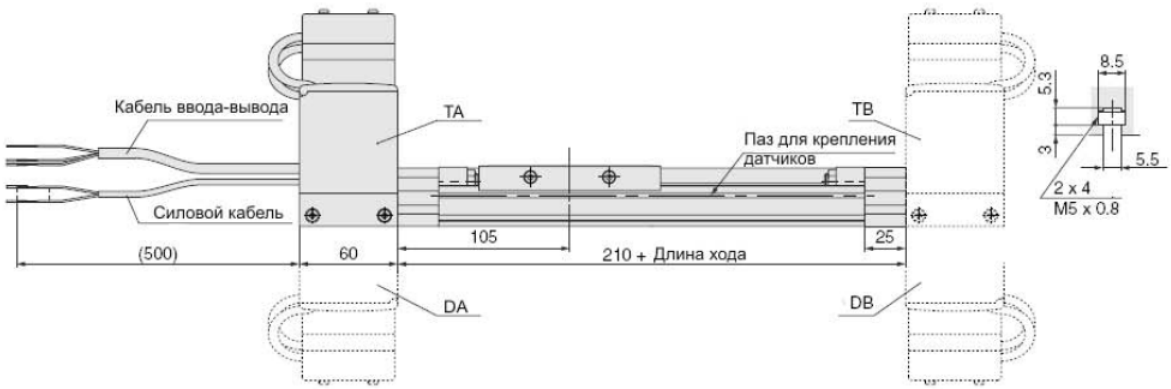
E-MY2C Типоразмер — Ход

Типоразмер : 16



Типоразмер : 25

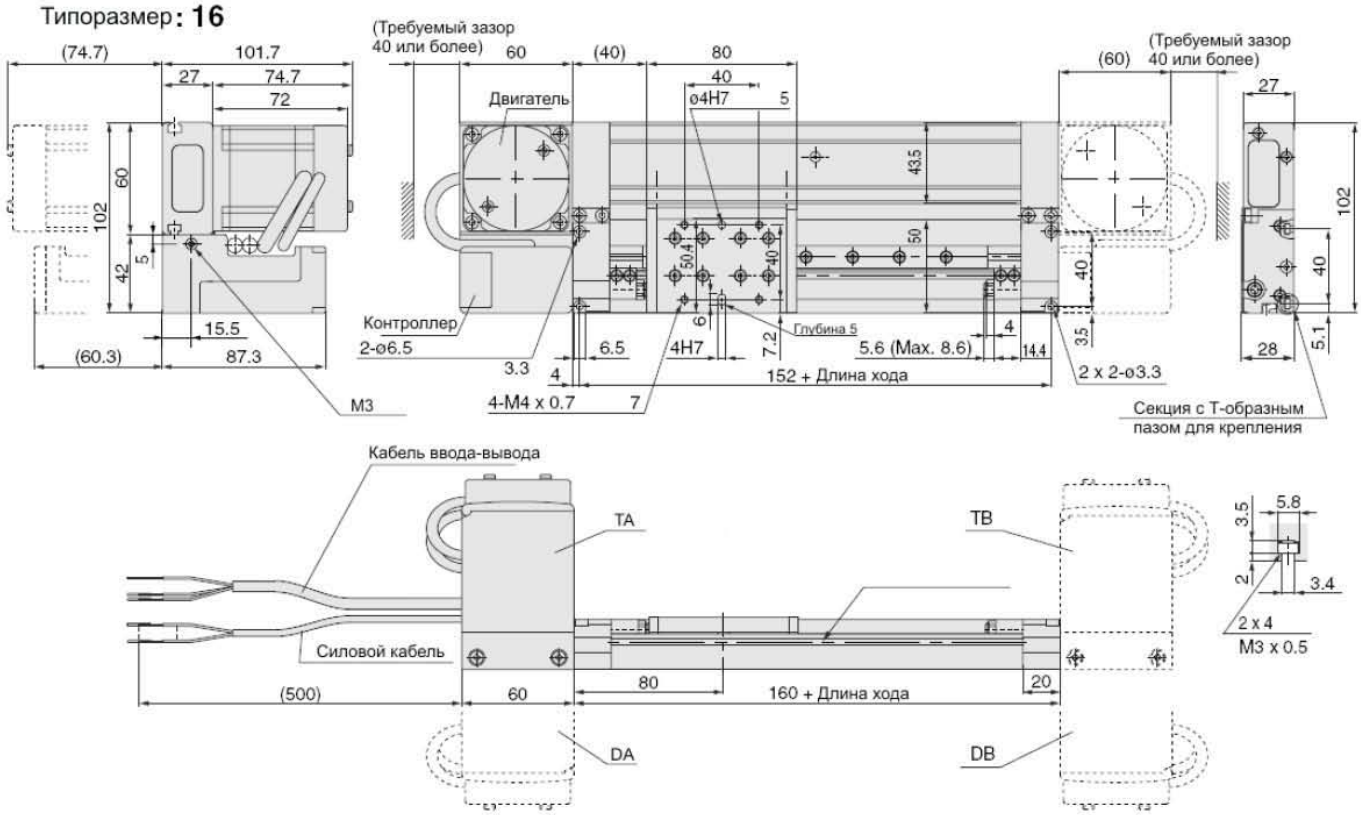




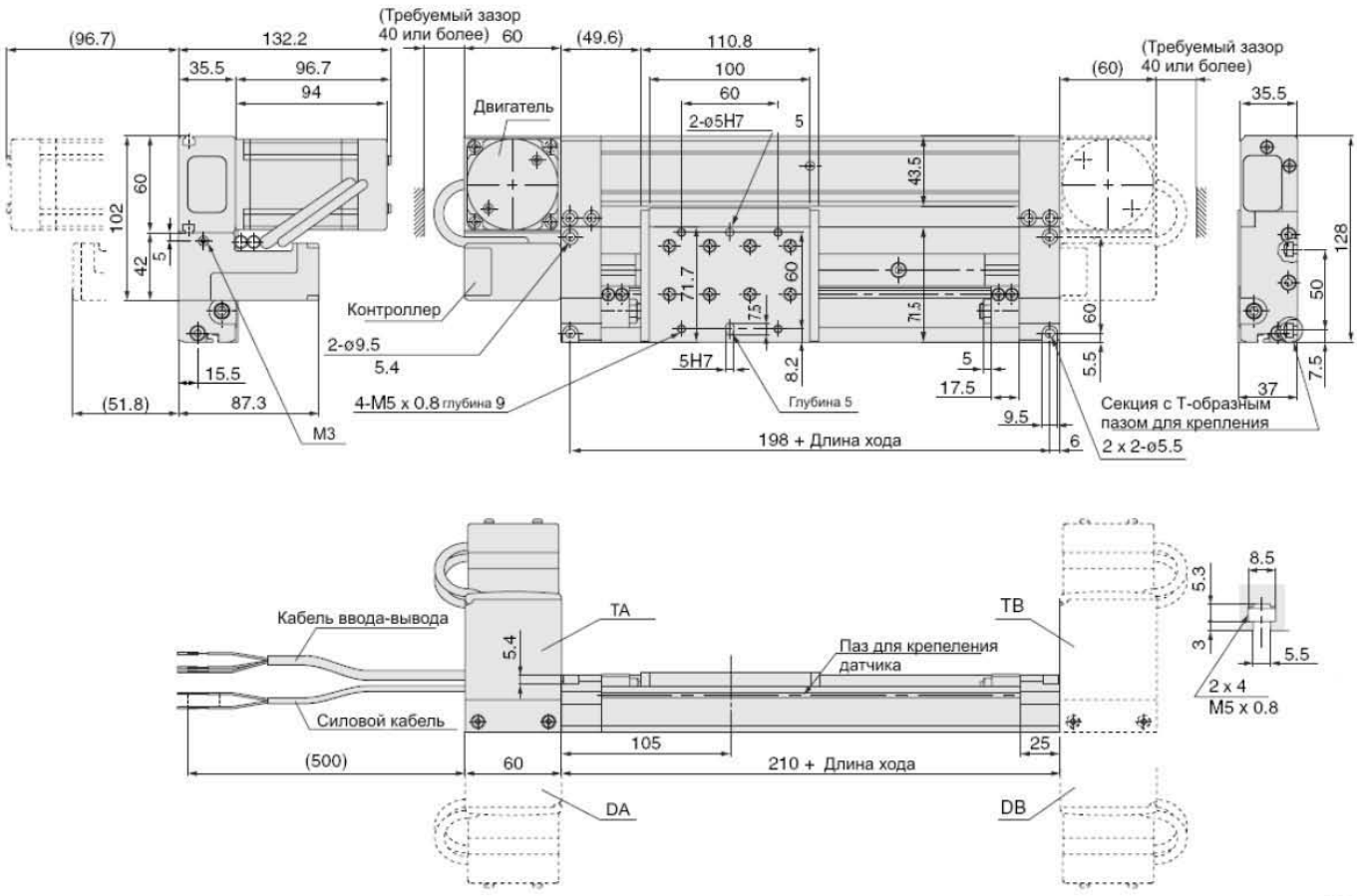
Размеры

E-MY2H | Типоразмер | Ход

Типоразмер: **16**



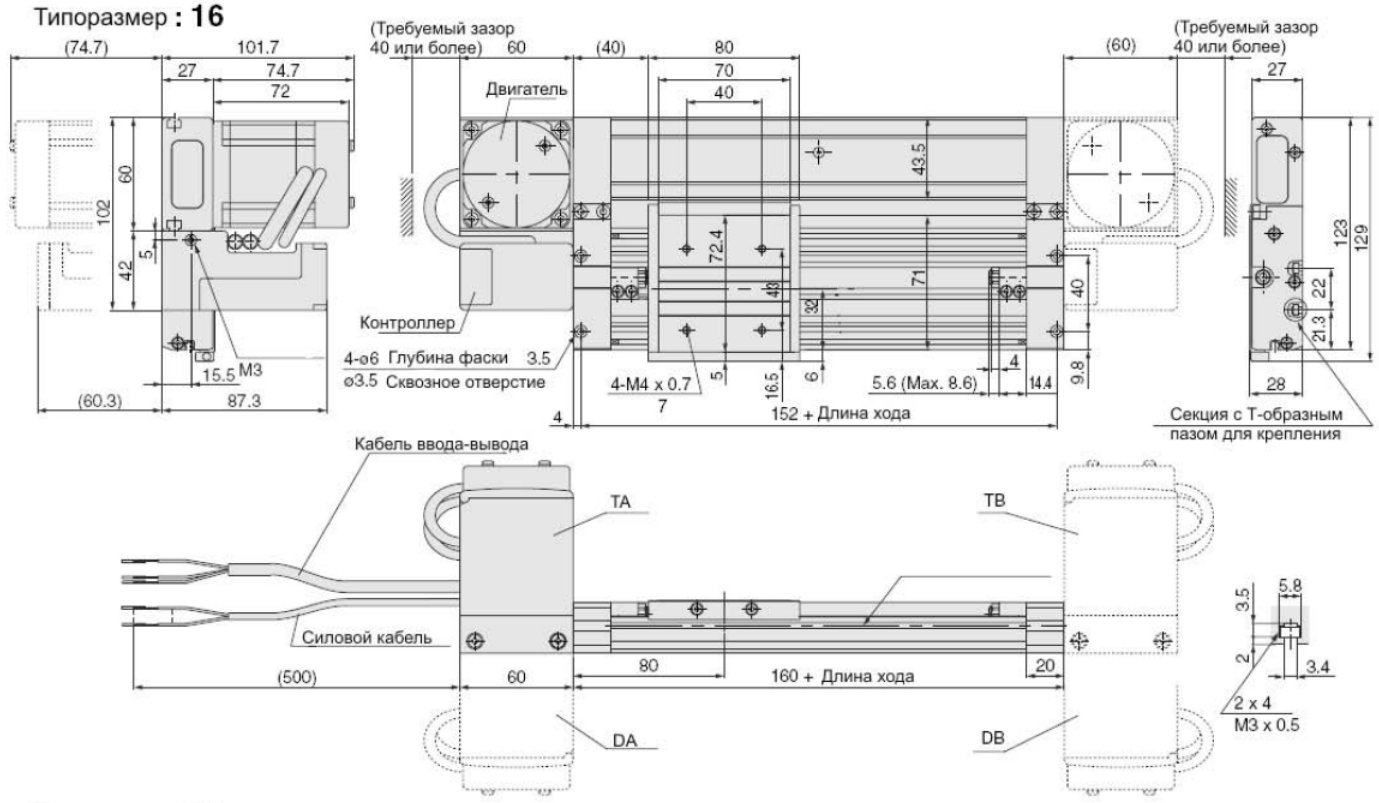
Типоразмер : **25**



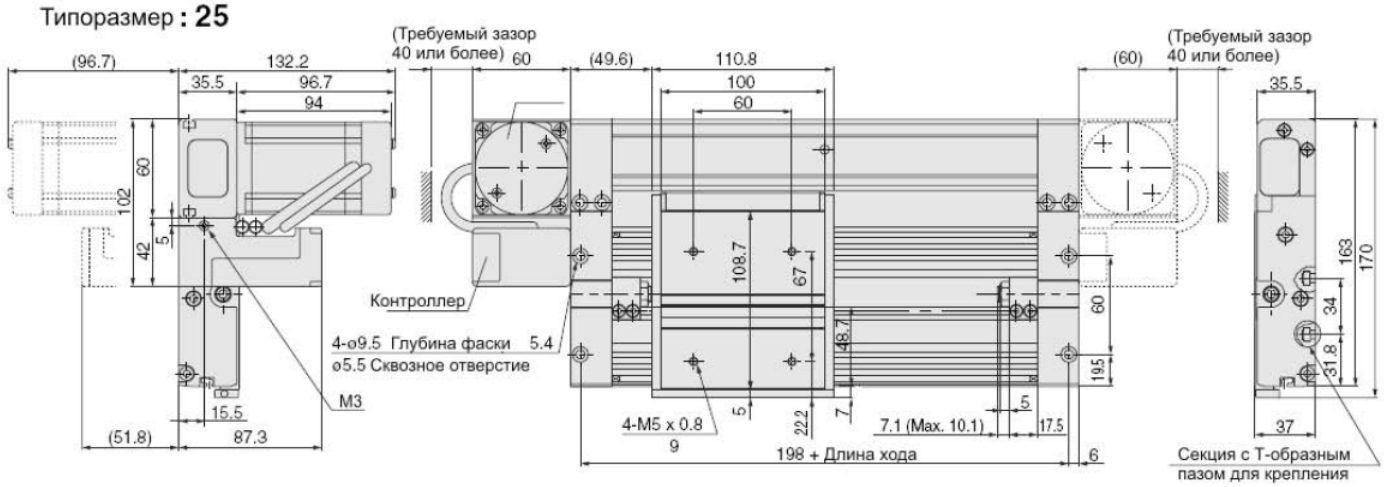
Размеры

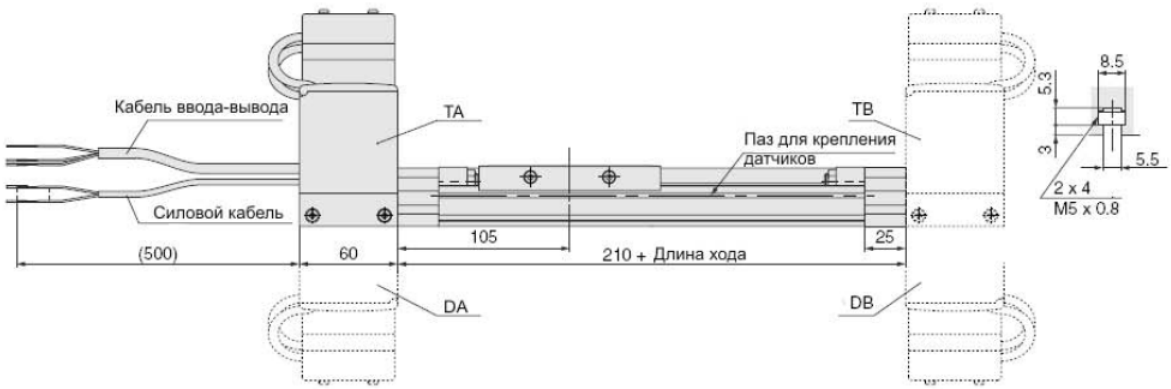
E-MY2C Типоразмер — Ход

Типоразмер : 16



Типоразмер : 25

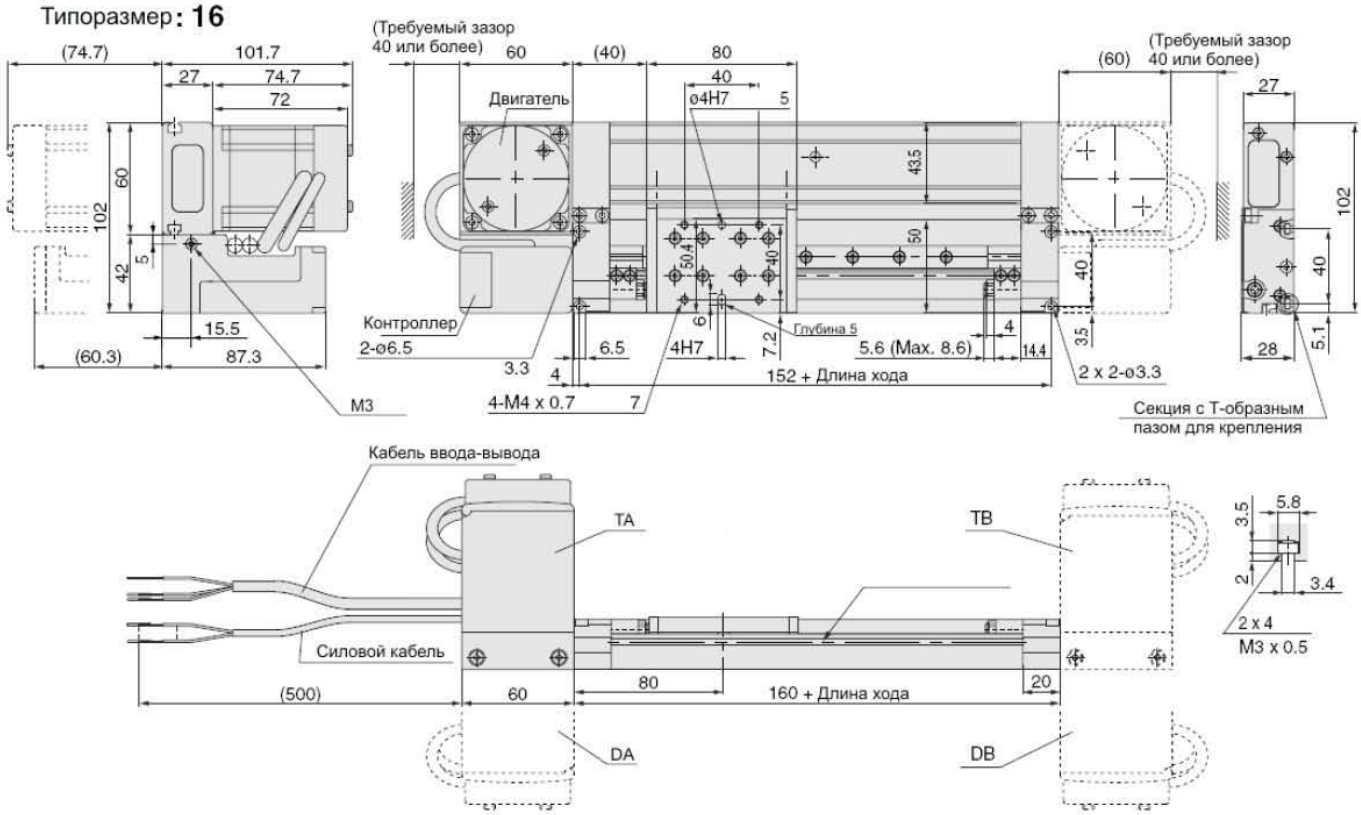




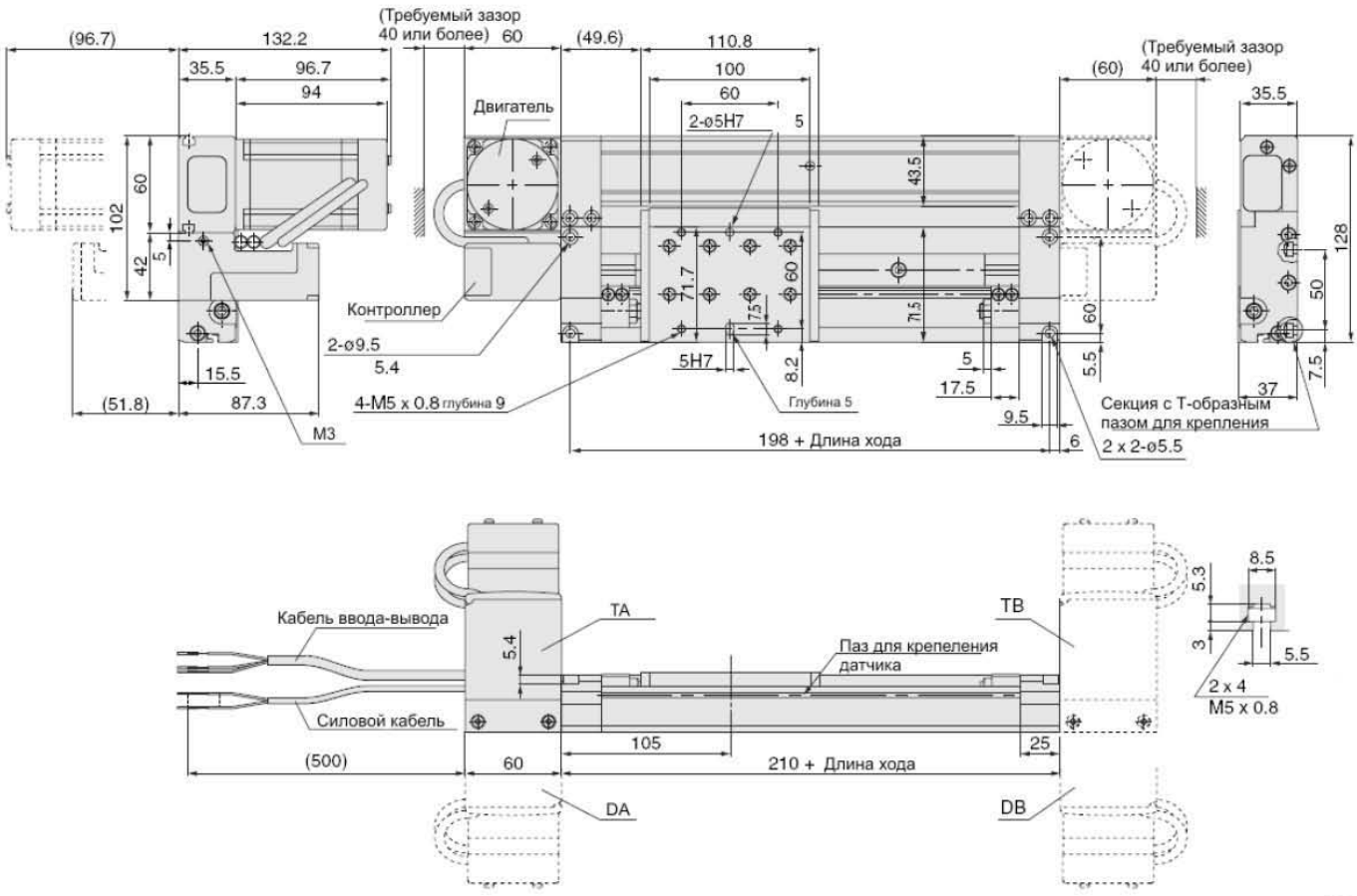
Размеры

E-MY2H | Типоразмер | Ход

Типоразмер: **16**



Типоразмер : **25**



Электрический привод

LZB/LZC

Может применяться в случаях, когда нет источника сжатого воздуха, или в отраслях промышленности, в которых пневмооборудование используется частично, таких как полупроводниковая или медицинская техника.

- Управление аналогично пневматическому цилиндру
- Защита блока управления и мотора от перегрузки
- Возможна регулировка момента с блока управления
- Низкий уровень шума (LZC3*~41Дб)

Технические характеристики

Модель		L□Z□3L	L□Z□3M	L□Z□3H	L□Z□5L	L□Z□5M	L□Z□5H
Типоразмер		3 (соответствует цилиндру ∅16)			5 (соответствует цилиндру ∅25)		
Скорость (без нагрузки), мм/с		33	100	200	33	100	200
Осевая нагрузка, Н		80	43	24	196	117	72
Стандартные длины хода, мм		25, 40, 50, 100, 200					
Рабочая температура, °C		5 ~ 40					
Масса (без монтажных элементов), кг	L□ZB	0,67 + (0,07 /на 50 мм длины хода)			1,74 + (0,16 /на 50 мм длины хода)		
	L□ZC	0,72 + (0,03 /на 50 мм длины хода)			1,72 + (0,16 /на 50 мм длины хода)		
Допустимое отклонение длины хода		+1 0					
Электродвигатель		Постоянного тока					
Контроллер для управления электроприводом		LC3F212-5A3□			LC3F212-5A5□		

Номер для заказа

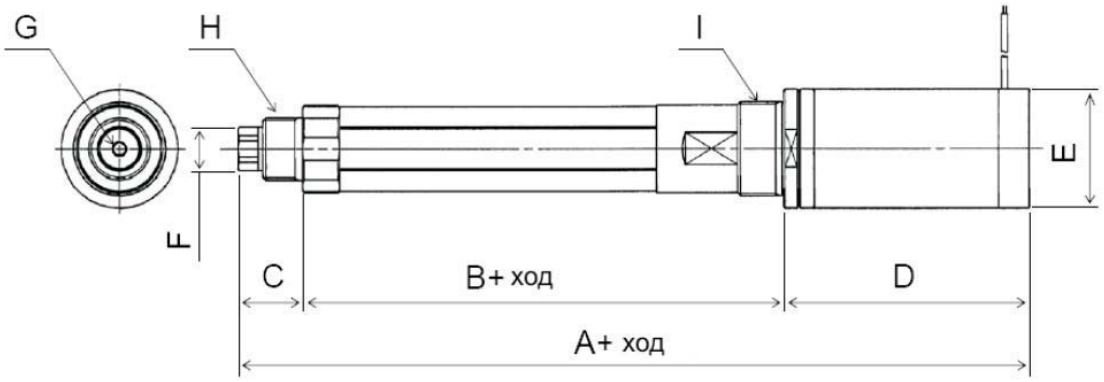
L D Z B L 3 H - 100 A3 L H - M9B 3

- D: С магнитным кольцом
- Серия: B LZB; C LZC
- Тип резьбы на штоке: - Внутренняя; L Наружная
- Ход[2], мм: см. табл.
- Количество датчиков: - нет; S Один; n n датчиков
- Типоразмер: 3 соотв. ∅16; 5 соотв. ∅25
- Тип датчика: M9N D-M9N(L); M9P D-M9P(L); M9B D-M9B(L)
- Тип крепления: B Базовый; L На лапах; F[1] Фланец; U[1] Цапфа
- Скорость[2]: L Низкая; M Средняя; H Высокая
- Крышка[3]: - Нет; H Половина; F Полная

[1] Только для серии LZB.
[2] Для типа с креплением на цапфе: макс. длина хода 150 мм, скорость L.
[3] Только для серии LZC

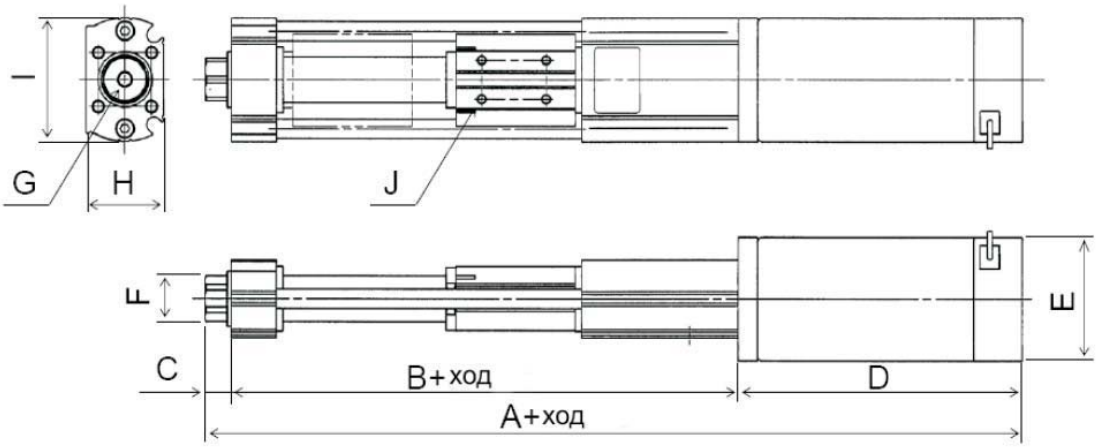
Размеры электропривода

LZB



	A	B	C	D	E	F	G	H	I
L*ZBB3	214.5	106.5	21	87	ϕ38	ϕ14	M5	M20	M30
L*ZBB5	282	135.5	33	113.5	ϕ54.5	ϕ22	M8	M32	M45

LZC



	A	B	C	D	E	F	G	H	I	J
L*ZCB3	203	107	8	88	ϕ38	ϕ14	M5	24	38	M4
L*ZCB5	268	139	13	116	ϕ54.5	ϕ22	M8	38	58	M4

Контроллер для электрического привода LC3F2

Предназначен для управления двигателем электрического привода LZB/LZC

- Возможность ручного управления
- Возможность регулировки усилия подачи
- Управление при помощи трех входных сигналов

(направление движения, регулировка нагрузки, ВКЛ / ВЫКЛ)

LC3F212-5A3□ *LC3F212-5A5□*

Технические характеристики

Номер для заказа	**LC3F212-5A3□**	**LC3F212-5A5□**
Используется с электроприводом	**L□Z□3□-□□□A3□□-□□□□**	**L□Z□5□-□□□A3□□-□□□□**
Напряжение питания	24 В пост. тока ±10%	
Потребление тока , А	Не более 1,3	Не более 2,3
Цвет панели	Серый	Голубой
Входной сигнал	Опторазвязка, 24 В пост. тока ±10%, не более 8мА на 1 точку	
Выбор осевого усилия	100 % или регулируемое (в диапазоне от 10 до 70 %)	
Рабочая температура, ºС	5–40	
Относительная влажность воздуха, %	35–85	
Требования к окружающей среде	Для установки внутри помещения, в месте, недоступном для прямых солнечных лучей. Воздух рабочей зоны не должен содержать коррозионно-активных или горючих газов, масляного тумана, частиц пыли	
Светодиодная индикация	Индикатор питания POWER, индикатор направления движения A-PHASE, индикатор отсутствия функционирования OFF, индикатор регулировки момента SET	
Вес, г	145	

Номер для заказа

Контроллер LC3F2□

Описание	Типоразмер электропривода	
	3	5
В комплект поставки входят ответные части разъемов (3 шт.) в разобранном виде, без проводов	**LC3F212-5A3A**	**LC3F212-5A5A**
Без ответных частей разъемов	**LC3F212-5A3B**	**LC3F212-5A5B**

Принадлежности (заказываются отдельно)

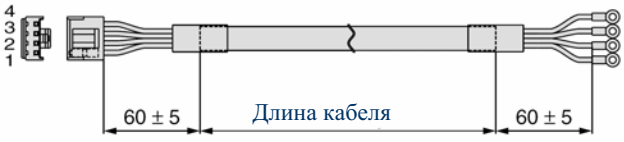
Наименование	Номер для заказа		
	Длина кабеля 1 м	Длина кабеля 2 м	Длина кабеля 5 м
Кабель питания в сборе	**LC3F2-1-C1-01-1**	**LC3F2-1-C1-02-1**	**–**
Ответная часть разъема CN2 в сборе с кабелем	**LC3F2-1-C2-01-1**	**LC3F2-1-C2-02-1**	**–**
Ответная часть разъема CN3 в сборе с кабелем	**–**	**LC3F2-1-C3-02-1**	**LC3F2-1-C3-05-1**
Комплект ответных частей разъемов (3 шт.) в разобранном виде, без проводов	**LC3F2-1-C0**		

Кабель питания (ответная часть разъема CN1)

Контакт		№ контакта	Цвет провода
FG	Земля	1	Желтый/зеленый
DC(+)	+24 В	2	Коричневый
DC(–)	0 В	3	Синий

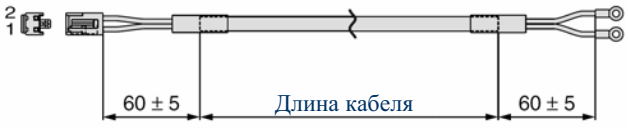
Ответная часть разъема CN2 (входные сигналы с блока управления)

Контакт	Входные сигналы	описание
COM	общий	№1 белый
ON	ON: пуск двигателя	№2 красный
	OFF: остановка двигателя	
SET	ON: регулировка нагрузки	№3 Желтый
	OFF: 100% значение нагрузки	
A-PHASE	ON: втягивание (A-PHASE)	№4 Оранж.
	OFF: выдвижение (B-PHASE)	

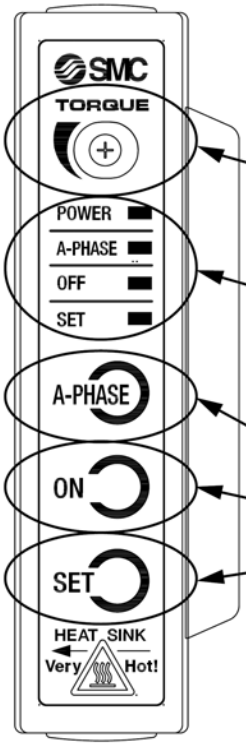


Ответная часть разъема CN3 (выходные сигналы на электропривод)

Контакт	№ контакта	Цвет провода
OUT A	1	Синий
OUT B	2	Красный

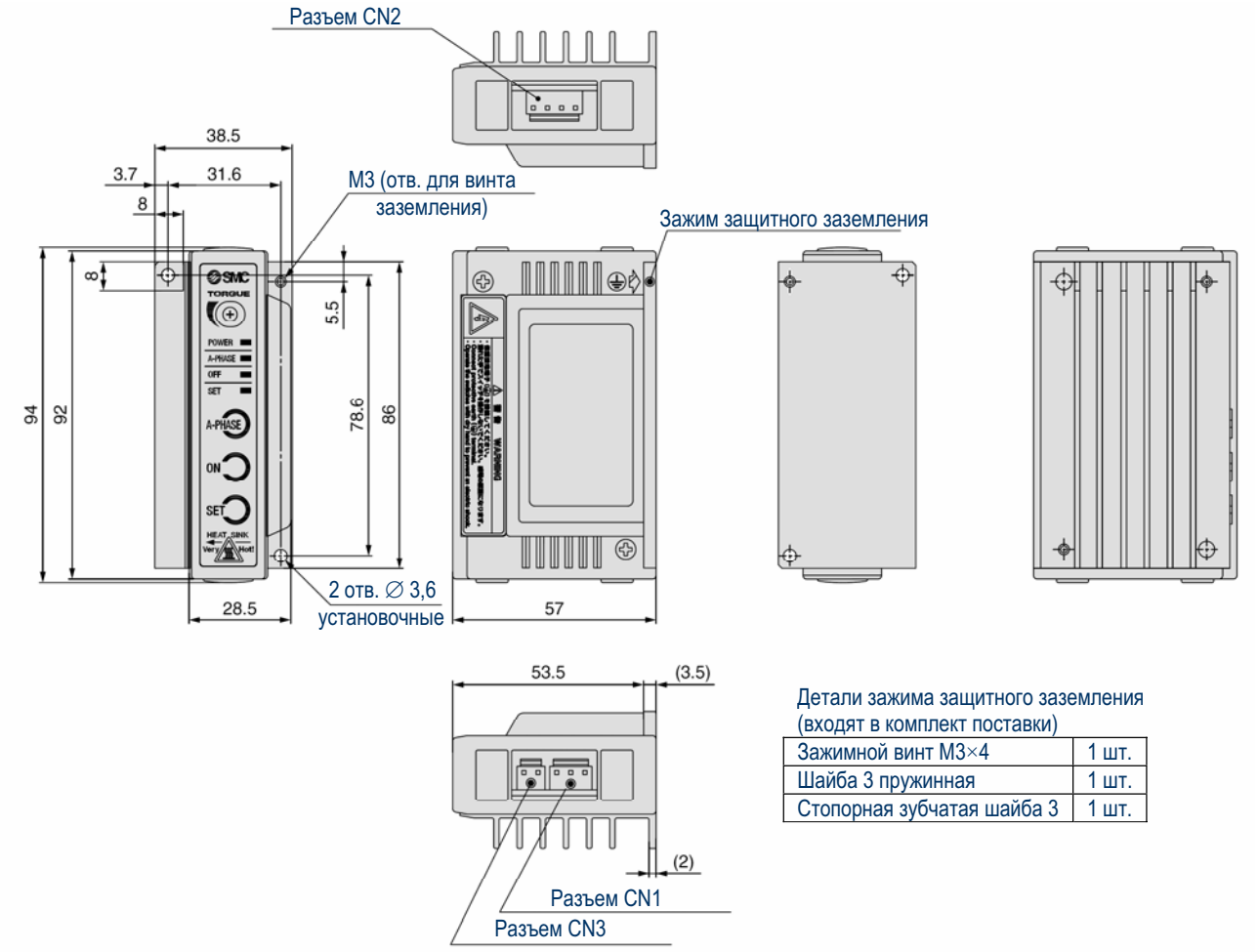


Индикация и настройка



Элемент	Обозначение на панели	Функции
Настроечный винт	TORQUE	Регулировка нагрузки
Индикаторы	POWER	Горит при наличии питания
	A-PHASE	Горит при наличии входного сигнала «A-PHASE» (во время втягивания штока)
	OFF	Горит, когда двигатель не работает
	SET	Горит при поступлении входного сигнала «SET» (величина нагрузки установлена при помощи регулировки) Не горит при 100% нагрузке
Ручное управление (команда действует при нажатой кнопке)	A-PHASE	Втягивание штока
	ON	Пуск
	SET	На выходе – нагрузка, полученная в результате регулировки

Размеры контроллера LC3F2



Детали зажима защитного заземления (входят в комплект поставки)

Зажимной винт M3×4	1 шт.
Шайба 3 пружинная	1 шт.
Стопорная зубчатая шайба 3	1 шт.

Электронные датчики положения D-M9N / D-M9P / D-M9B

Технические характеристики

Номер для заказа	D-M9N	D-M9P	D-M9B
Кол-во выводов	3		2
Выход	NPN-структура	PNP-структура	–
Область применения	Управление на ИС, реле, ПЛК		Реле (24 VDC), ПЛК
Напряжение питания, VDC	5, 12, 24 (от 4,5 до 28)		–
Потребление тока, мА	не более 10		–
Рабочее напряжение, VDC.	Не более 28	–	24 (10~28)
Макс. ток, мА	Не более 40		2,5~40
Внутр. падение напряжения, В	Не более 0,8		Не более 4
Ток покоя	Не более 100 мкА при 24 VDC		Не более 0,8 мА
Индикатор рабочего состояния	Светодиодный, красного свечения		
Масса, г	8		7
Время срабатывания, мс	1		
Устойчивость к ударным нагрузкам, м/с^2	1000		
Электр. прочность изоляции	1000 VAC в течение 1 мин. (между проводом и корпусом)		
Кабель	0,5м, изоляция – маслостойкий винил, 2,7×3,2 мм, сечение 0,15 мм^2, 3 жилы (D-M9N и D-M9P), 2 жилы - D-M9B		

- Рабочая температура – от -10 до +60 ºС
- Сопротивление изоляции – не менее 50 МОм при 500 VDC
- Степень защиты IP67 (стандарт IEC529),водонепроницаемость JIS C 0920, маслостойкость
- Соответствие стандартам CE